



SPECIAL EDITION 2021
INVENTIONS GENEVA
EVALUATION DAYS
- VIRTUAL EVENT



10-14
MARCH 2021

INVENTIONS-GENEVA.CH

LIST OF PARTICIPANTS

LIST OF INVENTIONS CLASSES

CLASS A	Mechanics - Engines - Machinery - Tools - Industrial Processes - Metallurgy
CLASS B	Clocks and watches - Jewellery - Machinery - Tools
CLASS C	Computer sciences - Software - Electronics - Electricity - Methods of communication
CLASS D	Building - Architecture - Civil Engineering - Construction - Materials - Woodwork
CLASS E	Sanitation - Ventilation - Heating
CLASS F	Security - Rescue - Alarm
CLASS G	Ironmongery - Do-It-Yourself
CLASS H	Furnishing - Interior architecture
CLASS I	Domestic Science - Restaurant equipment
CLASS J	Commercial, industrial and office equipment
CLASS K	Agriculture - Horticulture - Gardening
CLASS L	Clothing - Textiles - Machines and accessories
CLASS M	Medicine - Surgery - Hygiene - Orthopaedics - Material for the handicapped
CLASS N	Optics - Photography - Cinematography
CLASS O	Teaching methods and materials - Musical instruments - Art materials
CLASS P	Transport - Motor vehicles - Ships - Aviation - Accessories
CLASS Q	Foodstuffs - Drinks - Cosmetics - Paramedical - Health - Hygiene
CLASS R	Sport - Leisure
CLASS S	Practical novelties - Presents
CLASS T	Publicity - Printing - Packaging
CLASS U	Games - Toys
CLASS V	Protection of the environment - Energy

LIST OF PARTICIPANTS IN ALPHABETICAL ORDER

ABDELRAZEK Hossam Eldin Mohamed Mohamed - EGYPT	CLASS P
ABDULLAH Ziyad Ahmed Abdulmatin - SAUDI ARABIA	CLASS C
ABORAYA Dalia Refat - SAUDI ARABIA	CLASS C
AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY - POLAND	CLASS V
AHARI Hamed, ANVAR Seyed Amirali, ATAEE Maryam, AZARI Armin, KARGAR Maryam, EFATIAN Helen - IRAN	CLASS Q
AHT-ONG Duangdao - THAILAND	CLASS K
AIVAZAN Inès - FRANCE	CLASS C
AL JOHANI Samar Olaythah - SAUDI ARABIA	CLASS C
AL-BOGAMI Amjad Salman - SAUDI ARABIA	CLASS C
AL-HAMAD Eiman Abdulla - QATAR	CLASS F
AL-RAHIMI Rashed, ZIAD Mohamed - QATAR	CLASS C
AL-SAYED HASHIM Tarek Hisham - EGYPT	CLASS A
AL-SHAMARI Hanan Khamis - QATAR	CLASS R
AL-SHEHRI Samia Fayeze Mohammed - SAUDI ARABIA	CLASS C
ALAJLAN Saleh, ALMULLA Abdullah, IBRAHIM Mohammed Mahdi - SAUDI ARABIA	CLASS F
ALBARAKATI Ali Saeed - SAUDI ARABIA	CLASS E
ALGHALBI Nourzan, ALGHAMDI Joory, ZAMKAH Roa'a, TAYEB Wed - SAUDI ARABIA	CLASS R
ALHOGAIL Sulaiman, ALSAAWI Mashel, SHAMSAN Zaid - SAUDI ARABIA	CLASS J
ALKHALDI Mutaz N., ALSHOUMER Saleh F., ALBADRANI Hamood A., and HAJLOONI Khalil - SAUDI ARABIA	CLASS J
ALKHALIFAH Rayan, GHALY Sidi - SAUDI ARABIA	CLASS C
ALNEFAIE Abeer, ALOBAIDI Lujain, ALAMOUDI Masha'el, ALMARWANI Amal - SAUDI ARABIA	CLASS H
ALPHAO CO., LTD. - SOUTH KOREA	CLASS C
ALRABIAH Maha, BEN YAHIA Faycal, AL-DOSARI Asma, BOUZEGZA Firdaous, AL-DOSSARY Mai and AL-HAMDAN Norah - SAUDI ARABIA	CLASS M
ALRIFAI Alyaa, NADHRAH Hebah, MASOUDI Lujain, SAIRAFI Wed - SAUDI ARABIA	CLASS M

ALYAHYA Munirah, ALKHALIFAH Sadeem, ALAYBAN Dalal, ALMUHRIJ Alreem, ALOWISHEQ Areeb - SAUDI ARABIA	CLASS C
ALZHRANI Ibrahim Mohammed Abdallah - SAUDI ARABIA	CLASS F
AMIN Nowshad, SHAKERI Mohammad - MALAYSIA	CLASS V
ANSARI Niusha, GALESHI Sedigheh - IRAN	CLASS M
APPALASAMY Suganthi - MALAYSIA	CLASS V
APPLICATION TECHNOLOGY COMPANY LIMITED - HONG KONG	CLASS C
ARAMVITH Supavadee, MUHAMMAD Wazir, RUANGSANG Watchara - THAILAND	CLASS C
ATASHI Hesam Adin, GHORANI Seyyed Mojtaba - IRAN	CLASS M
ATHINUWAT Dusit - THAILAND	CLASS K
ATTIA Tamer - EGYPT	CLASS A
AUTOMOTIVE PLATFORMS AND APPLICATION SYSTEMS R&D CENTRE/ HONG KONG PRODUCTIVITY COUNCIL - HONG KONG	CLASS J CLASS P
AWAD Khaled Mahfoodh Ba Humaish - YEMEN	CLASS V
BAGHDADI Ragad - SAUDI ARABIA	CLASS M
BAJURI Mohd Yazid bin - MALAYSIA	CLASS M
BAMEER Rana, ALHARBI Nourah, GEDDAN Shahad - SAUDI ARABIA	CLASS M
BARRI Sara, ALGHAMDI Ghadeh, ALSHEHRI Fatmah - SAUDI ARABIA	CLASS L
BEIJING LIFIN-TECH CO.,LTD - CHINA	CLASS V
BEIJING METALLURGICAL EQUIPMENT RESEARCH DESIGN INSTITUTE CO.,LTD - CHINA	CLASS U CLASS V
BEIJING RESEARCH CENTER FOR INFORMATION TECHNOLOGY IN AGRICULTURE - CHINA	CLASS K
BEIJING UNIVERSITY OF POSTS AND TELECOMMUNICATIONS - CHINA	CLASS C
BIETRIX Robert - FRANCE	CLASS K
BILAK Viktor - RUSSIA	CLASS O
BLUE PIN (HK) LIMITED - HONG KONG	CLASS C CLASS J
BOKYONG CO., LTD - SOUTH KOREA	CLASS A
BONCHA BONCHA INTERNATIONAL COMPANY LIMITED - CHINESE TAIPEI	CLASS Q

BOONPISUTTINANT Korawinwich - THAILAND	CLASS Q
BOONYUEN Supakorn - THAILAND	CLASS Q
BUKHARI Ohud Abdullah - SAUDI ARABIA	CLASS M
CAMERON DENNIS JZEN MISHA JERRY - CHINA	CLASS F
CARMEL PAK U SECONDARY SCHOOL - HONG KONG	CLASS M
CHAIROJRAT Varinthon - THAILAND	CLASS M
CHANG SHA UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA	CLASS C CLASS D
CHANGZHOU HIGH-TECH RESEARCH INSTITUTE OF NANJING UNIVERSITY - CHINA	CLASS M
CHE OMAR Rohayu - MALAYSIA	CLASS V
CHEN Zhibo - HONG KONG	CLASS Q
CHENGDU AIRCRAFT INDUSTRIAL (GROUP) CO.,LTD - CHINA	CLASS A
CHINA AGRICULTURAL UNIVERSITY - CHINA	CLASS K
CHINA UNITED NETWORK COMMUNICATIONS GROUP COMPANY LIMITED - CHINA	CLASS C
CHINESE RESEARCH ACADEMY OF ENVIRONMENTAL SCIENCES - CHINA	CLASS V
CHING Henry - CANADA	CLASS F CLASS P
CHINGSHIN ACADEMY - CHINESE TAIPEI	CLASS V
CHINGSUNGNOEN Artit - THAILAND	CLASS L
CHO Jaebin - SOUTH KOREA	CLASS K
CHOBPENTHAI Thanapon - THAILAND	CLASS M
CHOI Tae Kwang - SOUTH KOREA	CLASS A
CHONGQING THREE GORGES UNIVERSITY - CHINA	CLASS C
CHRISTY LIU, HUANG GUANZHE - CHINA	CLASS M
CHUEAMUEANGPHAN Jirachet - THAILAND	CLASS C
CHUNPENG WANG, YIYANG ZHAI, SHENG SU, SITAN JIANG - CHINA	CLASS C
CITY UNIVERSITY OF HONG KONG - HONG KONG	CLASS C CLASS D CLASS M

CITY UNIVERSITY OF HONG KONG - HONG KONG	CLASS O CLASS V
COHEN Simon - FRANCE	CLASS N
COLLEGE OF ELECTRICAL ENGINEERING (ZHEJIANG UNIVERSITY) - CHINA	CLASS C CLASS P
CREPLE. CO.,LTD - SOUTH KOREA	CLASS O
CYTOMICS LIMITED - HONG KONG	CLASS M
DAEHYUNENTEC CO., LTD. - SOUTH KOREA	CLASS E
DALIAN UNIVERSITY OF TECHNOLOGY - CHINA	CLASS A CLASS C CLASS D CLASS M CLASS V
DAMIN FOODSTUFF (Z HANGZHOU) CO.,LTD - CHINA	CLASS Q
DATO' DR. SIEW KUANG CHOONG@ SIOW KUANG LING - MALAYSIA	CLASS M
DEL ROSAL CIMADEVILLA Pedro Manuel - SPAIN	CLASS P
DEPARTMENT OF ELECTRICAL ENGINEERING, TSINGHUA UNIVERSITY - CHINA	CLASS C
DEPARTMENT OF ENVIRONMENTAL SCIENCE AND ENGINEERING, FUDAN UNIVERSITY - CHINA	CLASS V
DEPARTMENT OF ENVIRONMENTAL SCIENCE AND ENGINEERING, FUDAN UNIVERSITY - CHINA	CLASS V
DERBARTANIAN Juan Carlos - ARGENTINA	CLASS V
Dr. CHOMANEE Jiraporn, Dr. JUNTARACHAT Niramol and Mr. KATATHIKARNKUL Supagone - THAILAND	CLASS I
EASTERNSKY CORPORATION - SOUTH KOREA	CLASS A
EL TONSI Husham Hassan Mohamed Hussien - EGYPT	CLASS I
EL-SEBAEI Fatma Samir Abd El-Salam - EGYPT	CLASS M
ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG	CLASS C CLASS D CLASS E CLASS J CLASS S
ELKOMY Mahmoud Elkotp Abdelmaaboud - EGYPT	CLASS M

ELSABAHY Mahmoud Fahmy Ali - EGYPT	CLASS M
ELSHAWADFI Khalid Gamal - EGYPT	CLASS F
ESKANDARI Mahsa - IRAN	CLASS M
FALLATAH Amjad abdullah ishaq - SAUDI ARABIA	CLASS O
FARZPOURMACHIANI Mehdi, NAGHIBI MASOULEH Simin, FARZPOURMACHIANI Ali, GORJI Mahmoodreza, ZARIFI MONTAZER Mehrshad, SHIRZADI MOTLAGH Akbar, FARZPOURMACHIANI Hassan, RAJABI Sina, RAHMANZAD MASOULEH Ahmad, IZADI JORSHARI Jalal, BASIRI Salar, BARAZANDEHTALAB Maryam, SIABI Davoud (IVAZ PLUS) - IRAN	CLASS R
FAYE Adama - SENEGAL	CLASS M
FELEMBAN Jeehad Mansour - SAUDI ARABIA	CLASS M
FU-HSIN TRADE & ARTS SCHOOL - CHINESE TAIPEI	CLASS V
FUANGROD Todsaporn - THAILAND	CLASS M
FUDAN UNIVERSITY - CHINA	CLASS C CLASS J CLASS M CLASS Q CLASS V
FUJIAN UNIVERSITY OF TECHNOLOGY - CHINA	CLASS M
GALESHI Sedigheh, ANSARI Niusha - IRAN	CLASS M
GASCUEL Jacques - ANDORRA	CLASS C
GD MIDEA AIR-CONDITIONING EQUIPMENT CO., LTD - CHINA	CLASS E
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI - CHINA	CLASS A CLASS C CLASS E CLASS V
GREEN ENERGY NANO TECHNOLOGY CO.,LTD - CHINESE TAIPEI	CLASS M
GUANGDONG UNIVERSITY OF TECHNOLOGY - CHINA	CLASS A
GUANGDONG UNIVERSITY OF TECHNOLOGY- YONGKANG ZHANG - CHINA	CLASS C
GUANGZHOU HKUST FOK YING TUNG RESEARCH INSTITUTE - CHINA	CLASS V
GUODIAN UNITED POWER TECHNOLOGY COMPANY LTD. - CHINA	CLASS C
HA Jinseok - SOUTH KOREA	CLASS F
HAFEZ Mohamed Ahmed - MALAYSIA	CLASS D

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HAJZEINALI Sahar - IRAN	CLASS M
HANGZHOU COOLKIND BOAT TECHNOLOGY CO.,LTD. - CHINA	CLASS V
HANGZHOU HUNTER BIOTECHNOLOGY, INC. - CHINA	CLASS Q
HANGZHOU YOSTO COSMETICS CO,LTD. - CHINESE TAIPEI	CLASS Q
HARBIN ENGINEERING UNIVERSITY - CHINA	CLASS C
HASHEMI Fatemeh - IRAN	CLASS M
HASSAN Marwan - UNITED STATES OF AMERICA	CLASS C
HEBEI UNIVERSITY OF TECHNOLOGY - CHINA	CLASS A
HEFEI CAS ION MEDICAL AND TECHNICAL DEVICES CO., LTD - CHINA	CLASS M
HEIKAL Ola Ahmed - EGYPT	CLASS M
HELAL Amr - EGYPT	CLASS M
HNOOHOM Narit - THAILAND	CLASS Q
HONG KONG APPLIED SCIENCE AND TECHNOLOGY RESEARCH INSTITUTE (ASTRI) - HONG KONG	CLASS C CLASS N CLASS V
HONG KONG BAPTIST UNIVERSITY - HONG KONG	CLASS B CLASS C CLASS M CLASS Q
HONG KONG PRODUCTIVITY COUNCIL - HONG KONG	CLASS A CLASS B CLASS C CLASS D CLASS E CLASS F CLASS M CLASS P CLASS R CLASS V
HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA	CLASS A CLASS C CLASS J CLASS M CLASS Q CLASS V

HUNAN ZHUMEI BIOTECHNOLOGY CO., LTD - CHINESE TAIPEI	CLASS Q
HUSAIN Salina - MALAYSIA	CLASS M
HWANG Gi Taek - SOUTH KOREA	CLASS C
INFINITUS (CHINA) COMPANY LTD. - CHINA	CLASS Q
INNOSPIRE TECHNOLOGY LIMITED - HONG KONG	CLASS C
INNOWACYJNE PRZEDSIĘBIORSTWO WIELOBRANZOWE POLIN SP. Z O.O. (INNOVATIVE MULTI-INDUSTRY COMPANY POLIN Ltd) - POLAND	CLASS V
INSTITUTE OF ACOUSTICS, SCHOOL OF PHYSICS, NANJING UNIVERSITY - CHINA	CLASS M
INSTITUTE OF AUTOMATION, CHINESE ACADEMY OF SCIENCES - CHINA	CLASS M
INSTITUTE OF ENERGY RESEARCH OF JIANGXI ACADEMY OF SCIENCES - CHINA	CLASS V
INTELLIGENT PRECISION MICRO-SYSTEMS LIMITED - HONG KONG	CLASS Q
ISD MECHANICAL ENGINEERING CO., LTD. - CHINESE TAIPEI	CLASS F
ISMAIL ALNAIMI Firas Basim - MALAYSIA	CLASS A
IVANOVO STATE POWER UNIVERSITY - RUSSIA	CLASS A CLASS V
JAHANTIGH Masoud, RAHMANI Reza, GHAFOURI MOGHADDAM Mohammad Hossein, MOUSAVI Seyed Mohsen - IRAN	CLASS F
JAM HOM CO., LTD. - CHINESE TAIPEI	CLASS I
JDC ELECTRONIC SA - SWITZERLAND	CLASS A
JIANMAO BIOTECH CO., LTD. - CHINESE TAIPEI	CLASS K CLASS Q
JIUJIANG JUNIOR MIDDLE SCHOOL - CHINA	CLASS C
JOHARJI Lana, ALSHARIF Aljohara, ALAMOUDI Haneen - SAUDI ARABIA	CLASS M
JSC NIIAS subsidiary of JSC RZD - RUSSIA	CLASS A CLASS F CLASS P
JUNE.F Co., Ltd. - SOUTH KOREA	CLASS S
JUNG Dae Kwon - SOUTH KOREA	CLASS Q
JUNGLEMONSTER - SOUTH KOREA	CLASS C
JUWENLEE COSMETICS TECHNOLOGY CENTER, LUO LIH-FEN - CHINA	CLASS Q

JUWENLEE COSMETICS TECHNOLOGY CENTER, LUO LIH-FEN GROUP - CHINESE TAIPEI	CLASS Q
KANG Mi Hwa - SOUTH KOREA	CLASS R
KANG Seong Jin - SOUTH KOREA	CLASS R
KAOTHANTHONG Natsuda - THAILAND	CLASS M
KETCHAM Mahasak - THAILAND	CLASS C
KETCHAM Mahasak - THAILAND	CLASS C
KHAMIS Abdulrahman Saleh - QATAR	CLASS M
KHIYARI Ezzitouni - SWITZERLAND	CLASS V
KHOJA Ezdehar, ALHARBI Leena, ALMASRY Rinad, ALQAHTANI Sarah - SAUDI ARABIA	CLASS J
KHOKHLOV Iurii, KHOKHLOV Aleksandr - RUSSIA	CLASS Q
KHORI Vahid, AMIRIANI Taghi, GHANDIAN ZANJAN Maziar, GHARGHI Maryam, TAJALDINI Mahboubeh, CHANGIZI Shima - IRAN	CLASS M
KIELCE UNIVERSITY OF TECHNOLOGY - POLAND	CLASS A CLASS D
KIM Danha - SOUTH KOREA	CLASS H
KIM Do Hoon - SOUTH KOREA	CLASS A
KIM Song Yi - SOUTH KOREA	CLASS F
KIM Sung Ryong - SOUTH KOREA	CLASS C
KLINHOM Tunchanok, TANGKOCHAREON Thana - THAILAND	CLASS C
KOLN 3D TECHNOLOGY (MEDICAL) LIMITED - HONG KONG	CLASS M
KOREA AVIATION LIGHT CO., LTD. - SOUTH KOREA	CLASS P
KOREA EAST-WEST POWER - SOUTH KOREA	CLASS V
KOREA ENVIRONMENT CORPORATION - SOUTH KOREA	CLASS A
KUANG JEN CATHOLIC HIGH SCHOOL - CHINESE TAIPEI	CLASS P
LAM Sunny - HONG KONG	CLASS K
LECHIFFLART INNOVATION / CPI GLOBAL - FRANCE	CLASS F
LEE Hyeonjeong - SOUTH KOREA	CLASS V
LEE Jongho - SOUTH KOREA	CLASS C

LEE Ki Hyuk - SOUTH KOREA	CLASS V
LEE Young Geun - SOUTH KOREA	CLASS E
LEE Young Seo - SOUTH KOREA	CLASS V
LIANGYUAN CHEN, YARU YANG, MINGYAO LIU - CHINA	CLASS M
LINYI UNIVERSITY - CHINA	CLASS V
LIVZON GROUP SICHUAN GUANGDA PHARMACEUTICAL CO.,LTD - CHINA	CLASS M
LIZON GROUP LIMIN PHARMACEUTICAL FACTORY - CHINA	CLASS M
LLEWELLYN AND PARTNERS COMPANY LIMITED - HONG KONG	CLASS D
LOGISTICS AND SUPPLY CHAIN MULTITECH R&D CENTRE (LSCM) - HONG KONG	CLASS C CLASS P
LOU HAU HIGH SCHOOL, MACAU - CHINA	CLASS A
LUBLIN UNIVERSITY OF TECHNOLOGY - POLAND	CLASS C
LUBLIN UNIVERSITY OF TECHNOLOGY FACULTY OF MECHANICAL ENGINEERING DEPARTMENT OF TECHNOLOGY AND POLYMER PROCESSING - POLAND	CLASS A
LYSIN Serhii - UKRAINE	CLASS Q
MAKERS VIEW CO.,LTD - SOUTH KOREA	CLASS M
MANOSNGIAM Ronnakorn - THAILAND	CLASS C
MASRI Mohamad Najmi - MALAYSIA	CLASS A
MAZAROM IMPEX SRL - ROMANIA	CLASS P
MFAM CO., LTD. - SOUTH KOREA	CLASS A
MILITARY UNIVERSITY OF AVIATION IN DEBLIN, LUBLIN UNIVERSITY OF TECHNOLOGY - POLAND	CLASS P
MING CHYI BIOTECHNOLOGY LTD. (MCB) - CHINESE TAIPEI	CLASS Q
MING CHYI BIOTECHNOLOGY LTD. (MCB), HANSFORD BIOTECH CO., LTD. - CHINESE TAIPEI	CLASS Q
MIRKOHI Mohammadamin, MIRKOHI Dorsa - IRAN	CLASS C
MOHAMAD Mardawani - MALAYSIA	CLASS K
MONNIN Hubert - SWITZERLAND	CLASS V
MUANGSIN Nongnuj - THAILAND	CLASS Q
MUJAHED Mawadah Abdul Latif - SAUDI ARABIA	CLASS V

NAJIGIVI Shiva, MIRMOTALLEBI Seyedahmadreza - IRAN	CLASS M
NANJING AGRICULTURAL UNIVERSITY - CHINA	CLASS K
NANJING AUDIT UNIVERSITY - CHINA	CLASS M
NANJING JUNLI TECHNOLOGY CO., LTD - CHINA	CLASS D
NANJING UNIVERSITY - CHINA	CLASS A CLASS C CLASS M CLASS P CLASS V
NANJING UNIVERSITY OF AERONAUTICS AND ASTRONAUTICS - CHINA	CLASS P
NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG	CLASS D CLASS E CLASS L CLASS Q CLASS R CLASS T CLASS U
NARIN Burin - THAILAND	CLASS O
NATIONAL YUNLIN UNIVERSITY OF SCIENCE & TECHNOLOGY - CHINESE TAIPEI	CLASS A CLASS V
NIROUMAND Vahid, ABBASZADEH Hamzeh - IRAN	CLASS C
NORTH CHINA ELECTRIC POWER UNIVERSITY - CHINA	CLASS C
NORTH UNIVERSITY OF CHINA - CHINA	CLASS D
NORTH UNIVERSITY OF CHINA- QIULIN TAN - CHINA	CLASS C
NORTHEASTERN UNIVERSITY - CHINA	CLASS C
PANAMPAN Sakchai - THAILAND	CLASS A
PARK Chan Wook - SOUTH KOREA	CLASS H
PARK Il-su - SOUTH KOREA	CLASS Q
PARK Jung won - SOUTH KOREA	CLASS I
PARK Jungwon, JANG Yoomin - SOUTH KOREA	CLASS E
PARK KiHoon - SOUTH KOREA	CLASS C
PHOTHA Watchapol - THAILAND	CLASS C
PHUTTHONGLANG Sarayut - THAILAND	CLASS A

PIMPILA Kiatbundit - THAILAND	CLASS A
PIPATPANUKUL Kamol - THAILAND	CLASS K
PIRARAT Nopadon - THAILAND	CLASS Q
PIROMPUGD Worahaest - THAILAND	CLASS E
PISEK Poonsak, SURAKULPAPA Palakorn - THAILAND	CLASS M
POLITECHNIKA SWIETOKRZYSKA - POLAND	CLASS A
PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ - PERU	CLASS M CLASS Q
POULADI Aii - IRAN	CLASS M
PRECISION ROBOTICS LIMITED - HONG KONG	CLASS M
Professor Dr. ATHAKORN KENGPOL - THAILAND	CLASS Q
PROFESSOR JÓZEF KOSACKI'S MILITARY INSTITUTE OF ENGINEER TECHNOLOGY - POLAND	CLASS V
QINGDAO HAIER AIR-CONDITIONER GEN. CORP., LTD. - CHINA	CLASS C CLASS E CLASS V
QINGDAO HAIER REFRIGERATOR CO.,LTD - CHINA	CLASS A CLASS I
QUEEN ELIZABETH HOSPITAL - HONG KONG	CLASS M
RABET GANNADI Amirhossein, AZIZIPESTEH BAGLO Hamid Reza - IRAN	CLASS D
RESEARCH INSTITUTE OF CREATIVE EDUCATION - VIETNAM	CLASS V
RODPIPAT Sarinya, SARAYUTHPITAK Jintana and EKGASIT Sanong - THAILAND	CLASS O
ROMERA ORTIZ Juan - SPAIN	CLASS V
ROSHANI TAKHTAMESHLOU Soheila - IRAN	CLASS M
ROYNARIN Wirachai - THAILAND	CLASS V
S.K.H. LI PING SECONDARY SCHOOL - HONG KONG	CLASS M
SAIZ Carlos - FRANCE	CLASS K
SAJOMSANG Warayuth - THAILAND	CLASS V
SAKKAYAWONG Supanat - THAILAND	CLASS Q
SALLEH Hanim Binti - MALAYSIA	CLASS V

SAMARA UNIVERSITY - RUSSIA	CLASS A
SAMKARI Abdulwahab Adel - SAUDI ARABIA	CLASS E
SANGEORZAN Mircea - ROMANIA	CLASS V
SARAYUTHPITAK Jintana, RODPIPAT Sarinya and EKGASIT Sanong - THAILAND	CLASS O
SCHOOL OF CHEMICAL ENGINEERING AND TECHNOLOGY, SUN YAT-SEN UNIVERSITY - CHINA	CLASS D
SCHOOL OF ELECTRICAL AND INFORMATION ENGINEERING, TIANJIN UNIVERSITY - CHINA	CLASS C
SCHOOL OF INFORMATION ENGINEERING, NANJING AUDIT UNIVERSITY - CHINA	CLASS A
SEMYARI ROUDBARI Milad - IRAN	CLASS D
SEO Miyoung and KHIAOMANG Kriangsak - THAILAND	CLASS J
SEUNGYONG Kim - SOUTH KOREA	CLASS C
SHANGHAI JIAO TONG UNIVERSITY - CHINA	CLASS C CLASS P
SHANGHAI RIGHT ON INTERNET CO., LTD - CHINESE TAIPEI	CLASS Q
SHANGHAI TRADITIONAL CHINESE MEDICINE CO.,LTD. - CHINA	CLASS Q
SHANGHAI YUKE ENVIRONMENTAL ENGINEERING CO.,LTD - CHINA	CLASS V
SHECO - SOUTH KOREA	CLASS V
SHEN ZHEN FACE SHINE LTD. - CHINA	CLASS D
SHENYANG UNIVERSITY OF CHEMICAL TECHNOLOGY - CHINA	CLASS V
SHENZHEN CASTLE SECURITY TECH.CO.,LTD. - CHINA	CLASS J
SHENZHEN FICUS TECHNOLOGY HOLDINGS LIMITED - HONG KONG	CLASS T
SHEYDA KHANGHESHLAGHI Babak, NEMATI Giv Banafsheh - IRAN	CLASS P
SHIRLEY WANG - CHINA	CLASS E
SHUN TAK FRATERNAL ASSOCIATION YUNG YAU COLLEGE - HONG KONG	CLASS K
SICHUAN ENERGY INTERNET RESEARCH INSTITUTE, TSINGHUA UNIVERSITY - CHINA	CLASS C CLASS F CLASS V
SICHUAN RONGCHUANG NEW ENERGY POWER SYSTEM CO., LTD - CHINA	CLASS V
SIDHU Manjit Singh - MALAYSIA	CLASS C

SINO INNOVATION LABORATORY LIMITED - HONG KONG	CLASS L CLASS V
SKOROBOGATOV Stanislav Yuriyovych - UKRAINE	CLASS A
SMANMOO Srung, SANGSOOKWOW Chayada, KHAYAK Phiyada, THONGDEEWONG Nathanan - THAILAND	CLASS Q
SON Il Kwang - SOUTH KOREA	CLASS Q
SOONTORNPIPIT Pichitpong - THAILAND	CLASS C CLASS F CLASS Q
SOUTHEAST UNIVERSITY - CHINA	CLASS A CLASS C CLASS D CLASS N CLASS P CLASS V
SOUTHEAST UNIVERSITY-XU QINGSHAN - CHINA	CLASS F
SOUTHWEST JIAOTONG UNIVERSITY - CHINA	CLASS P
STATE GRID CORPORATION OF CHINA - CHINA	CLASS C
SUDTHONGKHONG Chudanat - THAILAND	CLASS C
SUN YAT-SEN UNIVERSITY - CHINA	CLASS M
SUTTANON Plaiwan - THAILAND	CLASS M
SUZHOU HONBASE BIO-ENVIRONMENT AL TECHNOLOGY CO., LTD - CHINA	CLASS V
TAE CHANG ICE.CO.LTD - SOUTH KOREA	CLASS I
TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI	CLASS C CLASS D CLASS E CLASS F CLASS J CLASS P CLASS R
TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI	CLASS A CLASS C CLASS D CLASS I CLASS N CLASS Q

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI	CLASS R
TAIYUAN UNIVERSITY OF TECHNOLOGY - CHINA	CLASS A
TANG Long Hin - HONG KONG	CLASS N
TANGTRAKULWANICH Boonsin - THAILAND	CLASS M
TCI CO., LTD. - CHINESE TAIPEI	CLASS Q
THANGARAJU Savithry K. - MALAYSIA	CLASS V
THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG	CLASS A CLASS C CLASS M CLASS V
THE EDUCATION UNIVERSITY OF HONG KONG - HONG KONG	CLASS O CLASS S CLASS V
THE HONG KONG POLYTECHNIC UNIVERSITY - HONG KONG	CLASS D CLASS M CLASS P CLASS Q CLASS V
THE HONG KONG RESEARCH INSTITUTE OF TEXTILES AND APPAREL - HONG KONG	CLASS L CLASS V
THE UNIVERSITY OF HONG KONG - HONG KONG	CLASS A CLASS M CLASS Q CLASS V
THINK BLANK.LTD - SOUTH KOREA	CLASS Q
THONGCHU Amnad, TANGTHANCHAIKUN Nirun - THAILAND	CLASS A
TIANJIN UNIVERSITY - CHINA	CLASS D
TIN'S SECRET - CHINESE TAIPEI	CLASS Q
TIONG Sieh Kiong - MALAYSIA	CLASS C
TMAX STRATEGY & MARKETING CO. - CHINESE TAIPEI	CLASS B CLASS L
TONGIL POCKET CASE Co., Ltd - SOUTH KOREA	CLASS Q
TONGJI UNIVERSITY - CHINA	CLASS D CLASS V

TSINGHUA UNIVERSITY - CHINA	CLASS A CLASS C CLASS D CLASS K CLASS P CLASS V
TSINGHUA UNIVERSITY- ERSHUN DU - CHINA	CLASS V
TSINGHUA UNIVERSITY- JINGBO TAN - CHINA	CLASS C
TSINGHUA UNIVERSITY- YUAN YUAN - CHINA	CLASS M
TSINGHUA UNIVERSITY- ZHENG XIAOPING - CHINA	CLASS C
TSINGHUA UNIVERSITY-WEI HU - CHINA	CLASS V
TSINGHUA UNIVERSITY-WU YUXIN - CHINA	CLASS V
TUBGLAM Supawadee - THAILAND	CLASS M
TUNG HING AUTOMATION INVESTMENT LTD - HONG KONG	CLASS B
TUNTISITTHIKORN Oranuch - THAILAND	CLASS C
UNIVERSITY OF SCIENCE AND TECHNOLOGY BEIJING - CHINA	CLASS V
UNIVERSITY OF TABUK - SAUDI ARABIA	CLASS C
UTP UNIVERSITY OF SCIENCE AND TECHNOLOGY - POLAND	CLASS C
VANGNAI Alisa - THAILAND	CLASS Q
VILLALBA HERNANDEZ Manuel - SPAIN	CLASS V
VOLOSHCHUK Mykola - UKRAINE	CLASS A
WANG JIALUO, ZHUANG ZIXUAN, ZANG RENJIE - CHINA	CLASS M
WANTHONGCHAROEN Suwanan - THAILAND	CLASS V
WIRIYACHAIPORN Natpapas - THAILAND	CLASS M
WITHUS&EARTH CO., LTD. - SOUTH KOREA	CLASS R
WONG Leong Sing - MALAYSIA	CLASS V
WROCLAW UNIVERSITY OF ENVIRONMENTAL AND LIFE SCIENCES - POLAND	CLASS Q
WU Siqi - CHINA	CLASS G
XI'AN JIAOTONG UNIVERSITY - CHINA	CLASS C
YANBIN HUA, XUEJUN CHEN, LICHUN QUAN - CHINA	CLASS K

YANG XIUQI, QIN MINGXI, WANG PUYUAN - CHINA	CLASS K
YANGYUEN Suphan - THAILAND	CLASS A
YIDA LI, DINGHENG CAI, YIDE FAN - CHINA	CLASS E
YOO Cheolyong - SOUTH KOREA	CLASS C
YOON Woo-sub - SOUTH KOREA	CLASS A
YOU Wan Gi - SOUTH KOREA	CLASS I
YU ZEKAI, LIU JIAYI, LIU HONGJUN - CHINA	CLASS F
YUANZHUO ZENG - CHINA	CLASS A
ZHEJIANG UNIVERSITY- HONG ZHANG - CHINA	CLASS M
ZHEJIANG UNIVERSITY- JIABIN LIU - CHINA	CLASS V
ZHEJIANG UNIVERSITY- LIJIAN WU - CHINA	CLASS C
ZHEJIANG UNIVERSITY-YOUTONG FANG - CHINA	CLASS V
ZHENG WANG, JINYAO LI, WENMIAO YANG, HONGXUAN LI, KUNXIONG WU - CHINA	CLASS D

The information in this online catalogue is based on data received before 9 March 2021. Catalogue entries remain the sole responsibility of the participant. The show management has compiled this catalogue with care, but declines all responsibility for any possible errors or omissions.

LIST OF PARTICIPANTS BY CLASS

CLASS A

MECHANICS - ENGINES - MACHINERY - TOOLS - INDUSTRIAL PROCESSES - METALLURGY

AL-SAYED HASHIM TAREK HISHAM - EGYPT

Phone +201010681678 • tareknooralislam@gmail.com • <https://o6u.edu.eg>

Convert Internal Combustion Engine to Electric Vehicle with Drive Assistance System

As part of the quest of the state and the world to use renewable energy rather than the fossil fuel to minimize the environmental pollution rates that cause negative effects on public health. One of its tools is the use of electric cars instead of gasoline cars. The idea came as follows, This project is attempting to recycle old vehicles that are considered to be expired to many countries into electric vehicles.

ATTIA TAMER - EGYPT

Phone +201065006625 • tamer11@vt.edu

Agile Reconfigurable Robot

A reconfigurable robot that has the capabilities to work in rough terrain for COVID-19 decontamination and agricultural applications. The robot is equipped with spraying and perception systems for spraying, photographing and can be used on disaster situations. The robot's max. speed is 35 km/h and equipped with LIDAR, Stereo camera, IMU, GPS.

BOKYONG CO., LTD - SOUTH KOREA

Structure of bike frame

The present invention relates to the bicycle frame structure, more particularly, to the bicycle frame structure of the new concept which optionally controls each distance of the rear wheel and sheet about the front-wheel.

CHENGDU AIRCRAFT INDUSTRIAL (GROUP) CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Handheld Defect-detection Device

The system mainly consists three parts: image acquisition system, transmission line and software. The system firstly take image of product surface using image acquisition system.

CHOI TAE KWANG - SOUTH KOREA

Magnetic Substance Holding Device

KTM original work-holding technology uses very little energy and it does not require continuous power consumption, it also has no issues with overheating.

DALIAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 13164527256 • sxg@dlut.edu.cn • www.dlut.edu.cn

A shape-performance integrated digital twin method for heavy equipment and key components

It is an enabling technology named shape-performance integrated digital twin (SPI-DT) for the structural analysis and prediction of complex heavy equipment. The SPI-DT can provide the real-time prediction of structural performance, which is helpful in the structural safety monitoring, reliability assessment, predictive maintenance, and design optimization of various heavy equipment.

EASTERNSKY CORPORATION - SOUTH KOREA

Drone attachable mission apparatus and system thereof

This technology is about smart life saving kit attachable to drone» includes : 1. Connecting structure into drone 2. Communication system to control the unit 3. Monitoring system with various sensors of GPS, accelerator, and etc. to check the survivor's situation and to save them securely.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Intelligent Warehouse Robot MR-BY-W500-YZ

The motor system can achieve high efficiency, by saliency ratio of rotor structure and high-precise extended flux observation control realizing the RE-free for industrial motor, and its efficiency is equal to or even exceed the RE permanent magnet motor.

High efficiency air-cooled permanent magnetic synchronous inverter screw chiller with variable capacity compressor

It integrated with washing, drying and care functions. It uses heat pump drying technology to achieve fast and efficient drying. Compared with washer dryer, it can save more than 30% of time and more than 60% of power.

GUANGDONG UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Ultra precision rigid-flexible coupling motion stage

Integrated long-stroke linear stage and nano-precision compliant mechanism, an economic ultra-precision stage is invented, is also a novel way for friction compensation.

HAIER INSTITUTE OF INDUSTRIAL INTELLIGENCE - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Power System Protection Technology to Prevent Secondary Disaster

The first Intelligent +5G Mass Customization Test And Verification Platform» built by Haier Institute of Industrial Intelligence takes mass customization mode as the core, carries out integration test on key generic technologies of intelligent manufacturing, and carries out production demonstration and technical verification functions of the whole process, the whole value chain and the whole product life cycle.

HEBEI UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Electric Vehicle Automatic Transmission Module System

This project has developed a series of automatic transmission platforms for powertrain drive system of pure electric passenger vehicles.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Hybrid Laser Energy Deposition and Milling Technology

Hybrid Laser Energy Deposition and Milling Technology (HLEDMT) is a cutting-edge technology to produce metal parts by alternating the laser energy deposition process and the milling process, which combines the advantages of additive and subtractive manufacturing. Since the deposition and sintering metal powder is done simultaneously in HLEDMT, the production time can be reduced by at least 40%, especially for large metal parts. Moreover, the powder utilisation rate of HLEDT during processing is at least 40% higher than Direct Metal Laser Sintering (DMLS) and the powder recycling effort for HLEDMT is much lower when compared to DMLS.

Electrically-Assisted Free Forming (EAFF) Technology for Customisation of Sheet Metal Parts

EAFF Technology is a direct manufacturing technology for customisation of sheet metal parts. Unlike conventional metal stamping process, EAFF technology does not require any additional process before production, such as making mould. The initial cost of sheet metal stamping can hence be eliminated which facilitates the production of customised sheet metal parts. Moreover, EAFF can produce parts with complex geometry, including undercut features, with dual robot arms.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 15623228959 • 1309432855@qq.com • mat.hust.edu.cn

Integrated Manufacturing Method for Large-scale and Complex SiC Ceramic Matrix Composite Components

A combination method of additive manufacturing and reactive melt infiltration can integrally fabricate large-scale and complex SiC ceramic matrix composite components, such as space mirror blank, with the size of nearly 1.7 m, flexural strength >220 MPa, elastic modulus >280 GPa and relative density >99%.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 15927166126 • zhangpanhust@163.com

Online automatic 3D measurement equipment for high-temperature die forgings

Techniques in developing an online automatic 3D measurement equipment for high-temperature die forgings. For the first time, the online 3D full inspection of hot die forgings at 1100°C has been realized. By providing important basic data for forging process optimization, the accuracy of forming dimensions and the intelligent level of production line have been significantly improved.

ISMAIL ALNAIMI FIRAS BASIM - MALAYSIA

Phone +60125548451 • Firas@uniten.edu.my • www.uniten.edu.my

An Innovative Intelligent Multi-Functional Retractable Pipeline Inspection Gauge

An innovative approach for the Pipeline Inspection Gauge (PIG) which can inspect oil pipelines from 10" up to 25" with a simple change of shirts using the latest technologies such as Electro Magnetic Acoustic Transducer (EMAT) for Ultimate crack and corrosion detection. The working process of the prototype is divided into three simple sections; implementation, inspection, over-viewing.

IVANOVO STATE POWER UNIVERSITY - RUSSIA

Phone +7 910 667 47 27 • golov@ispu.ru • www.ispu.ru

Method of producing magnetic fluid

It can be used for producing high-vacuum magnetic fluids with low friction moment and low viscosity dependence on temperature based on polymethylsiloxane liquids.

JDC ELECTRONIC SA - SWITZERLAND

Phone +41 79 254 93 05 • a.rey@jdc.ch • www.jdc.ch

Instrument for measuring fluids

The invention relates to an instrument for measuring fluids (anemometer) that can be used under extreme conditions. Thanks to its design, the sensor allows measurements over a very wide range of speeds, from 0.5 m/s to 100 m/s. It can be used in fixed or mobile applications (boat masts) because it is insensitive to movement.

JSC NIIAS SUBSIDIARY OF JSC RZD - RUSSIA

Phone +7 985 232 97 03 • info@vniias.ru • www.vniias.ru

System for technical and commercial monitoring of train condition

It relates to the field machine building.

KIELCE UNIVERSITY OF TECHNOLOGY - POLAND

Phone +48 667 663 505 • gpiotrowicz@fit.krasnik.pl

Pressure mechanism for axial load of rolling bearings, especially in vibration measuring devices

Pressure mechanism of axial load of rolling bearings ensures measurement of vibration level of rolling bearings without interference caused by external factors.

KIM DO HOON - SOUTH KOREA

Semi Dual-Axis SOLAR TRACKER with one motor driving

Compared to the fixed type, its generating efficiency is higher than 25-30%. Efficiency guarantees profit. If fossil fuel prices go up in the future, electricity prices can increase a lot.

KOREA ENVIRONMENT CORPORATION - SOUTH KOREA

Pipe Route Gradient Measuring Mobile Robot

Although the importance of sewage pipe investigation increases, precise measurement and inspection are not easy in small sewer pipes.

LOU HAU HIGH SCHOOL, MACAU - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

SinPre TACI-01 Intelligent Targeting Corrosion Inhibitor

The safe operation of the electric motor is essential. This invention satisfying the market's need for a high performance, low-cost, easy-to-operate fault detection device.

LUBLIN UNIVERSITY OF TECHNOLOGY FACULTY OF MECHANICAL ENGINEERING DEPARTMENT OF TECHNOLOGY AND POLYMER PROCESSING - POLAND

k.glogowska@pollub.pl

Mould clamp for rotational moulding.

The object of the patent is a mould clamp for rotational moulding of polymer materials. The purpose of the invention is to extend the use of the U-shaped clamps to various types of moulds. Assembling the mould in the clamp involves loosening the connection built based on the third arm and the fourth arm, the bearings and the turnbuckle which can be unscrewed. Then the mould is placed on the mandrels, for mounting the mould and the third arm and the fourth arm are tightened by tightening the turnbuckle.

MASRI MOHAMAD NAJMI - MALAYSIA

Phone +60129763630 • najmi.m@umk.edu.my • <http://fbkt.umk.edu.my>

NSP: Invention Design of Sublimation Printing Machine

This innovative design of sublimation machine is affordable in terms of cost compared to commercially available machines and flexible, which can be used on various paper sizes. This invention's novelty is based on its roller paper spindle, which is designed to solve the problem of paper feeder and the addition of infrared rays for the drying process. This invention might boost production and save time, raw materials, and less manpower.

MFAM CO., LTD. - SOUTH KOREA

Coating composition for solar panel

The coating composition of the present invention can be applied to a solar panel to prevent panel contamination due to various contaminants, thereby obtaining an effect of increasing power production by about 13% or more, and has excellent durability (lasting 1 year).

NANJING UNIVERSITY - CHINA

Phone +86 13951604941 • lixz@nju.edu.cn • www.nju.edu.cn

Precise measurement method and instrument for transmissivity of complex geological structure

Precise measurement method and instrument for transmissivity of complex geological structure. The transmissivity of complex geological structure (m ~ μ m-level) can be obtained by specific packer test with accurate positioning, strong sealing, high precision (< 1kPa) and wide range (> 10-3 or <10-20m2).

NATIONAL YUNLIN UNIVERSITY OF SCIENCE & TECHNOLOGY - CHINESE TAIPEI

Phone +886 921 165 202 • nienyh@yuntech.edu.tw

Fabrication and characterization of silica/nylon66/pmma nanofibrous film as separator of lithium-ion battery

We expect to develop a new separator with high mechanical strength for lithium-ion battery. The innovative separator made of polyamide (Nylon), poly (methyl methacrylate) (PMMA), silica (SiO₂) is prepared by hot pressing after electrospinning. The results show that the porosity of electrospun nanofibrous membrane is decreased and the mechanical strength of the one is increased, when pressure is increased in hot-pressing process. It is found that the addition of SiO₂ nanoparticle can enhance the thermal stability and mechanical properties of the electrospun separator, but excessive amount of SiO₂ leads to the decrease of mechanical properties. The properties of the best separator are 29.1 MPa in tensile strength, 91.4% in porosity, and 417.4% in electrolyte uptake rate.

NATIONAL YUNLIN UNIVERSITY OF SCIENCE & TECHNOLOGY - CHINESE TAIPEI

Phone +886 978 172 973 • M10911033@yuntech.edu.tw

A Modular Multi-Speed Inner Transmission for Medical Aids

A modular design of the hub transmission .It can be directly applied to the existing wheelchairs. It does not affect the original storage function of the wheelchair. The use of lever-propelled linkage as a driving assistant tool can effectively solve the chronic physical injuries of the user's wrist. The hub transmission has four gear stages, which can provide suitable gear stages according to different conditions while it used. The transmission is hidden in the hub shell, it is durable and uneasy to damage.

PANAMPAN SAKCHAI - THAILAND

Phone +6696 365 9451 • watcharaphon.tha@pea.co.th • www.pea.co.th

The Automatic Steel Wire Straightening and Cutting Machine

The Automatic Steel Wire Straightening and Cutting Machine is the equipment for produce the stirrups. The equipment's function is stretch out the steel wire coil, and cut to length's order. In addition, there are safety, high efficiency and uncomplicated to use, we can reduce the work time and expenditure. We can increase the Concrete Electric Pole's productivity as much as we need.

PHUTTHONGLANG SARAYUT - THAILAND

Phone +6682 532 9793 • sarayut.put@pea.co.th • www.pea.co.th

Multipurpose Gear Driven Set

Multipurpose Gear Driven Set has invented for high compression tools, which use for compressive, cutting and puncture. It transfers a torque 200 - 230 Nm. of Cordless Impact Wrench is equivalent to hydraulic pressure 6, 000 -17, 000 psi. more convenient to operate, easier to maintain and inexpensive.

PIMPILA KIATBUNDIT - THAILAND

Phone +668 735 5855 • p_kiatbundit@hotmail.com • www.pea.co.th

Tools for Changing High-voltage Insulators with Curve (TCHIC)

Tools for Changing High-voltage Insulators with Curve (TCHIC) is designed and developed for replacement high-voltage straight shaft insulator that is installed to receive the electric wires at the curve position with high electric stress and cause a large area of power failure. The innovation can push the wires out of the insulators and also adjust the height as needed, making the insulators easily and safely used.

POLITECHNIKA SWIETOKRZYSKA - POLAND

pszmidt@tu.kielce.pl

Missile Engine exhaust nozzle

The invention relates to a missile control system using hybrid thrust vector control. The solution combines a pivoting nozzle and cooperating movable jet vanes.

QINGDAO HAIER REFRIGERATOR CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A parallel flow constant-temperature fresh-keeping technology based on bottom refrigeration system

Haier pioneered the double-axis hinge technology in the world to realize refrigerator embedded in the cabinet without gap, which perfectly adapts to different home styles, solves the needs of ordinary refrigerators placed against the wall or embedded in the cabinet, and integrates the kitchen and living, creates an all-round aesthetic kitchen.

SAMARA UNIVERSITY - RUSSIA

Phone +7 846 3345 18 45 • vgl@ssau.ru • <https://ssau.ru/science/ni/nip/nil/nil41>

Universal power drives made of material with shape memory and deforming devices based on them

The device is intended for use in the field of stamping works and testing equipment for the evaluation of mechanical and operational properties of metal. The task of designing a composite power drive made of a material with shape memory is the most important in practical terms, since it is directly related to technological processes aimed at creating a specific design of technological equipment and tools.

SCHOOL OF INFORMATION ENGINEERING, NANJING AUDIT UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Pre-fabricated intelligent construction robot

Based on AI technology and «standardized design, factory manufacturing, intelligent construction» mode, a pre-fabricated intelligent robot was developed for safer and more effective construction method.

SKOROBOGATOV STANISLAV YURIYOVYCH - UKRAINE

Phone +38 098 249 00 69 • man@man.gov.ua • <http://man.gov.ua>

Usage of the Peltier element to recover the electric energy in the hybrid

A way to use alternative energy sources based on the Peltier element. It can be used to gather energy from the heating of the brake calipers and the air turbine hose. Energy will be collected in supercapacitors and transferred to the battery or used in a climate control system.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 13951804055 • a.g.song@seu.edu.cn • <https://ins.seu.edu.cn/2019/0606/c26909a303813/page.htm>

Desktop 3-DOF Upper Limb Rehabilitation System»

A three degrees of freedom end-effector upper limb rehabilitation robot. In the invention, an innovative structure is designed for the high precision and easy motion control. There are four modes of upper limb rehabilitation training with multi-channel interaction.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 13451854476 • LYB@seu.edu.cn • me.seu.edu.cn/amc

Digital reconstruction technology for structural load field based on measurement and simulation

A digital reconstruction technology for complex structural load fields was invented. Based on the measured dynamic response and high fidelity dynamic model, the static/dynamic load of the structure is identified. It could be useful for the design and analysis of structures, such as ships, vehicles, and buildings.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

Phone +886 986 947 890 • ru5020169@gmail.com

Photon Resonance Rhythm Chair

It provides passive exercise function for human body especially for vegetative, paralysis, or office workers hardly to do exercise. This invention is a powerful tool to maintain body figure and to promote metabolism. According to SCI papers, horizontal rhythm resonance effect, is confirmed that the promotion of nitric oxide ; cradle shaking relaxes and maintain the health of the cells throughout the whole body. There are 2 features : Five sets of rotating resonators, focusing on 9.34um wavelength correspond with 37 degree Celsius from human body. Nine segmented horizontal rhythm. Three rhythm working status, sitting position ; no gravity position ; lying position.

TAIYUAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Rubber belt retracting and deploying device for belt conveyor

The project aims to solve the problems of High labor intensity, time-consuming, laborious, and prone to major accidents in the traditional belt clamping, loosening, cutting, retracting, rewinding and deploying processes.

THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3943 3458 • cathywong@cuhk.edu.hk • christineleung@cuhk.edu.hk

<http://cuhk.edu.hk>

Self-powered smart watch and wristband enabled by embedded generator

The limited battery life of smart watches and wristbands remains a big issue. We design an embedded and compact electromagnetic generator so as to enable them to be self-powered.

THE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 2299 0123 • evatam@tto.hku.hk • www.tto.hku.hk

A soft underwater manipulation system

The invention is a dexterous soft underwater manipulation system for general underwater work purposes. It has four innovative features that make it stand out over existing underwater manipulators. The features include : a) zero weight-in-water ; b) ambient water pressure independence ; c) waterproofing sensors embedded ; d) cost-effective.

Light-controlled contamination-free fluidic processor

The contamination-free fluidic processor functions as a "magic" wetting-proof hand to loss-freely navigate, fuse, pinch, and cleave fluids of various volumes and properties on demand using a single beam of light, enabling soft robots and expanding the limit of maximum concentration of deliverable protein by 4000-fold.

THE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 2299 0123 • evatam@tto.hku.hk • www.tto.hku.hk

Ultra-strong and ductile steel with low price and easy manufacturing

This invention is a newly developed ultra-strong and ductile steel with low price and easy manufacturing. The present steel exhibits 1800 MPa yield strength, 12% uniform elongation and 16% total elongation. The cost of the raw material for manufacturing this steel is less than one dollar per kilogram.

THONGCHU AMNAD, TANGTHANCHAIKUN NIRUN - THAILAND

Phone +6664 495 3599 • amnad.thong999@gmail.com • www.me.a.or.th

Smart pole cutting machine

Smart pole cutting machine is a tool that can be used to replace the human labor in cutting electric poles and can also cut all types and all level of pole (base or middle).

TSINGHUA UNIVERSITY - CHINA

Phone +86 1850053899 • pinjia.zhang@mail.tsinghua.edu.cn • <http://www.eea.tsinghua.edu.cn/cn/faculties/pjzhang>

System and Method on High Sensitivity Leakage Current Monitoring for Electrical Assets

The high sensitivity leakage current sensor is capable of measuring the milli-ampere-level leakage current flowing through the insulation of electric assets during their normal operation, in presents of huge load current up to thousands of amperes. With its advanced magnetic design, the invented sensor is capable of measuring the leakage current in extremely high sensitivity and high signal-to-ratio.

VOLOSHCHUK MYKOLA - UKRAINE

Phone +38 050 312 0343 • m.voloshchuk@bms.in.ua • www.linkedin.com/in/mykola-voloshchuk-354a9a1b7

Steam engine with highly efficient reciprocating to rotary motion

Steam engine with highly efficient reciprocating to rotary motion

YANGYUEN SUPHAN - THAILAND

Phone +6680 412 5684 • yangyuen.sp@gmail.com • <http://inter.msu.ac.th>

Speed up machine for soaking and germinating of paddy in germinate Hang rice production

A process to accelerate the infusion and germination of paddy for the production of germinate rice. Water is sprayed through the rice in scaled container for a period of 15 to 18 hours, which case the grain to begin to germinate. This is followed by a further 2 to 3 hours without the spraying process. The process reduces the overall time needed for germination from 2 to 3 days to just 24 hours, and decreases water consumption by five times

YOON WOO-SUB - SOUTH KOREA

Barbell disk fro automatic installing in and out dissociating feom barbell bar

Compared to ordinary barbells, this barbell plates are installed vertically and locked directly without clips. Regardless of orders of barbells on the bar, you can adjust weight by just unlocking selected weight of barbells you want and you don't need a locking clip anymore.

YUANZHUO ZENG - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A Cyclone Generator for Simulating the Tornado to Scale

This invention is a cyclone generator that can produce a small cyclone simulating a tornado to scale for the scientific study of the tornado's rotation and trajectory.

CLASS B

CLOCKS AND WATCHES - JEWELLERY - MACHINERY - TOOLS

HONG KONG BAPTIST UNIVERSITY - HONG KONG

Phone +85234118074 • mikeng@hkbu.edu.hk • <https://kto.hkbu.edu.hk/>

Anti-scratch thin film coating on metal surface

Our new patented technology is an anti-scratch thin film coated on metal surface in 3D design. The invention is value-added to the metal based products e.g. watch case & strap as it increases surface's wear resistance without sacrificing their original appearance.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

From Heart to Eyes then on Fingers - Redefine Jewellery with AI and Robotics

From heart to eyes then on fingers redefined jewelry-making process with AI and Robotics technologies for excellent personalised experience. Customer's demand on personalised jewelry is interactively reflected in the design with the master and converted into instructions for manufacturing. The whole making process of customised mass production is visible to customers via App and allow them to fully engage in the product's making process so as to enhance the customer experience. Furthermore, the whole lead-time is extremely shortened from several weeks in traditional way down to within several hours by this novel technology and invention.

TMAX STRATEGY & MARKETING CO. - CHINESE TAIPEI

Phone +886 933 003 436 • tmaxmark@gmail.com

Eyes Yoga Clock

A new design of clock can solve 3C eyes problems. Two minutes per day, do Eyes Yoga easily to solve your 3C eyes Syndrome. Eye Yoga Clock can remind you to do Eyes Yoga day and night. Clock Hand Design let you follow the dot on the hand to do Eye Yoga movement more than 8 kinds of patterns, which can help you to relax Eyes muscles as well as improving Eyes circulation to cure Eyes Fatigue and dry eyes problems. Combining with APP, the built in AI camera which can judge the accuracy of eyes movement, remind customer to do eyes yoga and picture eyes conditions to give further suggestions.

TUNG HING AUTOMATION INVESTMENT LTD - HONG KONG

Phone +852 6776 1908 • roy_l@tunghinghk.com • www.tunghingautomation.com

Smart Pressure Control Polishing Machine (DJ-RAP)

Traditional manual polishing methods cannot guarantee the accuracy and consistency of finished products. DJ-RAP polishing machine tackled the unsolved problem of rapid pressure control during the polishing process, and is able to follow the processing path precisely. The path fits the curves of the part precisely, and the pressure control automatically adjust to minor inconsistencies to create perfectly polished finishing.

CLASS C

COMPUTER SCIENCES - SOFTWARE - ELECTRONICS - ELECTRICITY - METHODS OF COMMUNICATION

ABDULLAH ZIYAD AHMED ABDULMATIN - SAUDI ARABIA

Phone +966506071877 • Ziad.ahmad.1431@gmail.com • www.uqu.edu.sa/studaff/83391

Wonderful gloves

A glove that translates sign language into an audio language that is transmitted through the glove's external speaker.

ABORAYA DALIA REFAT - SAUDI ARABIA

Phone +966555036401 • Ra.dalya@yahoo.com • www.uqu.edu.sa/studaff/83391

Medical self-service machine

A device for major hospital pharmacies to dispense a group of medicines especially for the (Chronic disease patient that must be dispersed regularly - OTC). The device works with barcode technology. It reads the required medications and calculate doses with high accuracy to avoid overdosing or the mistake that occur in the dispensing medication. Print label for each medicine (name of patient - dose - rout of administration and duration).

AIVAZAN INÈS - FRANCE

Phone +33 6 64 36 61 64 • aivazian@novaimo.com

Connect & stop violence

CONNECT & STOP VIOLENCE is a miniaturized and autonomous alert device, which sends an alert without the need of a mobile phone. It is discreet, modular, open system, using the Long Range signal and with immediate access in all circumstances of violent cases. It is to be distributed directly through the security services (police, private services, etc.), health (doctors, hospitals, midwives, pharmacies, etc.), in supermarkets, to anonymous individuals, in school services, assistance assoc. etc.

AL JOHANI SAMAR OLAYTHAH - SAUDI ARABIA

Phone +966549259230 • samar.moon.1@hotmail.com • www.uqu.edu.sa/studaff/83391

Control system to reduce electric fire hazards

An automatic control system embedded within the electrical wiring uses analog and digital sensors to measure the current intensity standards, the voltage difference and the ignition criteria, and it is linked to an alarm system that works in the event of high electrical consumption on the electrical connections and when the current does not decrease after the alarm, the current is automatically cut off from the system through the automatic circuit breaker and the consumer can restart The delivery afterwards without any damage to the system.

AL-BOGAMI AMJAD SALMAN - SAUDI ARABIA

Phone +966507809804 • Amjad55-5@hotmail.com • www.uqu.edu.sa/studaff/83391

Electronic cane

An electronic stick helps the blind in directing them to their way, and they can talk to the stick in order to receive orders, direct them and alert them when there is danger, as it directs them to their way and protects them from danger.

ALKHALIFAH RAYAN, GHALY SIDI - SAUDI ARABIA

Phone +966533337864 • aialmohimeed@imamu.edu.sa • www.imamu.edu.sa/en/Pages/default.aspx

Orphan monitoring system

Design and implement a reliable and cost-effective orphan monitoring system in the orphanage by applying Radio Frequency Identification (RFID) and Global System for Mobile Communication (GSM) technologies.

ALPHAO CO., LTD. - SOUTH KOREA**Terminal for Electric Wire Joint Connector**

This technology makes that connects wires easily without removing insulation wires when connecting wires. It has 3 Advantages : first time saving (Reduce labor Cost), second no risk of electric Shock/Fire and third provide the same quality of connection for everyone.

AL-RAHIMI RASHED, ZIAD MOHAMED - QATAR

Phone +974 66099426 • administration@qsc.org.qa • www.qsc.org.qa

Wireless power harvesting

Wireless power harvesting (WPH) of scale is the next stage in low power electronics. In this invention, we study to energize wirelessly smart IoT devices. The IoT and WPH offer a solution to encourage the engineers and growth of modern societies building cellblocks. The idea is a solution to electricity all sensors and devices wirelessly from RF energy.

Nom inventeur:

AL-SHEHRI SAMIA FAYEZ MOHAMMED - SAUDI ARABIA

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Teacher's Assessment Device

Teacher's Assessment Device conducts weekly, monthly and yearly statistics about the teacher's performance. In addition, to planning, implementation, and self-evaluation. The device is the size of a calculator. It consist of 1- an Arduino screen 2- Software and is equipped with a fingerprint device.

ALYAHYA MUNIRAH, ALKHALIFAH SADEEM, ALAYBAN DALAL, ALMUHRIJ ALREEM, ALOWISHEQ AREEB - SAUDI ARABIA

Phone +966533337864 • aialmohimeed@imamu.edu.sa • www.imamu.edu.sa/en/Pages/default.aspx

Barq

"Barq" is an on-demand delivery service system that employs an autonomous fleet of drones to deliver packages between shops and customers without human intervention. The simulated system uses auction algorithm a decentralized decision strategy and Ant Colony System (ACS) algorithm is implemented in each drone for deriving the delivery schedule.

APPLICATION TECHNOLOGY COMPANY LIMITED - HONG KONG

Phone +852 61948880 • admin@apptech.com.hk • www.apptech.com.hk/pixeleye/

A.I. Smart Pole for underground pipe damage prevention

Our portable Smart Pole is an Intelligent Monitoring and Alert System that detects the activities of heavy machinery on site. The Smart Pole has a space-saving design and uses an intelligent algorithm that is specifically trained to adapt to rigorous outdoor environmental changes and extreme weather conditions.

ARAMWITH SUPAVADEE, MUHAMMAD WAZIR, RUANGSANG WATCHARA - THAILAND

Phone +6663 6459 651 • supavadee.a@chula.ac.th • www.ee.eng.chula.ac.th

Custom hardware architecture for real-time super-resolution in images

Custom hardware architecture for real-time super-resolution in images. The device performs deep learning technique to reconstruct and generate a high resolution image from a certain low resolution image. Our prototype is small and light-weighted with standalone operation while reconstructing low resolution images into higher resolution images of 2x, 4x, and 8x in real-time.

BEIJING UNIVERSITY OF POSTS AND TELECOMMUNICATIONS - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Device and Method of Software Defined Quantum Key Distribution (SDQKD) Service Provisioning

This achievement can overcome the contradiction between low key generation rate and high dynamic burst services in QKD networks.

BLUE PIN (HK) LIMITED - HONG KONG

Phone +852 9168 9000 • gary.leung@bluepin.hk • www.bluepin.hk

Blue Pin (HK) Limited / Dolphin - Effective Indoor Positioning Service

A new IPS (Indoor Positioning System) solution that helps users detect their locations, search for & navigate to destinations accurately. "Dolphin" uses BLE beacons with a newly developed location algorithm and Co-operative Positioning algorithm to provide indoor positioning & navigation with accuracy within 3 meters, even in areas with no or insufficient beacon signal.

CHANG SHA UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Cloud-Edge collaborated intelligent electric vehicle charging guidance system (EVCGS)

A novel neutral grounding method with a controllable voltage source was invented. It can reduce the fault point voltage to below the safe voltage within 200ms, thus eliminate electric shock, fire and outage hazards.

Neutral Grounding Method via Voltage Source for Distribution Network to Prevent Electric Shock, Fire and Outage

A non-contact traveling wave sensor and fault location system are developed. Used at all voltage levels of network. No need to change the primary power system and power cut. Fault location realized within second, error less than 50m.

CHINA UNITED NETWORK COMMUNICATIONS GROUP COMPANY LIMITED - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Biological treatment technology based on electron acceptor of sulfur cycle and its application in wastewater treatment

This invention provide a method and an apparatus for controlling internet of things (IoT) devices to improve the efficiency of control of an intelligent terminal over the IoT devices.

METHOD AND APPARATUS FOR CONTROLLING INTERNET OF THINGS DEVICES

This patent uses automatic identification and user participation to effectively identify the APP heartbeats, form a heartbeat identification database by innovative algorithms, effectively manages and sets the heartbeat timer in the mobile terminal, intercepts useless heartbeat timer requests, combined with the heartbeat pull mechanism in the heartbeat management system, effectively avoid signaling storms and decrease mobile phone power consumption.

CHONGQING THREE GORGES UNIVERSITY - CHINA

Phone +86 13068397681 • agl1509@163.com • www.sanxiao.edu.cn

Intelligent battery management system of electric vehicles

Developed an intelligent battery management system of electric vehicles. The use of the embedded intelligent electric vehicle battery management system module controls the estimation error of the battery packs state of charge within 5%, and saves 15% of energy during the balanced management of charging and discharging.

CHUEAMUEANGPHAN JIRACHET - THAILAND

Phone +6689 636 6669 • jirached.chu@pea.co.th • www.pea.co.th

Automatic Transfer Voltage (ATV)

Automatic Transfer Voltage (ATV) is innovation that solves power outage problem. When a fuse blows, one phase is taken out of operation. ATV will temporary supply electricity with the rest of the phases which still working. This innovation will to be able to satisfy the customers' electrical requirements. People can utilize the electricity continuously and efficiently, even if the electrical has gone off.

CHUNPENG WANG, YIYANG ZHAI, SHENG SU, SITAN JIANG - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Immersive Remote Interactive Aquarium Viewing System

The system is non-intrusive and immersive, which helps people interact with the aquarium's animal in a better way. Including an underwater robot, a video transmission system and a public service website.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/cto

The Golden Calf

The Golden Calf is an artistic, content rich and technologically innovative embodiment of mixed reality's emerging potential to merge virtual and augmented reality with real time ambient vision.

Youth Sports Education and management SaaS platform Based on AI & IoT

AI MOTION SPORTS LIMITED (AIMS) is a youth sports education and sports SaaS management platform powered by A.I., IoT, and Motion Recognition Technology. Having received investments from World-class VC SOSV, EF and HKTSP, AIMS is digitalizing and defining the next-generation sports education standards.

COLLEGE OF ELECTRICAL ENGINEERING (ZHEJIANG UNIVERSITY) - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Long-Distance, High-Reliability and High-Efficiency Energy Station for Ocean Observatory Network

Subsea energy station with digitalized and modularized design provides electric power for ocean observation network 3000km away from the shore. Power efficiency is higher than 97%. The lifetime reaches 25 years.

DALIAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 13164527256 • sxg@dlut.edu.cn • www.dados.com.cn

DADOS : A cloud-based data-driven design optimization system

It is a cloud-based data-driven design optimization system (DADOS) for researchers and engineers to improve an engineering design or product. DADOS has features of expandable framework, multi-user/task collaboration, drag-and-drop task building, one-click optimization analysis, and rich visual plugins. With DADOS, one can conduct performance prediction, optimization, and sensitivity analysis efficiently.

DEPARTMENT OF ELECTRICAL ENGINEERING, TSINGHUA UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

equipment and system for Interaction between EVs and Power Grid Supporting New Energy Consumption
Feeder protection and control device has been invented, which is used outdoor to protect and control feeders in power system. Feeder fault section can be identified and isolated instantly and directly without the requirement of communication.

DEPARTMENT OF ELECTRICAL ENGINEERING, TSINGHUA UNIVERSITY - CHINA

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Feeder Protection and Control Device

This project proposes an adaptive overload identification technology based on dynamic process, which identifies out-of-area tripping by monitoring the dynamic change process of local electrical quantities, adaptively adjusts the ucso overload criterion, further improves the overload identification performance, avoids the misoperation of distance protection caused by accident overload, inhibits the occurrence of blackouts, and gives the system control time.

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

Phone +852 3757 6075 • kplei@emsd.gov.hk • www.emsd.gov.hk

Cloud-based Predictive Maintenance System for Real-Time Lift Monitoring using Hybrid Sensing Network and Artificial Intelligence Technology

Our invention offers a turnkey solution for Smart Mobility applications. The hybrid sensing network comprised of Smart Neural Optical Fibre and Electrical Sensing Network measure a wide range of parameters for early detection of developing defects using artificial intelligence technology. The goal is to achieve predictive maintenance for lifts and escalators.

FUDAN UNIVERSITY - CHINA

Phone +86 18964906921 • fanyibo@fudan.edu.cn • http://viplab.fudan.edu.cn

Giga-pixels Video Camera

Giga-pixel camera, intelligent image processing system and large screen display system. Through the real-time stitching of multiple video streams, the high-resolution combined intelligent image processing system can realize face recognition and object recognition.

GASCUEL JACQUES - ANDORRA

Phone +33 646 334 639 • contact@jacques-gascuel.fr • www.fullsecure.link

EVICYIPHER

Segmented key authentication system to one or more applications. Key segments can be a GPS position, a password, a network identifier, a phone UID, a barcode. It is the recovery of all segments that will allow access to secure data.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Technology of double- axle rail changing hinge

An storage robot has been developed to achieve the mechanical structure, high-speed motion control, and multi-unit network operations, utilized in multiple vehicles and can be distributed flexibly.

GUANGDONG UNIVERSITY OF TECHNOLOGY- YONGKANG ZHANG - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A jack up self propelled installation vessel with multiple legs for offshore wind farms

The pile legs are round and octagonal. The working water depth is divided into 35m, 45m, 50m and 80m. The lifting capacity is 900 tons, 1200 tons and 3200 tons.

GUODIAN UNITED POWER TECHNOLOGY COMPANY LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

System

The project invents 270° variable pitch and variable speed control technology to achieve bi-directional efficient capture of ocean current energy, and independently develops the first set of 300 kW bi-directional horizontal axial tidal current energy generator in China.

HARBIN ENGINEERING UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Full-color Multifunctional 3D Printer

This project designed and implemented a full-color 3D printer based on multi-jet FDM technology, and designed color 3D printer control software based on Bresenham algorithm to achieve super expressive power such as model color control, hardness degree, transparency, texture, etc.

HASSAN MARWAN - UNITED STATES OF AMERICA

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Sketch-to-BIM

A computer vision technology in the form of a tablet application that takes a picture of a freehand sketch of a floor plan to automatically convert it into a fully designed 3D home. The 3D home includes the architectural model, the structural model and the bill of materials of the building components using wood.

HONG KONG APPLIED SCIENCE AND TECHNOLOGY RESEARCH INSTITUTE (ASTRI) - HONG KONG

Phone +852 3406 2800 • corporate@astri.org • www.astri.org

Smart Water Data Analysis

Real-time analysis for Hong Kong Water Supply Department (HKWSD) flow meter data identifying anomalies (e.g water pipe leakage or meter errors).

Document Auto-Summarisation

A novel method for financial documents auto summarization by extracting representative sentences from the documents

Smart Behaviour Analysis System

An efficient and effective behavior analysis system with timely warning upon detecting specific behaviors.

Apparatus and Method for Virtual Walkthrough Generation

The present inventions relate generally to electronic three-dimensional (3D) walkthrough environment for virtual reality (VR) virtual tour and electronic 3D viewing environment user-interactions for augmented reality (AR) remote assistance.

Apparatus for Measuring Objects in 3D Scenes

The invention proposes a method of 3D posture, dimension and shape measurements for various scenarios, including robotic picking, industry inspection, 3D microscopic measurement and building construction. The invention focuses on the 3D data processing by proposing new 3D data structure and 3D feature extraction methodologies which are computation-efficient.

Zero Knowledge Proof Hardware Accelerator

Hardware accelerator for accelerating the Zero Knowledge Proof (ZKP) protocol by reducing the computation time of the cryptographic operation is disclosed. The accelerator includes a ZKP engine having one or more processing units running in parallel. The processing unit can include one or more multiply-accumulate operation (MAC) units, one or more fast Fourier transform (FFT) units; and one or more elliptic curve processor (ECP) units.

Improving User Data Delay and Throughput Experiences for Cellular System over High Latency Backhaul

For cellular system deployed in remote, underserved areas, a long wireless backhaul connection, e.g., a satellite link is used to reach the local base stations and users. The invention reduces the data delay while significantly increasing the bandwidth utilization in such deployment.

IoT Data Exchange Using Blockchain Technology

Innovative scheme to set up a platform for IoT data exchange using blockchain technology (distributed ledger) as the backbone for transparency and traceability, and using an off-chain approach to relief the problems of large storage overheads and slow data access

5G O-RAN Base Station with Frequency Domain Signal Extraction Technology

5G Open-Radio Access Network base station (O-RAN) design for public and enterprise networks that improves data rate and latency as well as lower radio hardware complexity.

Mobile Mission-Critical Communications Terminal

Mobile terminal integrated circuit for mission critical communications : Support 4G cellular communications and broadband trunk radio ; and support device-to-device direct communications.»

Improved Multi-Beacon Wireless Indoor Positioning System

System design to improve wireless indoor positioning with the following impacts : Improve indoor positioning robustness against wireless interference ; and indoor positioning with fast response time can enable applications such as targeted advertisements, navigation, etc.

5G and Vision-Based AI Improvements for Automated Guided Vehicles (AGV)

Algorithm design to improve the accuracy and response time of cloud-controlled AGV (Automated Guided Vehicle) with the following impacts : Reduce the computational overhead, improve the robustness, and shorten the response time of for vision AI AGV tracking ; and Enable AGV use cases in 5G smart factories»

Wide-Bandgap-Based Power Converters for Next Generation Data Centres

Novel electronics packaging technology platform that dramatically improves the electrical performance (power density, efficiency, driving speed, etc.), thermal performance and reliability at the same time of key power conversion modules in data centers and telecommunication equipment.

HONG KONG APPLIED SCIENCE AND TECHNOLOGY RESEARCH INSTITUTE (ASTRI) - HONG KONG

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3D High-efficiency Power Electronics Modules for Metro Train Energy Storage Systems

Novel electronics packaging technology platform that increases the power density by 10 times and provides the 2nd thermal interface to improve the heat dissipation capacity by 30% of key power electronics modules in Metro Train Energy Storage Systems

Enhanced Long-Distance Wireless Power Transmission Platform

Novel medium-range wireless power transmission technology platform that enables the simultaneous multiple-object charging at a distance of 150mm or above with a power rating of ~100 Watt, which is suitable for smart home applications, such as notebooks, tablets, cell phones and all kinds of IoT sensors.

Interconnect Technologies for Electronic Circuit Fabrication and Through-Silicon-Via Technologies for IC Integration

An improved electroplating fabrication process of interconnects with novel electroplating material, optimization process, monitoring method and bonding method for forming a wafer stack.

ElectroStatic Discharge Protection Solutions for Advanced CMOS FinFET Process for 5G Applications

This ESD invention portfolio intend to provide whole chip ESD protection solution for advanced CMOS FinFET technology, including 1 low-cap ESD structure for Input/Output (IO) protection and 1 area-efficient power clamp for power rail ESD protection.

Low-Capacitance Transient Voltage Suppressor for Mobile Electronic Surge Protection

This invention provide a low capacitance TVS to address surge protection problem in electronic systems. This low-cap TVS includes a special silicon controlled rectifier (SCR) structure, which can overcome latch-up risk due to small holding voltage in conventional SCR structure.

Advanced Digital Circuit Breaker for Energy Efficient Direct Current (DC) Buildings

This invention provide a controller for AC/DC or DC/AC multiphases power converter for sharing or balancing current between the multiple power converter phases to achieve high power conversion efficiency; a semiconductor-based DC mechanical circuit breaker (MCB) can achieve x100 – x1000 times fast then nowadays circuit breaker >99.9% efficiency under natural cooling.

AI Quality Assurance System for Smart Manufacturing

Integrating AI-based approaches to the manufacturing process to provide a flexible, fast and highly accurate automated system with intelligent cognition for various industrial products.

HONG KONG BAPTIST UNIVERSITY - HONG KONG

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Portable Body Motion Analyzer for Elderly Fall Risk Assessment

Fast and accurate fall risk screening for the elderly using wearable sensor, mobile app, edge, and cloud AI & ML algorithms to analysis body motion such as walking and standing.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

kNOw Touch - Contactless Elevator Control Panel

Given the threat of COVID-19 infection risk from physical touch, minimising contact with objects has become an essential part of anti-pandemic efforts - particularly when it comes to pressing the elevator buttons, which is often regarded as a hotbed for germs. HKPC has developed a novel “kNOw Touch” contactless panel to lessen the risk of coronavirus transmission whilst using an elevator. This cost efficient technology only requires a small twist without the need of vast mechanical alteration to perform.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 13797039668 • radio.zuo@foxmail.com • http://sgo.hust.edu.cn/

Direct Current Auto Transformers

A family of direct current auto transformers is invented for interconnecting two or more direct current power systems with different voltage levels. They reduce the needed total capacity and the power loss of the direct current- direct current (DC-DC) converter, therefore, reducing the cost greatly and paving ways to integrate large-scale renewable energy and build a carbon-neutral society.

HWANG GI TAEK - SOUTH KOREA

Watch type device for complementary alternative communication and method for providing complementary alternative communication using it

It is a patent for a clock-type terminal for AAC and a method of providing it. The device includes steps to display, select icons, and steps to output voice. It also includes location tracking and alert notification.

INNOSPIRE TECHNOLOGY LIMITED - HONG KONG

Phone +852 9319 2978 • kimmyshum@techinnospire.com • www.techinnospire.com

WeSee Smart Glasses

With our technology, instant video and audio signals can be transmitted through the internet to our backend staff. These backend staff can work at the call centre of our collaborator or at home. As mentioned above, only limited skills are required for people to perform the job well. Therefore, disabled or undereducated people can earn a living in the call centre or even at home.

JIUJIANG JUNIOR MIDDLE SCHOOL - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Intelligent Guidance System of Underground Parking Lot

The invention can feedback the occupied spaces, guide the vehicles automatically and accurately to the designated ones by robots to solve the difficulty of parking.

JUNGLEMONSTER - SOUTH KOREA

Smart Bowl for Pets with IoT

Through the IoT device, daily data such as amount of food, drinking and bowel movements of pets can be collected, and health data of pets can be check through one application established by JungleMonster. It forms big data through large data accumulated by users.

KETCHAM MAHASAK - THAILAND

Phone +6683 555 9088 • maoquee@hotmail.com • www.it.kmutnb.ac.th

An Electrocardiogram Signal Analysis for Cardiovascular Disease Classification

The Electrocardiogram (ECG) Signal monitoring system develop by using Wireless Sensor Network. Sender module get the ECG signal data from ECG sensor, then send to network by Zigbee. Receiver module will show ECG graph and analyst abnormal ECG, then notify to user.

KETCHAM MAHASAK - THAILAND

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Real time fatigue Monitoring system

The real time fatigue Monitoring system among drivers by using position detection and eye movement to detect fatigue in while driving a car. Haar-Like and Region of Interest were employed to detect position and eye movement to analyze fatigue through machine learning techniques forecasting.

KIM SUNG RYONG - SOUTH KOREA

Real time VR service device, method and system through avatar

'towish' is a service platform that enables exploration of remote locations together with human of yourself and robot avatar by looking at the real-time 360-degree VR. The viewers can turn 360-degree images with one's hand or can look at the world in real-time by wearing a headset. In addition, you can order the things that you want to your avatar and can look around the world as if you were on the scene.

KLINHOM TUNCHANOK, TANGKOCHAREON THANA - THAILAND

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MEASY

MEASY is a web application for getting electricity. It can use on all platforms and devices. Customers request to use the electricity only three steps as following : Fill in information of the requestor, identify the location of usage and verify identity via OTP. Customers can pay any payment channels and track operational status at every step.

LEE JONGHO - SOUTH KOREA

Safety receptacle

Electric shock, short circuit zero outlet : Can prevent all accidents during the outlet use by combining the functions of the existing outlet, prevention of electric shock, short circuit, and dust fire.

LOGISTICS AND SUPPLY CHAIN MULTITECH R&D CENTRE (LSCM) - HONG KONG

Phone +852 3973 6200 • mchan@lscm.hk • www.lscm.hk

Next InsurChain

Next InsurChain can enhance blockchain technology for efficiently sharing and keep tracking of insurance policy among different parties, while also with proper access control and privacy protection on sensitive data.

Delivery Robot with end-to-end navigation policy

The invention is a delivery robot prototype built with advanced software and hardware infrastructure to travel in complex and dynamic environments. It navigates via SLAM with Lidar and our in-house trained deep learning path planning policy which enables passing through smoothly in narrow paths with gateway, in wide-open areas, regions full of static and moving obstacles.

Electronic Wristband and Monitoring System for Hong Kong's "Stay Home Safe" Home Quarantine Support Solution

The solution requires a person to install a tracking device in a residence and to wear a paired e-wristband. A server monitors the tracking device remotely on the received signals emitted from e-wristband (ensuring the person wearing the e-wristband is nearby), and on its location (ensuring the tracking device is within the residence). It will trigger alert on any anomalies.

LUBLIN UNIVERSITY OF TECHNOLOGY - POLAND

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Transformer with kinetic energy storage and its control method

Transformer with kinetic energy storage and its control method is an invention which improves on motor-generator system. It implements power electronic circuitry and 9 phase machine to create easy and controllable interface for medium voltage (15 kV) grid.

MANOSNGIAM RONNAKORN - THAILAND

Phone +6681 890 1773 • ronnakorn.ma@pea.co.th • www.pea.co.th

Tampering Tester

Tampering Tester is used to test the tampering detection and alarm function of 1-phase electronics meter for 8 patterns of tampering follows the PEA's specification with correctly, rapidly, safety and it also portable to on-site operates too.

MIRKOHI MOHAMMADAMIN, MIRKOHI DORSA - IRAN

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Fortifier Origami Soft Robot for Human and Animal

This soft robot is aimed to increase the firmness and strength of forearms and forelegs in human body (on: Ordinary people, Athletes, tennis players and so on) and animals (such as: Horses, dogs and Etc.) The way of achieving this target is to have a soft robot which surrounds you and your horse's forearms and legs in a beautiful helix shape, adding the required wind pressure in order to fortify your part like a changeable forearm or tendon band with much more higher efficiency.

NANJING UNIVERSITY - CHINA

Phone +86 18151912541 • yuy@nju.edu.cn • www.nju.edu.cn

A Data-Driven Intelligent Decision and Transfer System for Autonomous Driving

A Data-Driven Intelligent Decision and Transfer System can simulate traffic scenes realistically and output a robust driving policy running in real world safely. Current automatic driving decision consists of human-designed rules based on perceptions after huge workload, and it is hard to drive on open roads. We propose a training system to obtain the driving policy in a simulator and transfer it to the real world, without the demand of thousands of expert rules.

NANJING UNIVERSITY - CHINA

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<https://ocer.nju.edu.cn/a5/04/c4822a173316/page.htm>

Development of multi-core fiber coupling fusion system

Multicore fiber fusion system has been developed for the first time, with the following two innovative technological breakthroughs: The first commercial automation technology, to ensure that the optical fiber cutting angle is less than 0.3° , to achieve automatic stripping, cutting and welding; Break the foreign monopoly of core technology, achieve 4 seconds fast error-free core.

NANJING UNIVERSITY - CHINA

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Matrix Discrete Element Calculation Method

Proposed the world's first matrix discrete element calculation method, which greatly improves the efficiency of geotechnical engineering numerical analysis. A corresponding numerical software MatDEM was developed, which realizes the numerical analysis of complex multi-field coupling processes at the engineering scale. The software has been applied in the numerical analysis of various engineering issues, such as hydraulic fracturing, landslide disaster prevention and tunnel excavation processes, etc.

NIROUMAND VAHID, ABBASZADEH HAMZEH - IRAN

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Multifunction meter with the simultaneous connection of several branches to power, water and gas system.

The power, water and gas meters occupy a relatively large space in all buildings, and intelligent management and maintenance of each one is very costly. On the other hand, the installation of each of these meters requires equipment in the building. The invention integrates all three meters in a unit and enables its intelligent management to save space and facilities and allows their integrated management.

NORTH CHINA ELECTRIC POWER UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Yue Tong Gel Candy

In the project "Smart management and control systems for power demand-side resources supporting high proportion of new energy accommodation", the adjustable potential of power demand-side resources is modeled based on feature clustering and dynamic pricing algorithm is proposed to guide the aggregation and optimization of multiple demand-side resources.

Smart management and control systems for power demand-side resources supporting high proportion of new energy accommodation

The charge and discharge of large-scale EVs have randomness and disorder. This brings great challenges to the safe and stable operation of power system.

Wireless Integrated Mechanical Sensor for Measuring Multiple Parameters in Ultra-high Temperature Environment

The presented invention uses ceramics and langasite materials to fabricate multi-parameter wireless passive devices for extremely environment, and hard to reach narrow and sealed spaces.

NORTHEASTERN UNIVERSITY - CHINA

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Condition Monitoring Method and Device

This device contains sensor module, GPRS module, FPGA module, edge computing module, and power module. The FPGA module outputs the control signals to each functional module. Vibration sensor is used to collect the vibration signal, which is transmitted to the edge computing module. The edge computing module determines whether there is bolt looseness in the tower, and then transmits the result to the remote PC through the GPRS module, and thus achieving the tower bolt real-time condition monitoring.

The Kinetic Energy Feedback Voltage Interruption Protection

This protection system uses the damping kinetic energy from the high-speed rotating rotors during voltage interruption to generate a constant levitation force to keep the rotor from falling down and getting damaged. The converter topology and the control strategy are proposed to realize the variable inputs-constant output effects. Since there is no firm switch, the protection system can obtain 0ms seamless switch. It also avoids the back-up power sources, which saves much investment and maintenance costs.

NORTHEASTERN UNIVERSITY - CHINA

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Low temperature waste heat power generation

A complementary energy supply system for a park micro-energy grid containing low-temperature waste heat for power generation. The structure of the microgrid includes low-temperature waste heat generators; the mathematical model of low-temperature waste heat generators and electric heat storage systems was established.

PHOTHA WATCHARPOL - THAILAND

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P-MAC : Power Meter And Current transformer tester

"P-MAC : Power Meter And Current transformer tester" is the multifunction calibrator for the kWh meter with current transformer. It integrates with industrial grade and high accuracy power meter module, which automatic and more convenient than usual test, Inspection plan on google map and test result via mobile application.

QINGDAO HAIER AIR-CONDITIONER GEN. CORP., LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Jet mixing air conditioner technology

Voice technology development and application of smart air conditioner, the wind moves with voice, free dialogue, voiceprint recognition, offline voice recognition technology.

SCHOOL OF ELECTRICAL AND INFORMATION ENGINEERING, TIANJIN UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Method for setting heartbeat timer, terminal and server

Cloud-Edge collaborated intelligent electric vehicle charging guidance system : Guide EV users' charging behaviour based on Cloud-Edge perception of transportation and power grid

SEUNGYONG KIM - SOUTH KOREA

The Method and Apparatus for Determining Transportation Fee based on Deep learning

Coconut Silo's total logistics solution, COCO TRUCK connects whole players in the logistics market into a single platform. The diploma is one of its main features, it helps users to move their cargoes at an affordable price based on the analysis of 27 factors that affect the price of the cargo.

SHANGHAI JIAO TONG UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Voice Technology Development And Application Of Smart Air Conditioner

we take the advantage of the grating coupling mechanism to trap and redirect the incident controlling lights to propagate along the surface of screen. Finally, the incident lights are sent to the optical sensors setting surround the screens, which enable the screen to know the positions of incident lights for reacting to the inputs like having intelligent eyes.

SICHUAN ENERGY INTERNET RESEARCH INSTITUTE, TSINGHUA UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Intelligent +5G» Mass Customization Test And Verification Platform

The mechatronics design makes the armour clamp have the functions of communication, energy acquisition and perception, which can provide solutions for ubiquitous perception of transmission lines.

Panoramic perception platform of transmission line based on intelligent armour clamp

This system uses intelligent technology to monitor operation information of environment, electricity, machinery, which can realize the whole life cycle intelligent operation and maintenance of the switch cabinet.

SICHUAN ENERGY INTERNET RESEARCH INSTITUTE, TSINGHUA UNIVERSITY - CHINA

Underground facility anti-damage intelligent sign pile

It reveals the decoupling storage principle of pressure potential energy and compressed heat energy, and overcomes the problems of high load wide working condition centrifugal compressor, low loss heat storage/exchange, large capacity stable gas storage, wide pressure variable operation condition of turbine expander and source- power network-load-storage coordinated operation control.

Large scaled non-supplementary fired compressed air energy storage power generation system

This invention combines the flexibility of power electronic equipment together with the operating mechanism of synchronous generator, can make the renewable energy power generation to plug and play, and to operate autonomously.

SIDHU MANJIT SINGH - MALAYSIA

Phone +60126637645 • manjit@uniten.edu.my • www.uniten.edu.my

Smart dance training system with gesture user interface

This smart novel and unique virtual training dance system aims to help people live a healthy life (hygiene, with non-body sensors preferred this pandemic time) and overcome social anxiety. Users can follow the dance-postures of a virtual trainer shown in a first-person viewpoint and receive motivational coaching through a step-by-step motion thus enhancing their artistic skills.

SOONTORNPIT PICHITPONG - THAILAND

Phone +6687 916 2552 • pichitpong.soo@mahidol.ac.th

Electronic Home Health Care System on web applications

The Electronic Home Health Care System on web applications is to support health services and cares for patients or the elderly at home. This hospital based system that is patient-centered use the information obtained to study and analyze for planning policy and human resources or developing guidelines for patient care at home.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 13813837607 • xuqingshan@seu.edu.cn

<https://ee.seu.edu.cn/2016/0118/c25248a283854/page.htm>

Automatic Identification System for Low Voltage Network Topology»

A novel method to detect topologies of low voltage distribution grids (i.e., end-user to line to substation), identify current phases of end-users, and locate faults in grids fast and accurately. Based on low-voltage non-invasive measurements, the complete topologies of low voltage distribution networks can be automatically generated.

SOUTHEAST UNIVERSITY - CHINA

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<https://sfl.seu.edu.cn/2019/0516/c24319a273262/page.htm>

Essay Marking Tool Using Simultaneous Cursor and Audio Recording»

It is an Essay Marking Tool Using Simultaneous Cursor and Audio Recording. The teacher points and clicks on the essay with the mouse and talks to a microphone as if talking to the students face to face. The students can then replay the marking on a desktop or smartphone webpage, where they can watch and listen the marking like face to face with the teacher.

STATE GRID CORPORATION OF CHINA - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Pinion-and-rack line tackle

This invention effectively addresses the issues of the traditional line tackle such as the serious wear of the conductor, the low efficiency of the laying and the difficulty of the high-drop laying

SUDTHONGKHONG CHUDANAT - THAILAND

Phone +6661 346 6488 • medicalmedia01@gmail.com

Thai Royal massage AR media

Creative media to promote Thai Royal Massage by collecting massage information of the body and using Augmented Reality (AR) that help to understand and more convenient for study Thai massage in 3D. To promotes Thai massage to a new generation and see the principle of press point on the body correctly as an alternative media to take care of their health.

SUDTHONGKHONG CHUDANAT - THAILAND

Phone +6661 346 6488 • medicalmedia01@gmail.com

Smart dumbbell application

Exercise equipment in office that helps worker who at same position for a long time can exercise at their table. This equipment will relieve the tension of muscles and brain to more focus and concentrate on their work. Exercise equipment work with program that was developed for office syndrome.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

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Automatic Identification and Smart forehead temperature sensing system

In the near future, with the raging new crown virus, all places including schools have invested a lot of manpower on epidemic prevention. In order to take body temperature more efficiently and safely and record it, we have developed a smart forehead temperature sensor with automatic identification, which serves as a measuring station. At the designated location, the smart forehead temperature sensor with automatic identification will detect the height and automatically adjust the measurement elevation angle. The measurer uses the identification card to scan the RFID. After the scan, the temperature measurement will be completed, and the temperature data will be explained through voice. , If the temperature is too high, the LCD liquid crystal display panel will display the temperature and the RFID card number. The database will be automatically created when the RFID is scanned, and the temperature data of the measurer will be transmitted to the cloud database for file construction. If the temperature is too high, it will be transmitted immediately LINE messages are displayed to supervisors and teachers.

Fast-password changing intelligent door lock

is a Fast-password changing intelligent door lock, mainly using QR CODE as the key of the door lock. We applied the QR CODE function on the smart phone as a password judgment for unlocking, and a new password can be changed immediately after unlocking. We changed the lock to a QR CODE electronic lock. The key only needs a smart phone or a card printed with QR CODE, which makes the door lock safe and convenient. This work is different from traditional door locks, which can effectively reduce the trouble of the tenant forgetting to bring the key or losing the key. If the QR code is stored in the mobile phone, it will not be afraid of losing it, and it can also prevent others from stealing the key. Own room. This work also supports the Internet of Things. After scanning, it is sent to the server using wifi. The server judges that the data is right or wrong and sends it to the host for unlocking. It can constitute the concept of an unmanaged hotel and quickly change the QR code immediately after the guest checks out Password is safer and faster than traditional door locks. In addition, it also saves the use of magnetic cards to reduce costs and pay attention to environmental protection.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

Phone +886 986 947 890 • ru5020169@gmail.com

The three-stage structure bioelectric wave near field sensing resonator

A composite device of a three-stage biological micro electromagnetic wave transmitting and receiving resonance structure. It can absorb weak electromagnetic waves and environmental energy from human body radiation. The first-stage electromagnetic resonance is generated by the first-stage electromagnetic transmitting and resonating element in the structure of the present invention, and the bio-electromagnetic wave absorbed by the human physiological function is brought to a resonance amplification effect. Then, through the second-stage electromagnetic transmitting and receiving resonant element in the structure, electromagnetic resonance is performed to re-amplify the biological electromagnetic wave which contributes to the human body function. Finally, the amplified biological electromagnetic waves are concentrated by the third-order electromagnetic transmitting and receiving resonant element for concentrated resonance. The biological electromagnetic waves amplified by this three-stage resonance are emitted to the human body. This product can help the human nerve signal transmission, cell membrane potential and microcirculation of blood vessels, so that the cells can obtain sufficient oxygen and nutrients to achieve the self-healing function of the activated cells and improve human health.

THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3943 3458 • cathywong@cuhk.edu.hk christineleung@cuhk.edu.hk • <http://cuhk.edu.hk>

Soliste – A Social Listening System for Understanding Your Customer

Soliste is a social listening system which helps you understand what your customers on the Internet is thinking and identify their interests. Soliste is one of the core components for a project we worked with the Consumer Council. Consumer Council is an independent statutory authority in Hong Kong which was formalised in 1977 under the Consumer Council Ordinance.

TIONG SIEH KIONG - MALAYSIA

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GreenZ-PV meter for Static and Dynamic Solar Photovoltaic Systems

New features were added in the existing solar PV systems by giving real time energy harvesting data with GPS either in SD memory or other gadgets. Commercially available data-logger solutions suffer operational stability and measurement accuracy, which in turns affect the overall cost-efficiency. As such, we propose a high efficiency two-mode multi-channel (12) data logger with 16-bits ADC resolution with inbuilt GPS location recording.

TSINGHUA UNIVERSITY - CHINA

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A New GeoComputation Pattern

In order to solve the problem of high technical barrier in using GIS, the invention puts forward a new GeoComputation pattern, namely Document As a System (DAS). In this pattern, the GeoCoptation process is described by GeoComputation language in MS word to form an intelligent document that can drive the background GIS software to complete GeoComputation.

TSINGHUA UNIVERSITY - CHINA

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Discrete State Event-Driven Modeling and Simulation Approach and DSIM software for Power Electronics Systems

A discrete state event-driven modeling and simulation approach that was developed into a DSIM simulation software for largescale power electronics systems with thousands of switching devices over different time scale. It runs 100 or even 1000 times faster than existing software, and has the unique capability of simulating nanosecond-level switching transient without convergence problems.

TSINGHUA UNIVERSITY - CHINA

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Inter-regional and Inter-temporal Electricity Trading Technique and Software Platform

The Inter-regional and Inter-temporal Electricity Trading Technique and Software Platform, which optimally clears the long-term electricity trading incorporating complex security constraints. The invention is applied in 8 provinces in China, reducing generation cost by around 1.2 million CHF/year, reducing CO2 emission by 46, 000 tons/year.

TSINGHUA UNIVERSITY- JINGBO TAN - CHINA

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5G Communication System with Low Power Consumption

To address the challenge of high power consumption of the 5G networks, an intelligent 5G communication system has been designed based on the reconfigurable intelligent surface (RIS) and the end-to-end learning to reduce the power consumption by about 20%.

TSINGHUA UNIVERSITY- ZHENG XIAOPING - CHINA

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Dedicated Magnetic Detection Device for Ferrimagnetic Objects

It's portable and can obtain high-density vector data in real time, with positioning accuracy < 5 cm and built-in corrosion calculation model.

TUNTISITTHIKORN ORANUCH - THAILAND

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Chlorine Next

Chlorine Next is the mobile application developed for re-chlorination to distribution system in order to comply with WHO guideline and secure the good health for people and can display real-time water quality data by real-time water map in application.

UNIVERSITY OF TABUK - SAUDI ARABIA

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Human Memory Evaluation System

Human Memory Evaluation System that enables predicting Alzheimer's disease before it happens by recording and analysing brain signals while presenting relevant information to the user such as their name, family members and detect the power of recognition in accordance to information stored in their memory.

UTP UNIVERSITY OF SCIENCE AND TECHNOLOGY - POLAND

Phone +48 504 456 938 • martagackowska21@gmail.com

Swarm drone communication and collision avoidance

This solution is distinguished by the presence of an advanced anti-collision algorithm used in swarms of drones along with a module and communication protocol, consisting in the use of information about the location of other drones, the use of security spheres and the use of location information, speed vector of other drones.

XI'AN JIAOTONG UNIVERSITY - CHINA

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Bit microgrid: A great collision of energy, information and finance

Bit microgrid is an energy microgrid with peer-to-peer transaction system using blockchain technology. The invention designs a complete technical route of energy blockchain, builds a data bridge between blockchain and traditional database, and develops an energy distributed trading system with complete technology and rich functions.

YOO CHEOLYONG - SOUTH KOREA

Kit for controlling multiple computers and use thereof

This product is a wireless mouse and keyboard combo set that can use 3 computers by channel switching, and this product was created to explain the new many-to-many communication technology that I developed.

ZHEJIANG UNIVERSITY- LIJIAN WU - CHINA

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A Modular Wind Power Generator System with Fault-Tolerant Capability

A modular wind power generator system equipped with innovative winding topologies is proposed to enhance the fault-tolerant capability of wind turbines, and further increase energy production.

High Torque Density Permanent Magnet Wind Power Generator

A high torque density wind power permanent magnet generator is proposed. A series of innovative designs are adopted on the generator to enhance its electro-magnetic, mechanical and cooling performances.

CLASS D

BUILDING - ARCHITECTURE - CIVIL ENGINEERING - CONSTRUCTION - MATERIALS - WOODWORK

CHANG SHA UNIVERSITY OF SCIENCE & TECHNOLOGY - CHINA

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Performance improvement technology of concrete bridges with prestress adjustment and compensation.

A series of novel devices are invented to realize the prestress adjustment and compensation. A device for prestress loss diagnostics is invented. The diagnostic error of prestress loss under concrete cracking is 5%.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/kto

Super Bamboo – Sustainable Structural Bamboo Materials with High Strength and Multi-function

An environmental friendly bamboo processing technique has been invented to densify natural bamboo materials without destroying their key microstructure elements responsible for superior mechanical performance, showing great potential in a board range of sustainable structural applications.

DALIAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 13840881266 • jjajq@dlut.edu.cn • http://faculty.dlut.edu.cn/jiajqing/zh_CN/index/774671/list/index.htm

Flexible Support for Geotechnical Engineering

The new technique of flexible support for geotechnical engineering allows a moderate development of the plastic zone of the pit wall, so that the self-supporting capacity of the rock and soil can be fully utilized. The overall stability and the deformation of the foundation pit can be effectively controlled. In the past 30 years, it has been applied to more than 1, 000 engineering projects in China and more than 10 billion yuan has been saved.»

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

Phone +852 3912 0655 • ivanli@emsd.gov.hk • www.emsd.gov.hk

Non-Intrusive Data Analytics System for Adaptive Intelligent Condition Monitoring of Lifts

This is a novel invention using deep learning technologies for intelligent condition monitoring of lifts. It is low cost – less than US\$500 for additional monitoring equipment for each lift, simple – easy on-site installation within half day, and non-intrusive – no need to intervene the lift circuitries. It is especially suitable for aged lifts which are not equipped with comprehensive monitoring systems.

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

Phone +852 3757 6290 • pmso@emsd.gov.hk • <https://www.emsd.gov.hk/tc/home/index.html>

Building Semantic AI: The Future of Automation in City Level - a real application in today

Develop a common building metadata model for describing the physical, logical and virtual assets in buildings and their semantic relationships. Together with data collected through BMS and IOT sensors in data lake, a knowledge map is generated in the AI platform to support augmented AI and accelerate innovation of smart building applications in Hong Kong and nearby regions.

HAFEZ MOHAMED AHMED - MALAYSIA

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Eco-friendly green concrete shell foundation steps blocks

Addressing common engineering and environmental problem in Malaysia, it will be used as a tool to improve the bearing capacity and reduce the settlement of the soft soil that exist on the west coast of Malaysia. Meanwhile, utilizing the waste materials produced by the coal power plants by converting it into construction materials in making a new type of green concrete.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Smart Road Studs

Smart Road Studs are data acquisition units combining both road reflectors and data collection tool. Automation of road maintenance works becomes feasible now, thanks to the capabilities of collecting and sending sensory data such as vibration, temperature and humidity to end servers. The integrated use of artificial intelligence road status algorithms equips the system with predictive capability, bringing drivers and passengers a safe and travel-friendly experience.

KIELCE UNIVERSITY OF TECHNOLOGY - POLAND

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The use of polyethylene glycol as an additive in silicate mass products

Eco bricks made from sand, lime and wather, with very good parameters and favorable price. The invention exceeds currently available on the market solutions (e.g. in terms of compressive strength, water absorption, thermal insulation, etc.).

LLEWELLYN AND PARTNERS COMPANY LIMITED - HONG KONG

Phone +852 95775739 • ltang@lpchku.com • www.llewellynandpartners.com

BIM Warehouse

BIM Warehouse formulates a new AEC business model. It is a B2B2C e-warehouse and e-commerce platform to house AEC assets within an ISO-compliant asset information management platform (AutoCDE) that integrates BIM, GIS, IoT, A.I. and Blockchain. It's A.I. functionality (AutoBIM) can generate semantic 3D BIM model. Powered by its blockchain (AEC2hain), it is to solution to the tokenisation for AEC and real estate.

NANJING JUNLI TECHNOLOGY CO., LTD - CHINA

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Automatic Water Barrier Device

The Automatic Water Barrier device adopt ultra thin modular design that can be easily installed at building entrance. When flooding, the water drives the low-density ram up into a dam without electricity.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

Rapid Repairing Mortar Materials for Efficient Maintenance of Ageing Buildings

Rapid repairing mortar materials (R2M2) comprise uniquely formulated mortar materials and steel fiber which can carry tensile loading. New rebar is no longer necessary when repair corroded rebar with R2M2, enabling 60% saving in existing concrete removal, 15% saving in total repairing cost and 40% saving in repairing time. Slabs patched with R2M2 showed 100% loading capacity recovery.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

Ultra-durable Anti-fog Nano-coating

NAMI's breakthrough ultra-durable anti-fog nano-coating is developed through hydrophilic macromolecular chains entanglement in organic-inorganic hybrid formulation and applied by atomization technology for uniform nano-layer without detectable appearance on glass/mirror surfaces. It is durable with service life of at least 2 years, 100 times better than that of conventional products.

NORTH UNIVERSITY OF CHINA - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Multi-function Liquid/Semi-solid Forming Equipment and Optimization Process for Light Alloys

In this project, the Multi-function Liquid/Semi-solid Forming Equipment, Squeeze Casting Combined Technology and Process Optimization System (EasyCast) were developed to solve the forming problems of light alloy complex components with high-performance.

RABET GANNADI AMIRHOSSEIN, AZIZIPESTEH BAGLO HAMID REZA - IRAN

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A New Method of Retrofitting Masonry Structures Using Carbon Fiber Tensile Rods.

A building, whether metal or concrete, must be resistant to lateral forces (earthquakes) in addition to the required durability in the estimated time for operation. Reinforcement of buildings has long been done according to the level of knowledge and awareness of the people, but the main problem is to find an efficient and effective way to do so. Choosing the wrong method of building reinforcement can also worsen the performance of the structure, so finding an efficient and appropriate solution to increase the building's resistance to lateral forces is the current concern of many engineers. This innovation is about how to use carbon fiber stretch rods to reduce the execution time of the reinforcement design by reducing the execution time and present a new quick and safe way for masonry structures.

SCHOOL OF CHEMICAL ENGINEERING AND TECHNOLOGY, SUN YAT-SEN UNIVERSITY - CHINA

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High-precision electromagnetic flowmeter

By introducing supramolecular layered double hydroxides (LDH) layers as the corrosion inhibitor carrier, and implanting chloride recognition probes between the layers, the corrosion inhibitor release system with an intelligent-response effect was successfully constructed, which broke through the limitations of traditional research idea of focusing on prevention» with less treatment».

SEMYARI ROUDBARI MILAD - IRAN

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Self-aware modular architectural system with the ability to navigate and adapt to the environment.

This invention is inspired by the cells and their placement together. The modular system is self-aware that is moving around the environment after reviewing the conditions and making the decision without any restrictions. They are constantly restructuring and reinventing itself. This invention consists of individual units with a specific geometry that is connected to other units via wireless. After collecting environmental data, the correct decision has been made through central AI and they create the optimal shape.

SHEN ZHEN FACE SHINE LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Fast-Heat Alloy Material

Fast-Heat Alloy Material uses a very thin superconducting tape as a heat source. When the power is turned on, the air outlet can reach the designed maximum temperature in a very short time.

SOUTHEAST UNIVERSITY - CHINA

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Superhydrophobic foamed concrete

A matrix superhydrophobic cement foam with high specific strength was developed by a one-step process. The rational tomographic and chemical properties of the border-air interfaces of cement foam were simultaneously modified by a nanohybrid method. This invention opens up new avenues for the low-cost preparation of superhydrophobic lightweight concrete.

SOUTHEAST UNIVERSITY - CHINA

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Efficient and rapid bacterial growth medium for the application of Microbially»

We optimized the contents of components in culture medium. The optimized medium can make full use of nutrients in the culture medium. The bacterial growth rate significantly increased, and it was observed that the strain growth entered a stable period after only 18 h. The higher urease activity can be obtained in a short time with the optimized medium.

Manufacture Method for Three- Component Composite Material Vibration»

It presents a manufacture method for three-component composite material vibration reduction metro roadbed. The three-component material is characterized by periodic structure and can be used for vibration reduction of metro. Therefore, the problem that the existing rigid metro bed has no attenuation on metro vibration is solved, and it has extensive application value in metro construction, operation and maintenance.

SOUTHEAST UNIVERSITY - CHINA

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Smart platform for public participation in urban design»

Smart Platform for Public Participation in Urban Design is comprised of three core parts : urban digitalized sandbox, multisource heterogeneous data, and multi-technology modules. This platform is the world first 3D smart platform that enables full-process participation by community residents.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

BIM Information Integration Platform—Construction of Operation and Maintenance System

BIM operation and maintenance management platform with functions of 4D simulation, fast valuation of quantities, safety risk warning mechanism and three-dimensional panoramic roaming system was invented.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

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A fast measuring device for building area

At present, the house area measuring instruments on the market can only measure houses with a square area, and can only be measured manually, which is time-consuming and has large errors. The invention is developed based on laser scanning technology and the principle of trigonometry. It can automatically, quickly and accurately measure the area of houses of various shapes, so it is novel and progressive. The invention is small in size, so it is easy to carry, and the design of the operation interface is very friendly, so it is easy to use. It can help buyers and sellers to quickly and accurately measure the area of the house and avoid disputes.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

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Intelligent Resonance Carefree Cabin

It gives the whole body cells full of energy and vitality. The cabin provides the best solution for health care, maintains the elasticity of the face, achieves the functions of ruddy complexion, good figure and body relaxation. After a weekday, staying in the PRC cabin makes you refresh just like walking in the forest or stands by the waterfall. The invention is the best product for natural energy healing, will be mass-produced and become a popular health care product in the market. It is one of the major inventions in the preventive medicine. This invention contains 4 features: Six sets of rotating resonators, focusing on 9.34um wavelength correspond with 37 degree Celsius from human body. Near infrared technology: 660nm, 940nm, 850nm wavelength. This energy is helpful for nerve cells growth. Intelligent control of lighting and music. 400W IONS concentration.

THE HONG KONG POLYTECHNIC UNIVERSITY - HONG KONG

Phone +852 9439 6930 • idy.to@polyu.edu.hk • www.polyu.edu.hk/web/

Smart City Platform: A Comprehensive System for Spatial Data Infrastructure

This platform is used for data acquisition, construction and geo-visualisation to build realistic and comprehensive 3D digital city replicas, as well as analytics of such replicas. Leveraging high-precision mobile mapping innovations for complex urban environment, and integrating laser scanning data, semantic 3D city modelling, and novel spatial big data analytics, it enhances and facilitates pivotal decisions during smart city development.

TIANJIN UNIVERSITY - CHINA

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New offshore wind power foundation and efficient construction technology

New technology for efficient, low-cost and large-scale development of offshore wind energy.

TONGJI UNIVERSITY - CHINA

Phone +86 13564663322 • yingzhou@tongji.edu.cn • www.tongji.edu.cn

Three-Dimensional Vibration Isolator with Adaptive Stiffness Characteristics

Three-Dimensional Vibration Isolator with Adaptive Stiffness Characteristics. It is an isolator which can adjust the mechanic behavior by itself to obtain optimal performance. It applies to buildings and facilities that need efficiently reducing vibration in three dimensions.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13701335716 • jinhui@tsinghua.edu.cn • http://www.env.tsinghua.edu.cn/info/1141/1066.htm

Innovative Technology for Making Value-added Functional Building Brick from Municipal Solid Waste Incineration (MSWI) Fly Ash

The innovative technology provides three-layer measures to solidify and stabilize pollutants in municipal solid waste incineration fly ash, what blocks human's exposure route to relevant risk. Meanwhile, the obtained product has good thermal resistance and waterproof property, which has been used for the construction of industrial structures for high temperature process.

ZHENG WANG, JINYAO LI, WENMIAO YANG, HONGXUAN LI, KUNXIONG WU - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

An automatic luminous flowerpot

This product uses the intelligent arduino control board and the light sensor and the motor to combine effectively, installs the light sensor in the flower pot four angles, detects the light intensity in time, which can greatly improve the lighting rate of the indoor bonsai flowerpot.

CLASS E

SANITATION - VENTILATION - HEATING

ALBARAKATI ALI SAEED - SAUDI ARABIA

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Smart water heater

Enhancement for the water heaters allowing it to be controlled by application on mobiles with abilities to set the temperature and schedule the operating time, which reduces the power consumption +70%, also luxurious because there is no need for mixing between cold and hot water to get the suitable temperature.

DAEHYUNENTEC CO., LTD. - SOUTH KOREA

Wearable air purifier mask

It is a mask-type air purifier that can be used permanently if the filter is replaced. It uses H13 grade Hepa filter, and it is equipped with a motor, so it does not sweat from the mask or moisture from the glasses.

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

Phone +852 2808 3594 • winsonwong@emsd.gov.hk • www.emsd.gov.hk

Air Filter 2.0 - Energy Saving Smart Air Filter Technology

Energy Saving Smart Air Filter Technology for Building Ventilation System. The invention involves vibration-enhanced air filtering technology combined with newly developed retractable mechanism. It aims to reduce AHU fan energy consumption while increasing filtration efficiency.

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

Phone (852) 3757 6009 • jefftse@emsd.gov.hk • www.emsd.gov.hk

IoT-enabled Smart Toilet Bowl Cleaning System for Public Toilets

Toilet hygiene is an important issue worldwide especially under today's pandemic situation, minimizing the spreading of toilet-bound diseases. Manual cleaning toilet bowls are unpleasant and physical demanding tasks faced by different toilet attendants around the world. To improve this, we formulate a touchless automatic toilet bowl cleaner with IoT-based sanitation monitoring and data-driven cleaning strategy with minimal infrastructure modifications.

GD MIDEA AIR-CONDITIONING EQUIPMENT CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Cube Smart Dehumidifier

The Cube Smart Dehumidifier is a new innovative product invented in 2020. It features a completely new-2-state design. One is working state. During this state, the unit can seat on the bucket which is more than 3 times larger versus any other comparable dehumidifiers' bucket, reducing the frequency of draining bucket by 3 times, that makes the use of Cube much easier.

Midea air fresh-keeping air-conditioner technology

Based on the centrifugal fresh air duct technology with high pressure resistance and on the intelligent cleaning technology of filter, the outdoor fresh air is sucked into the room using the high pressure resistance wind wheel.

GD MIDEA AIR-CONDITIONING EQUIPMENT CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Midea rotary large angle air supply air conditioner technology

Based on rotary large angle air supply air conditioner technology and the 180 ° omni-directional air duct technology derived from aircraft vectoring nozzle, this product firstly breaks through the limit of the existing air conditioner swing angle, making the cool air cover the whole house.

Midea U-Shaped Window Air Conditioner

Featuring whisper quiet operation, 3 steps easy installation, freely open of window, long distance airflow, and the high efficiency inverter technology, the Midea U-shaped window AC will bring a more comfortable and healthy life to people.

New technology of double culvert duct(Midea Pro KW200 cabinet air conditioner)

This project makes the first aviation double culvert wind control technology to provide users with the ultimate wind experience.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A novel permanent magnet assisted synchronous reluctance industrial motor system

1st VRF unit adopting continuous heating based on load & temperature adaptation and multi-mode heat recovery adaptive technology to realize cooling and heating regulation of air and water simultaneously.

Automatic Drum Washer&Heat Pump Clothing Care Dryer

An air sterilizer is developed to effectively kill virus with no secondary pollution. Its triple killing system can kill more than 99% of 2019-nCoV and other pathogenic viruses.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

In-building Sewer Mining for Urban Water Management

This is a novel concept of in-building sewer mining that extracts clean water from domestic sewage or greywater generated from a multi-storey residential building for on-site reuse. Leveraging the state-of-the-art coupling of biological biofilm technology and membrane filtration technology, as well as the fully automatic self-cleaning system, this very compact and unmanned system can be built in the basement of a building. This innovative distribution solution can reduce more than 40% of both fresh water consumption and sewage discharge of a residential building, thus significantly reducing water resources and sewage infrastructure required for an urban city.

LEE YOUNG GEUN - SOUTH KOREA

Contact lens cleaning apparatus and system

It is a designed to systematically clean and manage various 'Contact lenses' by checking remote cleaning, washing cycle analysis, and cleaning status monitoring in conjunction with smartphones.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

High Performance Air Purifier Using Plasma Driven Nanofibrous Catalyst without Ozone Emission

The present invention relates to a plasma driven catalyst reactor for purifying air. The nanofibrous Membrane Plasma Driven Catalyst (PDC-NF) air purifier uses NAMI patented PDC technology which integrates photocatalysts into a plasma reactor to dissociate ozone, and also incorporates a nanofibrous membrane inside the plasma ozone to trap pollutants and enhance the plasma dissociation efficiency.

PARK JUNGWON, JANG YOOMIN - SOUTH KOREA

BAG

Open the Boston bag, zip the bag modules together, switch to a four-tier shelf.

PIROMPUGD WORAHAEST - THAILAND

Phone +6681 804 8996 • worapiro@eng.buu.ac.th • www.buu.ac.th

The New Methods for Designing Fin-and-Tube Heat Exchangers under Dehumidifying Conditions and Capillary Tube for Refrigeration and Air-Conditioning Systems

The best programs for evaluating the heat and mass transfer performances of fin-and-tube heat exchangers under dehumidifying conditions and optimizing the capillary tube for refrigeration and air-conditioning systems.

QINGDAO HAIER AIR-CONDITIONER GEN. CORP., LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Haier Waterfall Air-Washing Technology for Air Conditioner

Jet mixing air conditioner technology, double eddy current pressurized mixed air supply, with infrared detection and air deflector to achieve accurate and energy saving air supply.

SAMKARI ABDULWAHAB ADEL - SAUDI ARABIA

Phone +966537149858 • Nais.a@hotmail.com • www.uqu.edu.sa/studaff/83391

Adjustable Turbine

The adaptive turbine , We connect the turbine with generators then put generators inside buoys and make small holes in the buoys to keep turbine turning with generators and top hole to take an electricity , After that we make a path for the system to keep it constant in x and y axes and movable in z axis.

SHIRLEY WANG - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Active Formaldehyde Purifying Device

The active formaldehyde purifying device increase the air circulation speed via using the internal motor, and the activated charcoal distributed in each tube increase the contact area with formaldehyde in the air to solve the problem in reducing formaldehyde

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 918 142 887 • scchang0210@yahoo.com.tw

Multifunctional dryer device

After bathing, the user may dry him by means of the two adjustable air vents and pipes extended from the top. Also, this device equipped a telescopic bracket overhead, which can preheat or dry clothes or towels hung. It will automatically cut off the internal power if the temperature is too high at the condition of the drying mode. In addition, The humidifier added with alcohol or essential oil can disinfect or fragrant the bathroom makes a comfortable and safe life for the family.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 932 193 358 • jshuang@tpcu.edu.tw

Voice-Controlled Shower Device

This invention relates to a voice-controlled shower device. It modifies a traditional shower device to control rotation of both the faucet and the shower head by different voices individually. The major features of this invention are : The device can adjust water temperature to make water warm, hotter, hottest, colder, and coldest by different voices individually. The device can generate three water spray patterns by different voices individually. The device can assist the parents to bath their baby. The device can assist people who have disabilities to bath themselves.

YIDA LI, DINGHENG CAI, YIDE FAN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Automatic Button Sterilizer

Automatic Button Sterilizer, which is designed for the elevator keys to be disinfected regularly during the epidemic period.

CLASS F

SECURITY - RESCUE - ALARM

ELSHAWADFI KHALID GAMAL - EGYPT

Phone +201123598459 • Khalid.Elshawadfy@Gmail.com • www.linkedin.com/in/khalid-elshawadfy-8a5559177

Safety Curtain System

"Safety Curtain System" is a new way to provide safety in cars, it can be used instead of seatbelts and frontal airbag systems.

ALAJLAN SALEH, ALMULLA ABDULLAH, IBRAHIM MOHAMMED MAHDI - SAUDI ARABIA

Phone +96653337864 • aialmohimeed@imamu.edu.sa • www.imamu.edu.sa/en/Pages/default.aspx

Shaheen

A smart automated solution consists of a thermal drone powered by raspberry pi to solve the problem of finding missing people in distant areas and accelerate the process of finding them alive with less cost and effort.

AL-HAMAD EIMAN ABDULLA - QATAR

Phone +974 66099426 • administration@qsc.org.qa • www.qsc.org.qa

Human-machine Intelligent Optical Touching Interaction Based on Grating Coupling

Real time system that detects fraud activities in phone calls in Arabic language and alerts the user when there is a fraud activity is detected.

ALZAHIRANI IBRAHIM MOHAMMED ABDALLAH - SAUDI ARABIA

Phone +966535223252 • imalsafar@gmail.com • www.uqu.edu.sa/studaff/83391

Hoist tilt blocker

It aims to preserve human life and reduce the material losses that may be caused by the fall of cranes that fall due to various factors such as wind. Every year, approximately 44 workers die because of cranes in the United States, and the material losses cost millions of dollars. This innovation is based on the development of a system that ensures that the balance of the crane is maintained and the system works to protect people and reduce the danger area.

CAMERON DENNIS JZEN MISHA JERRY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Multi-functional guided cane

Multi-functional guided cane has three unique functions : 1. Judge obstacles by ultrasonic wave sensor and tell the blind to turn left or right. 2. The innovative design of the front end of the device can detect the pits under the ground. 3. There is a camera above the multi-functional guide cane.

CHING HENRY - CANADA

Phone +19059609888 • henry@relocching.com • www.relocching.com

Portable Door Security Device

A portable door guard device that installs onto door hinges without the need of any additional tools. Unlike a door chain or swing bar that can be accessed and tampered with from the outside once the door is slightly opened, the device is only accessible from the inside and unreachable to the intruder.

HA JINSEOK - SOUTH KOREA

10's life jacket, Life-chair

The world's first chair cover-type life jacket "life chair" has been made to fit the atmosphere of ship environment with the ergonomic design, meeting the requirements of Solas and ship equipment safety standards.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Smart Prison - Video Analytic Monitoring System

This video analytic solution of Smart Prison enhances effectiveness of movement detection in confined areas. In case of abrupt massive movement or unusual stillness of people, it can automatically detect and identify abnormal incidents at all times. This effective detection tool facilitates early intervention or prevents any potential dangerous acts to save people from injuries.

ISD MECHANICAL ENGINEERING CO., LTD. - CHINESE TAIPEI

Phone +886 956 999 193 • albertchangxuite@gmail.com

Intelligent fire safety equipment IoT management system

An intelligent IoT management system for fire safety equipment, including a fire extinguishing device and a cloud maintenance management server. The fire extinguishing device includes a pressure gauge head and GPS sensor, and a wireless signaling module that is connected to the gauge head by the pressure in the cylinder and sends out a warning when the pressure exceeds the interval. Connect the computer and the cloud, the cloud database can collect the data of the fire extinguishing device, and update the waiting list synchronously.

JAHANTIGH MASOUD, RAHMANI REZA, GHAFOURI MOGHADDAM MOHAMMAD HOSSEIN, MOUSAVI SEYED MOHSEN - IRAN

Phone +98 915 991 6396 • masjahant@gmail.com

Smart Briefcase Carrying Money and Documents on LPWAN Platform

A useful briefcase to carry money and documents and valuable things on LPWAN (low power wide area network) platform with the ability to be tracked, controlled and managed by software from control center. It also comes equipped with an electroshock system to prevent it from being stolen, paint and acid spraying system to destroy confidential documents or to mark money in case of emergency situation.

JSC NIIAS SUBSIDIARY OF JSC RZD - RUSSIA

Phone +7 985 232 97 03 • info@vniias.ru • www.vniias.ru

Method of alerting workers on the haul of rolling stock approaching with work area enclosure

It relates to the field of railway automation for notification of workers on the haul.

KIM SONG YI - SOUTH KOREA

Automatic fire extinguisher providing user convenience

This invention solves the safety pin issue so you can easily remove the pin when holding the handle. Also, it is designed for fire extinguisher that does not damage the luxurious image and interior. Increased demand from consumers who value the importance of the product.

LECHIFFLART INNOVATION / CPI GLOBAL - FRANCE

Phone +33 6 85 43 67 27 • fr.lechiffart@lechiffart.fr • www.lechiffart.com

Ouvrator

The ouvrator, a contactless handle for opening all types of doors, holding stair railings, moving objects, typing keypads, lift floors and many other functions. All without direct contact.

SICHUAN ENERGY INTERNET RESEARCH INSTITUTE, TSINGHUA UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Life cycle management system of intelligent switch cabinet

The Underground facility anti-damage intelligent sign pile is a kind of sign pile that can realize vibration data monitoring and image warning functions. It integrates Internet of Things communication technology, vibration sensor monitoring technology, and AI image recognition technology, and solar photovoltaic technology, to monitor the external force vibration generated around the sign post, with free (less) maintenance, real-time warning, «one-key» alarm, AI image recognition, and beautification of power infrastructure Features.

SOONTORNPIT PICHITPONG - THAILAND

Phone +6687 916 2552 • pichitpong.soo@mahidol.ac.th

Biomedical brainwave detector devices

Biomedical brainwave detector devices and the driving record black box to detect sleepiness and opiates of public bus drivers by using brainwave frequency classification processing use appropriated algorithms to enhance the classification of drowsiness and opiates.»

SOUTHEAST UNIVERSITY-XU QINGSHAN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Non intrusive electric bicycle charging behavior monitoring and warning

This system realizes real time and automatic monitoring and warning of illegal charging behavior of electric bicycles from the grid side, effectively reducing fire accidents caused by electric bicycle charging.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 933 211 488 • mcliou@tpcu.edu.tw

Home safety control system

This work «Home safety Control System» has functions such as «fingerprint recognition», «carbon monoxide detection», «temperature detection», «voice prompt», «speaker warning», «mobile phone remote control», «infrared detection», and «door lock control». In addition to protecting the safety of the occupants and avoiding unfortunate incidents, it can also improve the quality of life..

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 937 532 236 • ztkwo@tpcu.edu.tw

In-Vehicle Safety Warning Device

This In-Vehicle safety warning device is a magnetic toilet paper box that is magnetically attached to the roof in the car. The features are as follows: 1. If the temperature in-vehicle exceeds the preset warning value(35°C) and there is a child or a pet in the car , this warning device will send SOS message to anyone need to know by Facebook or Line via the Internet. 2. When the air quality in the car is not good, it will be displayed on the screen of the device and a warning message will be issued to avoid poor spirits of driver. 3. As shown in item 2, if the air pollution in the car is the initial phenomenon of the car burning, the driver will also be reminded. 4. The temperature, air pollution index and the location of the car can be transmitted to the designated group through the communication platform Facebook or Line via the Internet when the above conditions occur, as the basis for subsequent disposal (such as notify the owner or call the police). 5. This In-Vehicle safety warning device can be integrated with ADAS System to provide more function to keep driver and passenger safe.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 928 605 615 • jmchen@tpcu.edu.tw

Smart fire alert system applied in building

The fire alarm system transmits information to firemen and people trapped in fireplace using LoRa wireless communication technology. Long-range (LoRa) technology provides a comprehensive wireless solution for data acquisition and communication in smart buildings through its superior performance, such as the long-range transmission, low power consumption and strong penetration. Firemen are capable of find the most efficient way to rescue people trapped in the fire place. People trapped in fire place are capable of finding the most secure route to escape from the fire place base one the information provided by the fire alarm system.

YU ZEKAI, LIU JIAYI, LIU HONGJUN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Safety seat for blind plug

The blind plug safety protection seat», it uses the three-dimensional printing to become, specially for the blind and so on special crowd use. The upper layer is pressed down and communicated with the lower layer fixed socket.

CLASS G

IRONMONGERY - DO-IT-YOURSELF

WU SIQI - CHINA

Phone +86 18105152167 • 1444306078@qq.com • www.waiscz.com/web/zh

A 3D surgical mask retainer

A type of 3D surgical mask retainer, which integrated smartphone scanning and 3D printing techniques. With this customized retainer, overall fit factor for surgical masks could meet the fit standard of N95 respirators in China. The lab test results showed the retainer had increased more than 25-fold of overall Fit Factor for surgical masks.

CLASS H

FURNISHING - INTERIOR ARCHITECTURE

ALNEFAIE ABEER, ALOBAIDI LUJAIN, ALAMOUDI MASHAEL, ALMARWANI AMAL - SAUDI ARABIA

Phone +966 800 11 69528 • rashedmohamed@gmail.com • www.kau.edu.sa

Shade Tracker

The shade tracker is a smart umbrella that tracks the sun and moves accordingly to provide the largest amount of shade to the same spot all day long. It makes people's life easier since it protects them from UV lights and hence skin cancer.

KIM DANHA - SOUTH KOREA

Hanger

This is a clothes hanger that helps you fold clothes easily to an A4 size, regardless of the size of your clothes, to help you use closet space efficiently.

PARK CHAN WOOK - SOUTH KOREA

Chair seat board and chair including same

The present invention, 4 divided seats and 2 divided back, is directed to a chair seat board that is ergonomically designed to minimize burden on the waist that may cause pain due to a gravity when a user is seated, and a chair comprising the same.

CLASS I

DOMESTIC SCIENCE - RESTAURANT EQUIPMENT

DR. CHOMANEE JIRAPORN, DR. JUNTARACHAT NIRAMOL AND MR. KATATHIKARNKUL SUPAGONE - THAILAND

Phone +66 814798992 • chomanee_j@yahoo.co.th • mailto:chomanee_j@yahoo.co.th

Digital thermo sensor.

Digital thermo sensor coupled with IoT controller on smartphone. It use is for controlling the concentration of sugar in solution with the application of the colligative property. Its advantages are simple, rapid, precise and inexpensive.

EL TONSI HUSHAM HASSAN MOHAMED HUSSEIN - EGYPT

Phone +201111104790 • tonsigroupfor@gmail.com

Integrated smart healthy and safe cooking pressure oven

The oven consists of 5 parts: the pot, the stove and the oven, that can cook automatically on its own using its own software. The shower of the pot that is designed to give the water (fluid) and indicates its quantity and temperature for cooking. The oven can hold up to 12 bar pressure. It's designed like a puzzle. 5-touch pad checks/ quality of natural food/ junk food/ preserved/ manufactured/ packaging.

JAM HOM CO., LTD. - CHINESE TAIPEI

Phone +886 905 558 622 • service@plainliv.com.tw

Multi-Modularized Water Purifier

The design comes from the ARRAY of BRICKs. Water purification needs multiple combinations of water treatment methods depending on the water quality, just like ARRAY of BRICKs. The water treatment methods have been built into different modules or filter cartridges, such as Polypropylene, Active Carbon, Ultraviolet, Ultra Filtration and Reverse Osmosis etc. The household consumers can then make their own choice of water purifiers simply by the water quality of the area they live, and they can easily add, reduce and replace filter cartridges at any time at any conveniences by their own.

PARK JUNG WON - SOUTH KOREA

Rotary roaster

This serves to turn and stir the ingredients evenly and without burning. can be cooked without a lid. Therefore, it is easy to add ingredients and seasoning while cooking, and we can easily check the cooking.

QINGDAO HAIER REFRIGERATOR CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

The Bimodal Robotic Underwater Inspection System for Hydropower Plants

By utilizing the principle of modified atmosphere fresh-keeping technology, the technology adopts the way of membrane separation and reduction of oxygen, and proactively adjusts the ratio of nitrogen and oxygen in the crisper, to inhibit the respiration of food materials, effectively reduce the loss of nutrients, and prolong the freshness preservation time of food materials.

QINGDAO HAIER REFRIGERATOR CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

MSA oxygen-controlled fresh-keeping technology for refrigerator

The parallel flow refrigeration system integrates the refrigeration components at the bottom to achieve parallel air supply, and the food is frozen but not dried ; Combining with the aluminum tube heater strips for contact defrosting, and a forward heat dissipation system, the refrigerator achieves a new breakthrough in constant-temperature fresh-keeping and energy efficiency.

TAE CHANG ICE.CO.LTD - SOUTH KOREA

Rotary water dispensing nozzle for milling equipment and milling equipment using it

We made and commercialized an ice maker based on a snow maker patent. It is a household/office ice maker that produces a clean ice maker with 13kg of household ice maker.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

Phone +886 986 947 890 • ru5020169@gmail.com

Portable drinking kettle with the structure of simultaneous resonance water-revitalizing machine and sterilizing nano filter

Portable drinking kettle with the structure of simultaneous resonance water-revitalizing machine and sterilizing nano filter. The invention of the portable automatic control raw water filter kettle» is suitable for outdoor activities, which needs to take river water, lake water or generally untreated water source for drinking. We have improved the use of a pneumatic structure in the container to provide filtering. It contains nano silver activated carbon material, sterilization filter, micro mineral and resonance chips in the filter structure. That activates water molecules and allows natural water sources to filter impurities, calcareous, heavy metals, bacteria, and chemical contaminants to meet the standards for drinking directly. Its filter can continuously filter 1800 liters water.

YOU WAN GI - SOUTH KOREA

Faucet Connection Type Directional Control Valve For Easy Detachment

CLASS J

COMMERCIAL, INDUSTRIAL AND OFFICE EQUIPMENT

ALHOGAIL SULAIMAN, ALSAAWI MASHEL, SHAMSAN ZAID - SAUDI ARABIA

Phone +966533337864 • aialmohimeed@imamu.edu.sa • www.imamu.edu.sa/en/Pages/default.aspx

Locking mechanism

Box with a locking mechanism that only opens when the correct RFID tag is used and informs the owner of the material requested inside the box of the access of the box, or if a wrong RFID card is used. It will also inform the owner of the attempt.

ALKHALDI MUTAZ N., ALSHOUMER SALEH F., ALBADRANI HAMOOD A., AND HAJLOONI KHALIL - SAUDI ARABIA

Phone +966533337864 • aialmohimeed@imamu.edu.sa • www.imamu.edu.sa/en/Pages/default.aspx

Robot for welding process

Design and control of an industrial robot for welding process. Forward and inverse Kinematic and Dynamic models have been performed to study the behavior of the robot.

AUTOMOTIVE PLATFORMS AND APPLICATION SYSTEMS R&D CENTRE/ HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 5333 • apas_info@hkpc.org

MiniMover - Autonomous Delivery Mover

MiniMover is an Autonomous Delivery Mover equipped with a sensor suite comprising deep learning technologies and sensor fusion capabilities, using 3D LiDAR, cameras, GPS, inertial measurement unit (IMU) and ultrasonic sensors. MiniMover is smart enough to plan appropriate paths with collision avoidance to static or moving obstacles in dynamic environments, particularly applicable in parks, inside buildings or warehouses, to deliver goods or small packages within short distance in a total autonomous manner. This invention not only speeds up the delivery of small items in manageable distance, but also generates infinite possibilities in sensor technology development for wireless communications.

BLUE PIN (HK) LIMITED - HONG KONG

Phone +852 9168 9000 • gary.leung@bluepin.hk • www.bluepin.hk

Blue Pin (HK) Limited / IoT Micro-location System (IMS) enabled Guest Services Robot (GSR)

A new Guest Services Robot (GSR) that can meet the hotel guest for providing self-serve Check-in / Key Pickup / Checkout service. The solution can provide end-to-end smart hotel service to the guest throughout his/her journey at hotel and also enable hotel to manage all the service robots at the same time efficiently.

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

Phone +852 24686627 • thomaskwok@emsd.gov.hk • www.emsd.gov.hk

Fibre Optic Temperature Sensing System for Predictive Monitoring of Electrical Distribution Network

An inventive system applies fibre optic sensor that is non-destructive and maintenance free component to measure temperatures of the power cable and busbar inside switchboard. This online condition-based maintenance and predictive maintenance approach reduces the potential for inadvertent power outage and hence service interruption in hospitals.

FUDAN UNIVERSITY - CHINA

Phone +86 18621133508 • cxia@fudan.edu.cn • www.fudan.edu.cn

Human Sensing Radar

A system for human multi-modal intelligent sensing and recognition based on the millimeter-wave radar. The system can obtain human body position, breathing rate, heart rate, gestures, and other information without the need for the human body to wear any devices. It can be used for health status monitoring, human activity monitoring, security perimeter monitoring, smart home interface etc.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 15997450253 • zht@mail.hust.edu.cn • <http://imds.aia.hust.edu.cn/info/1080/1189.htm>

Coordinated Multi-robot Agile Assembly Techniques and equipments for 3C Manufacturing

A multi-robot collaborative assembly equipment, which has the virtues of environment perception, high-speed and high-precision positioning, distributed coordination and superb agility, etc. It can handle complex tasks such as collaboratively grasping, inserting and fixing. Therefore, it has taken one substantial step towards flexible and reconfigurable assembly in the industrial community, e.g. 3C manufacturing, electronics and automobile industries.

KHOJA EZDEHAR, ALHARBI LEENA, ALMASRY RINAD, ALQAHTANI SARAH - SAUDI ARABIA

Phone +966 800 11 69528 • rashedmohamed@gmail.com • www.kau.edu.sa

Infection-Free ATM

An invention that allows us to use ATM's without touching it by transferring all processes to our cellphone via smart tripple system of App, NFC reader and QR code

SEO MIYOUNG AND KHIAOMANG KRIANGSAK - THAILAND

Phone +6686 017 0593 • smy750@gmail.com • www.buu.ac.th

The natural rubber Innovation for creative product design

The natural rubber innovation has been developed to increase rubber properties of eastern Thailand, from formulation, product design, and branding design to startup. Innovative rubber materials and potential design capabilities transferred knowledge to entrepreneurs and applied it to extend the new global market.

SHENZHEN CASTLE SECURITY TECH.CO., LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Secured multifunction printer based on SoC chips

Secured multifunction printer based on SoC chips (Key-Area Research and Development Program of Guangdong Province 2019B010138002), aimed to provide a tool to enhance information security for organisations during printing, scanning, copying, and faxing process.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 933 008 653 • lllu@tpcu.edu.tw

The Interactive Display Devices with IoTs

In recent years, the policy of prohibiting the manufacture or use of secondary plastic products is gradually being accepted by the public. Due to the limited resources of the earth and sustainable development, this work is used to achieve the goal of recycling the display devices in a circular economy. This work "The Interactive Display Devices with IoTs" has following functions such as: For user end: 1. Set/Modify display functions of Chinese/English name and title of the researcher, research room location, current status message and QR code message board. 2. Message management and prompt (ring) functions. 3. Upload course schedule, homework, calendar and other functions... 4. Password unlock (keyless) and reset password. 5. IR-based energy saving measures. For visitor end: 1. Browse contents of display devices. 2. Query or download course schedule, homework and calendar. 3. Message function (Interactive). This display device is appropriate for smart offices.

CLASS K

AGRICULTURE - HORTICULTURE - GARDENING

AHT-ONG DUANGDAO - THAILAND

Phone +6681 616 3433 • duangdao.a@chula.ac.th • www.sc.chula.ac.th

Green Guardian coating to preserve freshness of fresh-cut fruits.

Green Guardian, an innovative coating made from nanocellulose, is designed to preserve freshness of fresh-cut fruits and vegetables by using natural ingredients and clean technology. Due to abilities of antimicrobial activity, gas barrier, and moisture retention of Green Guardian, it could increase shelf life of fresh produce at least three times without repeatability of coating.

ATHINUWAT DUSIT - THAILAND

Phone +6696 871 8998 • athinova6@hotmail.com

Smart Automatic Machine for Pathogen-free Seeds and Grains

Smart Automatic Machine for Pathogen-free Seeds and Grains used for seedborne reduction in contaminated economic crop seeds. The innovation consists of hardware and unique automatic program for setting temperature and time in both manual and automatic control panel using multi-technologies with low cost production showed high efficiency in short time, eco-friendly, and widely accepted.

BEIJING RESEARCH CENTER FOR INFORMATION TECHNOLOGY IN AGRICULTURE - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Bi-directional Horizontal Axial Tidal Current Energy Generation Unit

The CropLidar achieves high-precision synchronous collection and overlay analysis of the plant three-dimensional laser point cloud, spectrum, thermal infrared and high-resolution images in a unified space coordinate system, and provide efficient and low-cost phenotypic big data collection and analysis solutions for crop breeding and agricultural monitoring.

BIETRIX ROBERT - FRANCE

Phone +33 6 03 57 25 67 • robert.bietrix@free.fr

Leaf picker

Gardening tool for picking up dead leaves, grass or rubbish.

CHINA AGRICULTURAL UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

The key technologies and smart equipments for precision measurement and control of industrialized aquaponics system (Smart_Aquaponics)

This project has broken through the precision sensing technology of key parameters such as water quality, nutrition, fish and vegetable growth in the industrialized aquaponics system, constructed the collaborative control model of optimal growth of fish and vegetable and the multi energy complementary and energy consumption optimization control model

CHO JAEBIN - SOUTH KOREA

Plant growing system

The first invention relates to an optical semiconductor lighting device capable of achieving lighter weight, compactness and better heat dissipation performance. The second and third relate to an apparatus and system capable of cultivating a large number of plants efficiently in a limited space.»

JIANMAO BIOTECH CO., LTD. - CHINESE TAIPEI

Phone +886 916 121 486 • peter.hsu777@hotmail.com

Antioxidant composition for lipstick

Stop the virus and bacteria from the mouth and create an invisible shield from your lipstick. This invention is additive to antioxidant composition in lipstick, contain(limonin concentrate astaxanthin), the antioxidant composition may include limonin concentrate, It contains various ingredients such as limonin, nomilin, triterpene with furan ring and flavonoid, It is mainly isolated from lemon seeds.Limonin concentrate has a variety of biological activities, such as antioxidant activity, Anti-virus and Anti-bacteria activity. When the lipstick composition is applied to the lips of consumers, it can not only change the color of the lips, but also change the color of the lips, It can also improve the skin condition of the lips at the same time, which is the effect of the present invention.

LAM SUNNY - HONG KONG

Phone +852 69099264 • sancheslam@gmail.com • N/A

Solar Wave Luminescent Grid

Innovative farming tool for sustainable agriculture by optimizing natural light resources . Its patented solar grid converts underused colors sunlight to ideal light conditions for increased photosynthetic efficiency by 20%. It is the 1st design to deliver light-induced simulation underground to the photoreceptors in different root zones where induce chloroplast development and enhances crop yields.

MOHAMAD MARDAWANI - MALAYSIA

Phone +60137551944 • mardawani.m@umk.edu.my • http://fbkt.umk.edu.my

K-BioZyme : Integrated Design of Kenaf Processing and Recovery System

This invention was developed for the processing of kenaf bast fiber as well as recovery system. This system can reduce the processing time from 21 days of conventional system to shorter processing time of 24 hours that can produce premium quality of fiber for the application in textile industry. This integrated system was developed at kenaf processing center using the concept of in-situ processing.

insertclass K

NANJING AGRICULTURAL UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Multi-rotor wing unmanned aerial vehicle platform-based crop growth monitoring method and device

Multi-rotor wing unmanned aerial vehicle platform-based crop growth monitoring method and device. Including a multi-rotor unmanned aerial vehicle, a payload, a sensor connection support, and a ground receiver controller.

PIPATPANUKUL KAMOL - THAILAND

Phone +6681 655 7621 • kamol.p@smartvetgroup.com • www.smartvetgroup.com

Ionic Copper Nanoparticles

The development of high stability of active cationic from natural mineral in the nanometer size range to use for control and reduce bacterial, viral contamination in water and animal feed esp. Salmonella, E.coli, and African Swine Fever.

SAIZ CARLOS - FRANCE

Phone +33 6 12 73 28 39 • carlos.saiz@outlook.fr

TWIST

TWIST is an electro repulsive belt, which protects fruit trees against crawling insects.

SHUN TAK FRATERNAL ASSOCIATION YUNG YAU COLLEGE - HONG KONG

Phone +852 2792 3639 • ivywong@newgen.org.hk

Super Tree Glue

A 4-in-1 treatment kit composed of a Super Tree-Glue and a carbon fiber cloth has been developed for the tree defects for the protection, wound filing, long-term drugs release, and physical reinforcement simultaneously.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13020009449 • xyzhang@tsinghua.edu.cn • www.tsinghua.edu.cn

High-precision autonomous cognitive mobile platform based on multi-modal perception

The high-precision autonomous cognitive mobile platform based on multi-modal perception is a novel platform invented for precision agriculture. The platform takes full advantages of multi-sensor data fusion and mobile platform, eliminates the need for any retrofitting of greenhouses, and uploads collected data to the cloud computing platform via 5G communication modules for post-analysis.

YANBIN HUA, XUEJUN CHEN, LICHUN QUAN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A Novel Portable Successively-Delivering Fruit Bagging Device

This invention adopts the mechanisms of 'overrunning clutch' and 'self-locking between nut and bolt' to achieve the special paper bags being progressively delivered by a screwed pipe and slid out individually.

YANG XIUQI, QIN MINGXI, WANG PUYUAN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

IoT and UAV-Based Intelligent Telemetry System

To solve some problems of current agricultural planting, an IoT and UAV-based intelligent telemetry system (IUTS) is proposed. Utilizing temperature, humidity and conductivity sensor of IoT system, IUTS can test soil temperature, relative humidity, soil nutrient, conductivity, salinity, basicity and other physical parameters.

CLASS L

CLOTHING - TEXTILES - MACHINES AND ACCESSORIES

BARRI SARA, ALGHAMDI GHADEH, ALSHEHRI FATMAH - SAUDI ARABIA

Phone +966 800 11 69528 • rashedmohamed@gmail.com • www.kau.edu.sa

Lizarov Knee Stabilizer Cover Design

Two new clothe designs that cover the Lizarov knee stabilizer to allow patients to wear without help and look nice both indoors and outdoors and to avoid the uncomfortable appearance of the device.

CHINGSUNGOEN ARTIT - THAILAND

Phone +6689 711 0157 • artit.c@msu.ac.th • https://inter.msu.ac.th/

Multihole atmospheric pressure plasma jet (Multihole-APPJ)

The multihole atmospheric pressure plasma jet (Multihole-APPJ) was developed for surface modification such as cleaning, increasing of surface free energy, adhesion of textile, and plasma-activated water (PAW). Moreover, the multihole-APPJ can be installed with a seed conveyor belt to produce large-area and continuous treatment for improving seed germination and growth.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

Flexible Self-powered Insole for LED Shoes

A flexible lightweight nanogenerator shoe insole utilizing piezoelectric and triboelectric effect for enhanced self-power generation is disclosed. Without using battery, it can light up tens of SMD LEDs with long durability in a wide force range. It is easily assembled with various designs of shoes product as self-powered LED shoes for night safety application.

SINO INNOVATION LABORATORY LIMITED - HONG KONG

Phone +852 2132 9101 • innolab@sino.com • www.sinoinnolab.com

CoolJet

CoolJet is a wearable air conditioner designed for the use in a working environment without ventilation and power source. This double-layer apparel, fitted with a temperature modulating device, comprises of thermoelectric cooler, air distribution system and cooling system. It allows cool air to flow through the entire jacket between the layers while heat is dissipated to the ambient.

THE HONG KONG RESEARCH INSTITUTE OF TEXTILES AND APPAREL - HONG KONG

Phone +852 2627 0180 • info@khrita.com • www.hkrita.com

Cultivation of Aniline-degrading Bacteria to Enhance Textile Dyeing Wastewater Treatment

An integration of taxonomy analysis and biodegradation performance to cultivate a specialised aniline-degrading bacteria with enhanced textile dyeing wastewater treatment performance.

A Novel Separation Method of Disentangled Textile Fibres

An environmentally friendly triboelectric system to separate valuable disentangled protein fibres for upcycling.

THE HONG KONG RESEARCH INSTITUTE OF TEXTILES AND APPAREL - HONG KONG

Phone +852 2627 0180 • info@khrita.com • www.hkrita.com

Sleeping Comfort System for Identification of Comfort Zone

An evaluation system for identification of comfort zone in terms of thermal, touch and biomechanical comfort for bedding.

Soft Electrochromic Yarns with Low Operating Voltage

An integration of electrochromic materials into soft conductive yarns to develop electrochromic textile display capable of achieving colour-change upon application of low operating voltage.

Bionic Functional Footwear for Pregnant Women

To relieve foot pain and prevent arch drop through evidence-based clinical survey, ergonomic and bionic design, and advanced 3D hybrid one-body weft knitting technology.

TMAX STRATEGY & MARKETING CO. - CHINESE TAIPEI

Phone +886 933 003 436 • tmaxmark@gmail.com

Beauty Sleep NO FIR Mattress

Beauty Sleep FIR Mattress can help to generate Nitric Oxide as well as blood oxygen within our body. Beauty Sleep was tested by Taiwan National Labs and reported to be able to increase up to 3times more Nitric Oxide as well as 2 times more Blood Oxygen than ordinary FIR users. Won Nobel Medical Prize in 1998, Nitric Oxide is the key medical ingredient proved to be able to cure heart disease, protect tissues from damage, also act as a neurotransmitter to help sleep as well as nerve calmer, decrease inflammation and increase immunity ability.

CLASS M

MEDICINE - SURGERY - HYGIENE - ORTHOPAEDICS - MATERIAL FOR THE HANDICAPPED

ALRABIAH MAHA, BEN YAHIA FAYCAL, AL-DOSARI ASMA, BOUZEGZA FIRDAOUS, AL-DOSSARY MAI AND AL-HAMDAN NORAH - SAUDI ARABIA

Phone +966533337864 • aialmohimeed@imamu.edu.sa • www.imamu.edu.sa/en/Pages/default.aspx
Da'em

An electrical wheelchair that allows quadriplegic children to control the movement of the wheelchair and stand up on their own using brain signals generated by facial expressions. When the quadriplegic mimics certain facial expressions, the standing wheelchair moves accordingly.

ALRIFAI ALYAA, NADHRAH HEBAB, MASOUDI LUJAIN, SAIRAFI WED - SAUDI ARABIA

Phone +966 800 11 69528 • rashedmohamed@gmail.com • www.kau.edu.sa

Rosuvastatin Flexible Tablets for Improved Bioavailability

We developed fast dissolving rosuvastatin tablets loaded with drug chitosomes nanoparticles to improve the bioavailability and maximize the anti-hyperlipidemic and anti-oxidant activities

ANSARI NIUSHA, GALESHI SEDIGHEH - IRAN

Phone +98 912 433 8684 • niusha.ansari@gmail.com

Smart Health Protective Headband.

Today, many people use computer for a long time to do their works and endanger their health by not following the correct principles when working. The designed headband with features such as checking eye distance from the monitor, degree of neck flexion, measuring heart rate, checking the duration of immobility, checking temperature, sending important messages by voice, etc. can be significantly reduce the consequences and damages of working with a computer.

ATASHI HESAM ADIN, GHORANI SEYYED MOJTABA - IRAN

Phone +98 937 650 6313 • hero4P@gmail.com

Cleaning and disinfecting device of various equipment for use in public places with the ability to eliminate the Coronavirus (COVID-19)

The cleaning and disinfecting device of various equipment has the ability to kill pathogenic microbes, especially the corona virus on all solid object. This device is designed in such way that it can be used in all place including hospitals, mosques, public places, school etc.

BAGHDADI RAGAD - SAUDI ARABIA

Phone +966565507032 • Ragadbaghdadi999@gmail.com • www.uqu.edu.sa/studaff/83391

Smart epidural tube

A machine with a tube that combines the most essential tools for epidural anesthesia. The tube will perform epidural anesthesia automatically and safely.

BAJURI MOHD YAZID BIN - MALAYSIA

Phone +60172771000 • ezeds007@yahoo.com.my

MyB Prosthetic Limb

A transtibial prosthetic limb, which is user-friendly, variety functionality, comfortable and cost effective prosthetic leg. It is life-changing as it allows the patient to bend the ankle as compared to conventional prosthetics, allowing the patient to do activities that require squatting, prostration and sitting on the floor.

BAMEER RANA, ALHARBI NOURAH, GEDDAN SHAHAD - SAUDI ARABIA

Phone +966 800 11 69528 • rashedmohamed@gmail.com • www.kau.edu.sa

Sickle Cell Anaemia Estimator

A web-based system that helps health professionals estimate the severity of sickle cell disease (SCD) using an artificial intelligence (AI) model to predict a patient's severity quickly.

BUKHARI OHUD ABDULLAH - SAUDI ARABIA

Phone +966536359591 • Ohoud9774@gmail.com • www.uqu.edu.sa/studaff/83391

Smart posture corrector chair

A chair consisting of 4 main components 1. Tilting sensor 2. Energy source 3. vibration alarm system 4. control circuit. The system provides vibration alarm when the sensor detects an unhealthy sitting angle to warn the user to correct his or her wrong posture. The smart chair is linked to an app that helps improve user experience.

CARMEL PAK U SECONDARY SCHOOL - HONG KONG

Phone +852 2792 3639 • ivywong@newgen.org.hk • www.cpu.edu.hk

Bio-bandages with bio-dressings

It is a biodegradable bandage with a biodegradable dressing which are both made of crab shells. The bio-degradable crab dressing is haemostatic due to the presence of chitin and chitosan in crab shells, anti-microbial due to presence of chitosan and adhesive. The biodegradable crab bandage is water-proof.

CHAIROJRAT VARINTHON - THAILAND

Phone +6698 756 6499 • varinthon.ct@gmail.com • www.avsinnovation.com

CellEnhanz

Technological platform for peptide - directed transdermal delivery of macromolecule (therapeutic protein for chronic kidney disease (CKD)). The delivery of protein helps CKD patients to improve their quality of life after hemodialysis (refresh and not exhausted). Due to the limitation of CKD patients for consuming food supplements, this technology would be the alternative for the choosing food supplement that benefits to their conditions.

CHANGZHOU HIGH-TECH RESEARCH INSTITUTE OF NANJING UNIVERSITY - CHINA

Phone +86 17714382169 • zchua@nju.edu.cn • www.njucz.com

AISVAX, a novel oral COVID-19 vaccine

A novel oral COVID-19 vaccine, AISVAX. It has three technical points : 1. Using a controllable system to express immune-related antigen. 2. Using patented strains to secrete proteins ; 3. Combination of strains enhances the effect of immunity. AISVAX has been shown to be effective, affordable cost and orally available which have greatly expanded the scope of its use.

CHOBPENTHAI THANAPON - THAILAND

Phone +6699 419 1162 • thanapon.cho@pccms.ac.th • medical.pccms.ac.th

Triple T Plate System

The innovative sliding distal radius plate (triple T plate) can adjust length by sliding proximal part. No need to prepare various length of plate when do orthopaedic surgery and easy to choose hole for screw fixation of the bone. If the bone have to use long plate for fixation juste slide.

CHRISTY LIU, HUANG GUANZHE - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Intelligent bed for children with myasthenia

which can not only assist children with muscle weakness to adjust their body posture regularly, but also includes a series of rehabilitation treatment methods that can achieve the functions of raising the back, bending the legs, and turning slightly.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/cto

Magnetic Microrobotic System for Precise Cell Delivery in Vivo

This invention is a system of degradable magnet-driven microrobots carrying cells with a remote electromagnetic coil actuator and a photoacoustic image-guided system to achieve target delivery of cells for precision cell therapy.

Neural Motor prosthesis Prototype for the Restoration of Motor Function in Spinocerebellar Ataxia

We have developed a real-time field-programmable gate array (FPGA)-based closed-loop cerebellum stimulator prototype to detect and restore abnormal gait cycle based on symptomatic electromyography of muscles in spinocerebellar ataxia (SCA). FPGA system can be used for the development of compact low power CMOS chip.

Development of new generation anti-metastasis drugs based on endosomal trafficking

A number of endosomal trafficking inhibitors, e.g. 6J-1 and 6J-2, synthesized by 6J Biotech, effectively inhibit tumor progression and metastasis in various experimental mouse models with little in vitro and in vivo toxicity. They also promote anti-cancer immunity by comprising the endolysosomal trafficking of PD-L1. They are broad-spectrum anticancer oral drugs that can participate in the combination therapy.

A Microfluidic Biosensing System for Effective Cancer Diagnostic and Screening

Advanced portable microfluidic apparatus that captures target exosomes and allows detection by plasmonic biosensor for fast, high-sensitivity, and low-cost cancer screening.

Electronic Cane Grip Instrumented with Thermal Haptic Feedback

A cane grip for the visually impaired people which can be programmed for notifications from a connected smartphone or nearby by surrounding devices. The device can output thermal feedback (hot and cold) with distinct intensities and patterns (predetermined by the users) with respect to the signals received from the external wireless devices.

CYTOMICS LIMITED - HONG KONG

Phone +85251828230 • Cytomics.hk@gmail.com • http://www.cytomics.com.cn/en/home/

Personalised vaccination with Direct B cell assay

By the end of 1 week after vaccination, this simple blood test will tell whether it will work for that person. Classical method of vaccine response monitoring will take 1 month. Simple and early results enable unprecedented new practice of personalised vaccination amid the ongoing COVID pandemic.

DALIAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 13164527256 • sxg@dlut.edu.cn • www.dlut.edu.cn

A digital twin paradigm for human lumbar spine

The invention is a method for constructing a digital twin of the human lumbar vertebrae based on Unity3D and Steam VR, which combines motion capture technology, inverse kinematics, finite element method and artificial intelligence (AI) model to predict biomechanical property of real lumbar in real time.

DATO' DR. SIEW KUANG CHOONG@ SIOW KUANG LING - MALAYSIA

Phone +60197799988 • siewkc@gmail.com • www.mediglobal.com.my

CIRCUMSTAR TM-1 : New generation of the world's fastest, safest, low cost circumcision surgery kit

An improved version of the award winning circumcision device, allowing error-free circumcision surgery in an industry leading to one to two minutes, bypassing expensive laser surgery or technical expertise. A clamp device allows patient to return to normal life immediately, such as swimming.

ELKOMY MAHMOUD ELKOTP ABDELMAABOUD - EGYPT

Phone +201140865590 • mahmoudelkomy1973@gmail.com

Early Medical Diagnosis Robot by AI based on big data CIRA»

A medical and health care robot for early medical diagnosis by artificial intelligence based on data base and big data. The robot diagnoses a wide range of diseases through algorithms that analyze the apparent symptoms of the patient and takes a PCR swabs and measures some vital functions from a distance of meters. The robot works autonomously and is controlled through IOT through overall the world.»

ELSABAHY MAHMOUD FAHMY ALI - EGYPT

Phone +201000607466 • mahmoud.elsabahy@buc.edu.eg • www.buc.edu.eg

Oral Insulin : Effective and Long-acting

An oral platform loaded with antidiabetic peptides (e.g. insulin) that provides prolonged control of blood glucose—up to one week - after a single oral dose. At the intestinal environment, the nanotechnology-based 3d-rolled platform unrolls and adheres to the intestinal mucosa and allows insulin transport to blood stream in a sustained fashion over a week.

EL-SEBAEI FATMA SAMIR ABD EL-SALAM - EGYPT

Phone +201007959631 • fatma.samir@gmail.com

Long lasting biodegradable polymer based in-situ forming implant for treatment of bone injuries

Injectable in-situ forming biodegradable implant. Characterized by its low burst release effect. Useful in treatment of bone injuries without surgery.

ESKANDARI MAHSA - IRAN

Phone +98 912 472 7518 • mahsaeskandari72.me@gmail.com

Physiotherapy Device to Treat Mechanical Pains

This device is designed for physiotherapy and mechanical pains management. The superiority of this system over similar specimens has three different therapeutic functions including Transcutaneous Electrical Nerve Stimulator (TENS), Vibration and Heat, and the ability to adjust the intensity, type and duration of treatment in this device is defined. Another feature of this system is the ability to review and modify the performance of the device remotely by a physician. In this way, only by entering the specific IP of each device and entering the page related to it, the doctor gains the necessary access to information and can control and modify the operation of the device. All the desired values are entered in the application installed on the mobile phone and these values are sent to the device in the form of understandable commands and the device starts working.

FAYE ADAMA - SENEGAL

Phone +221 774 301 485 • adatouba2@gmail.com

Automatic device for measuring the blood sedimentation rate

It is a bench-top laboratory device that is used to measure the rate blood sedimentation. The device is a monobloc automatic, bi-functional, and easy to operate.

FELEMBAN JEEHAD MANSOUR - SAUDI ARABIA

Phone +966565707233 • Jeehad-1-@hotmail.com • www.uqu.edu.sa/studaff/83391

Portable therapeutic heat stroke unit

A portable therapeutic heat stroke unite easy to utilize under different circumstances and can be set up in a short period of time around 2 - 5 min that is used as a rapid response to save patient life from the complications of heat stroke. It includes different techniques such as liquid nitrogen and water spray fan to decrease the elevated core body temperature.

FUANGROD TODSAPORN - THAILAND

Phone +6661 476 9992 • todsaporn.fua@pccms.ac.th • medical.pccms.ac.th

Double Dot QA

Double Dot QA : a high precision and automated gantry angle quality assurance tool for medical linear accelerator. This new sophisticated equipment and software provide comprehensive gantry angle tests to ensure the delivered radiation beam hits the target of tumor of cancer patient with high accuracy.

FUDAN UNIVERSITY - CHINA

Phone +86 13916750352 • gdyl@cftig.com • www.charmwin.net

A Red LED Therapeutic Instrument for Striae Atrophicae Treatment

A therapeutic instrument implementing red light emitting from LEDs. It is a painless, safe, convenient and wearable phototherapy instrument for rejuvenating and repairing the damaged collagen and elastin fiber of the skin. It can deliver red light with high power density under a comfortable temperature. Clinical experiments conducted by volunteers under the guidance of dermatologists have already confirmed its effectiveness in China.

FUDAN UNIVERSITY - CHINA

Phone +86 15000645876 • lul@fudan.edu.cn • https://jianglulab.fudan.edu.cn/

JB protein for cervical cancer/AIDS prevention

JB protein, an anhydride-modified bovine γ -lactoglobulin, is highly effective and specific in inhibiting infection by HPV and HIV, the pathogens causing cervical cancer and AIDS, respectively. JB protein-containing gel (JB-Gel) and lubricant (JB-Lubricant) were approved by China FDA (NMPA) for topical application to treat high-risk HPV infection and blocking HIV/HPV sexual transmission, thereby preventing the occurrence of cervical cancer and AIDS. It is safe for use as it has no effect on immune system and does not enter blood circulation.

FUJIAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Gluknight—the pioneer of noninvasive blood glucose monitoring technology

The invention can detect trace amount of glucose and the sensitivity is about 250 times higher than the commercial blood glucose meters. The working mechanism of the detector is based on an electrochemical process based on nano copper oxide whisker arrays.

GALESHI SEDIGHEH, ANSARI NIUSHA - IRAN

Phone +98 911 991 8075 • nazaningaleshi@yahoo.com

Specific Night Guard

Usually many of people clench and grind teeth when they sleep and this behavior hurt their teeth and also make headache and jaw pain. Mechanism of this guard aware you to measure this pressure between times you use this guard then if you follow this data and prevent the bruxism reason, you can lose or control this pressure.

GREEN ENERGY NANO TECHNOLOGY CO., LTD - CHINESE TAIPEI

Phone +886 918 009 531 • 5688@greene.com.tw

GreenE Bio-Stamina MPF-tech Circulation-Aid Blanket

Clinical proof for circulation enhancement had published in international journals: In clinical tests regarding normal person and diabetics, the blanket promotes blood flow volume by 43% and 24% respectively. Purified bio-band far-infrared for excellent bio-effects: 91% of F-IR emission occurs wavelength of 4–14 μm , which helps the cell-resonance thermal effect and the liquidity effect by de-bonding water micelle. Outstanding cell proliferation and skin smoothness: A ISO 10993-5 test reports natural cell proliferation by 22%. Another skin test reveals roughness improvement reaching 29%. High safety, hygiene, durability, and convenience: Electricity free, radiation free, 150-time washing and 140°C steaming durable, and all season use with a cotton side and the other fleece one. Textile made of thermal-insulation and F-IR generating fiber: The hallow fiber, which drawn from F-IR energy ball implanted molecular-scale and reagent-grade precious-metal Ge/Ti/ π formula and sealed by Si polymer, issues light weight, thermal insulation, and zero loss of bio-band far-infrared energy for life-time use.

GreenE Bio-Stamina MPF-tech Pain Relief Tape

USA Clinical proof of circulation benefiting pain relief: USA clinical test reports that the tape increases blood flow-speed near 22% which benefits the removal of lactic acid and hematic acid. Not only pain relief but also fatigue ease during exercise: A bicycling electromyography test reveals less muscular-strength regression, muscle stretching and torque, which indicates less fatigue and better injury prevention during exercise. No medicine, best stretch for use and long life: This medicine-free, 4-way stretching to 192–230% (3 times ahead competitor), and medical-level tape can be patched for 36 hours. Purified bio-band far-infrared for pain-relief: 93% of F-IR emission occurs wavelength of 2–22 μm , which helps the cell-resonance thermal effect and the liquidity effect by de-bonding water micelle, and boosts circulation for pain relief. A tape made of F-IR generating fiber: The fiber is drawn from energy ball implanted molecular-scale and reagent-grade precious-metal Ge/Ti/ π formula to generate bio-band far-infrared.»

HAJZEINALI SAHAR - IRAN

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Face Massager Mask Special For Bell's Palsy

Bell's palsy causes sudden, temporary weakness in your facial muscles. To accelerate the treatment process, we need special types of massage. This facial massager, contains a main engine and a few arms that are moveable like a puzzle. Massager are embedded in the arms which massage the paralysed facial parts to the outside of the face. Around the ear, lips, nose and eyebrow, considered to be sensitive parts of the human body, the rotary massagers are embedded. In these arms, vibrators are embedded to stimulate the nerve fibers. In the addition, since the cold is an enemy of Bell's Palsy, this mask transfers heat to face which relieves swell and pain.

HASHEMI FATEMEH - IRAN

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A Smart Bracelet For the Blind

A smart bracelet with audio playback capability and equipped with a map application. This bracelet is such that at the same time that the software starts talking (for example, 1 meter to the right), the sensors that are created on the bracelet start. This invention is a completely smart bracelet that is sensitive to voice commands and reacts according to voice commands and can identify obstacles in front of their path like the nerves of the blind. And it works through the net and has the ability to connect to car applications, lipstick, etc.

HEFEI CAS ION MEDICAL AND TECHNICAL DEVICES CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

The Plasma Dermatologic Therapy System

Plasma Dermatologic Therapy System ionizes nitrogen and oxygen in air with high-voltage electrode to generate plasma for inactivation of pathogenic microorganisms, promotion of cell proliferation and acceleration of blood coagulation to treat dermatoses and chronic wounds caused by fungi.

The compact Proton Therapy System with superconducting cyclotron

The compact Proton Therapy System with superconducting cyclotron, is designed for targeted treatment of tumor. Efficacy of proton therapy exceeds 95%, and five-year survival rate reaches to 80%.

HEIKAL OLA AHMED - EGYPT

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Spray-dried green rice bran enzyme-assisted extract for healthy aging

Stabilized Egyptian rice bran extract was proved, through a number of thesis under my supervision and publications (my team and German team), to have potential health benefits for brain nerve cells protection from Alzheimer's disease. In this invention, rice bran is extracted with enzyme assistance by water (green technology). The extract is spray dried and formulated into ready to use sachets.

HELAL AMR - EGYPT

Phone +201002100429 • dr.amrhelal1@gmail.com • www.healthtech-eg.com.

Nano Essential Oils' Blend for Mouth and Throat Protection and Refreshment

Some Essential oils (Thyme, Eucalyptus, Peppermint, and lemongrass) are reported to have broad-spectrum anti-microbial, anti-viral activities. In this invention, the enzyme-assisted extraction of these herbs was carried out. These oils were blended, produced in, nano- form, then formulated into final dosage forms ; nazal and mouth miconized spray as well as lozenges.

HONG KONG BAPTIST UNIVERSITY - HONG KONG

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Therapeutic inhibitor for Epstein-Barr virus (EBV)-associated cancers with responsive optical imaging function

EBV nuclear antigen 1 (EBNA1) is the only viral protein expressed and maintain the survival in all EBV-infected cancer cells. Our invention specifically targets and labels the EBNA1 and provides a safe and effective way for treatment and imaging.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Smart Protective Shoe for Bunion Surgery Recovery

The Smart Protective Shoe is designed to replace traditional plaster cast worn by patient after bunion surgery. The strength of this innovation rests upon the core structure of the shoe which is equipped with dynamic compression system to provide rigid support to the foot during walking and standing. It also accelerates recovery after foot surgery by fixing the afflicted part in a proper position.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 13971151299 • jinzhao617@mail.hust.edu.cn • http://english.hust.edu.cn

BRAVO Twist smart stabilizing spoon

An AI integrated robotics device to help patients with hand tremor eat independently and to restore their self-confidence while generate quantitative data for treatment optimization.

HUSAIN SALINA - MALAYSIA

Phone +60167775732 • drsalina_h@ukm.edu.my

Rig-s : a one-stop portable automated device for endoscope

A one stop portable medical endoscope cleaning and storage integrated with : An automated sterilising unit with in-built timer and alarm. A drying unit with in-built warmer plate.

INSTITUTE OF ACOUSTICS, SCHOOL OF PHYSICS, NANJING UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Portable ultrasound image-guided therapeutic device

Based on multi-beam phase array technology and time interleaving duplex coordinated strategy, a portable ultrasound image-guided therapeutic device was developed for safer and more effective precise therapy.

INSTITUTE OF AUTOMATION, CHINESE ACADEMY OF SCIENCES - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Full-cycle lower limb rehabilitation robot based on enhancement of synergistic neural engagement

An enhancement technology for neural synergic participation, based on human motion intention recognition and multiple sensory feedbacks, has been proposed and constructed to improve the rehabilitation effects.

JOHARJI LANA, ALSHARIF ALJOHARA, ALAMOUDI HANEEN - SAUDI ARABIA

Phone +966 800 11 69528 • rashedmohamed@gmail.com • www.kau.edu.sa

Here, Although There (HAT)

The HAT system includes a wireless bi-directional feedback between an adaptive skin device that recreates the patient's skin physical properties including curvature, moisture, and temperature and a patient device applied to the patients' skin that includes force, moisture, and temperature sensors.

KAOTHANTHONG NATSUDA - THAILAND

Phone +66627614398 • natsuda@siit.tu.ac.th • www.siit.tu.ac.th/personnel.php?id=211

Automatic Thrombus Localization System On NCCT For AIS Stroke Patient (Middle Cerebral Artery)

An automatic thrombus localization system on non-contrast computerized tomography (ncCT) for Acute Ischemic Stroke (AIS) patient in middle cerebral artery (MCA) is a computer software. It accepts an ncCT image slice as an input. The thrombus, a clot in a blood vessel, is automatically located using sylvain and circle of willis as references. The challenge is to find a very small region (thrombus) in an image.

KAOTHANTHONG NATSUSA - THAILAND

Phone +6662 761 4398 • natsuda@siit.tu.ac.th • <https://www.siit.tu.ac.th/personnel.php?id=211>

Prescreening System for Plateau Iris Detection using Optical Coherence Tomography (OCT) Image

Prescreening System for Plateau Iris Detection using Optical Coherence Tomography (OCT) Image is a program that can access through API. It facilitates daily routine by accepting an AS-OCT image of each quadrant as an input. Our system can separate non-plateau iris and plateau iris from an input AS-OCT image. The performance of our model is better than the model without using the mapping technique.

KHAMIS ABDULRAHMAN SALEH - QATAR

Phone +974 66099426 • administration@qsc.org.qa • www.qsc.org.qa

PAPR

It is a Power Air Purifying Respirator (PAPR) is lightweight portable invention and has a long battery life . Also, it has three airflow speed and antifog hood shield

KHORI VAHID, AMIRIANI TAGHI, GHANDIAN ZANJAN MAZIAR, GHARGHI MARYAM, TAJALDINI MAHBOUBEH, CHANGIZI SHIMA - IRAN

Phone +98 911 171 3952 • vahid.khori@gmail.com

A semi-solid sterile product producing apparatus equipped with a software application

An apparatus to produce rapidly and in-situ a sterile and disinfecting semi-solid product equipped with an application is developed such that an alcohol cartridge of the apparatus is designed such that to prevents an evaporation of alcohol. The apparatus has an ability to produce the sterile and disinfecting semi-solid products according to the requirements of each individual and considering the skin allergy of the individual in which an appropriate alcohol content for the disinfecting property of the produced product is used. In addition, the apparatus is capable of detecting an impurity in alcohol, such as acetone and methanol, and remove these impurities before transferring alcohol to a final mixing container.

KOLN 3D TECHNOLOGY (MEDICAL) LIMITED - HONG KONG

Phone +852 9348 5265 • enquiry@koln3d-tech.com • www.medical.koln3d-tech.com

Omni-Clamp

Omni-Clamp is for clamping bones in orthopaedic surgeries. By using Omni-Clamp, surgeons can use nails to fix broken bones and adjust the distance between clamps through actuator easily and accurately, thus fix bones properly and avoid malposition during surgery.

LIANGYUAN CHEN, YARU YANG, MINGYAO LIU - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

An intelligent fever cooling apparatus

An intelligent fever cooling apparatus has the following three unique functions. 1. Real time temperature measurement.2. Automatic cooling function.3. High temperature alarm function. When the child's temperature is too high, the mobile application will automatically alarm to remind parents to take new measures to avoid further harm to the fevered child.

LIVZON GROUP SICHUAN GUANGDA PHARMACEUTICAL CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Innovative technology of a TCM product, Anti-viral Granule against Emerging Infectious Diseases

A series of in vitro and in vivo the anti-virus profiles of a TCM formula, namely Kangbingdu granule, in pandemic H5N1, H7N9 avian virus and A/H1N1 swine virus, as well as Ev71 virus and SARS-CoV-2 which caused outbreaks in many regions in China in the last ten years.

LIZON GROUP LIMIN PHARMACEUTICAL FACTORY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Innovative technology of TCM product for improving the life quality of cancer patients

This project carries out a technical innovation research of Shenqi Fuzheng Injection, a TCM product, in the immunoregulation treatment of advanced cancer patients.

MAKERS VIEW CO., LTD - SOUTH KOREA

Cosmetic composition for skin wound healing and accelerating skin cell regeneration containing silk fibroin and mulberry leaf extracts

Cosmeceutical product that contains silk fibroin as its main ingredient to treat skin damage and promote skin regeneration. 1. Main function : Strengthen damaged skin barrier/improvement of skin texture/skin soothing 2. Patent technology : skin wound improvement and skin regeneration promotion

NAJIGIVI SHIVA, MIRMOTALLEBI SEYEDAHMADREZA - IRAN

Phone +98 912 575 7030 • najigivi@yahoo.com

Smart, Alarming and Controlling Shoes to Prevent Formation of Diabetic Foot Ulcers.

Smart, alarming and controlling shoes to prevent formation of diabetic foot ulcers. This kind of shoes can control the volume of blood at foots by sensitive magnetic sensors and alarm by tree lights to patients when volume of blood passed the maximum normal volume in foots. On the other hand, the shoes prevent foot ulcers formation and alarming the patients when formation is near and prevents painful ulcer ache.

NANJING AUDIT UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A Deep Fusion Facial Paralysis Assessment System

A deep fusion facial paralysis assessment system is designed. 1) A facial palsy landmark extractor is especially trained 2) Texture features are employed and both global and local facial feedback is provided.

NANJING UNIVERSITY - CHINA

Phone +86 13405808752 • dechenjiang@nju.edu.cn • https://chem.nju.edu.cn/jdc_en/list.htm

Single cell activity analyzer

The "single cell activity analyzer" is invented to quantitatively measure the activity of enzymes in single living cells for the evaluation of cellular activity. Since the reagents are accurately delivered into single cell using a patented electrochemical injection approach, the quantitative measurement of the enzyme activity is achieved at the first time that has been a long-lasting question in the clinic study.

PISEK POONSAK, SURAKULPAPA PALAKORN - THAILAND

Phone +6685 005 1103 • poonsak@kku.ac.th ; palsur@kku.ac.th • <http://kkucleft.kku.ac.th>

The Nasal Creator Device

The Nasal Creator Device is developed exclusively for patients with cleft lip and palate. It is used for forming and retaining the nasal morphology immediately after primary lip-nose surgery. The device helps reduce the chance of surgical relapse, thus enhances surgical results.

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ - PERU

Phone +51 991 895 723 • melisa.guevara@pucp.pe • www.pucp.edu.pe

The Manual Volumetric Ventilator

The Manual Volumetric Ventilator enables the manual delivery of a controlled series of volumes of air and/or oxygen to a patient's lungs, based on his/her lung compliance.

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ - PERU

Phone +51 991 895 723 • melisa.guevara@pucp.pe • www.pucp.edu.pe

Haptic device

Haptic device with electric motors that generate pressure or vibration sensations on the skin of a user with an upper-limb prosthesis, in such a way that it improves the control of strength applied by the user, increasing the dexterity in the use of the prosthesis and improving the sense of belonging.

POULADI ALI - IRAN

Phone +98 918 886 6155 • ali.poulady@gmail.com

A thermo-electrical device for purposeful reduction of destructive effects of scalp skin tissue metabolism in chemotherapy.

Hair loss or alopecia usually is one of the problem among patient with cancer after the start of chemotherapy, the mechanism of this device is as follow : it reduces and minimized blood flow on the scalp by cold airflow over the head and scalp during chemotherapy, which prevents hair loss and damage of skin in the patients undergoing chemotherapy.

PRECISION ROBOTICS LIMITED - HONG KONG

Phone +852 9401 9629 • m.woo@precisionrobotics.com • www.precisionrobotics.com

Sirius

Sirius - the first robotic flexible endoscope system

QUEEN ELIZABETH HOSPITAL - HONG KONG

Phone +852 3506 5353 • sss083@ha.org.hk • www3.ha.org.hk/qeh/department/mdssc/en_index.html

Emergency Cricothyroidotomy Simulator

Airway management and breathing are key foci in medical simulation training. The invention is a state-of-the-art simulator for Emergency Surgical Airway Training (or Cricothyroidotomy), mimicking the lifesaving procedures from making an incision in the cricothyroid membrane to inserting an endotracheal or a tracheotomy tube into the trachea using a scalpel-finger-bougie technique.

ROSHANI TAKHTAMESHLOU SOHEILA - IRAN

Phone +98 912 376 3861 • soheila_marefatA.Y.D@hotmail.com

Ultrasound Device with IOT Capability

Portable ultrasound device is one of the important equipment in medicine. Due to the high cost of ultrasound in different countries, having a portable ultrasound device is a great advantage for health centers, even in remote and inaccessible areas. The general practitioner will be able to take pictures of the inside of the person's body with ultrasound devices. From portable or portable ultrasound devices for emerging medical care such as sports care in the field of musculoskeletal system, pregnancy ultrasound, sex determination, twinning, ovarian disorders, uterine disorders, early pregnancy diagnosis, diagnosis of cancerous tumors, uterine tumors, tumors Prevention, treatment and control of metabolic diseases such as ketosis, fatty liver, infertility management, evaluation of individuals in terms of reproductive status, is used. The appeal of the new generation of hand-held portable ultrasound devices is the rapid and accurate examination of the patient's condition at any time and place. The probe can be connected to the device's display wirelessly or wirelessly, and it can also connect to the Internet and send images as a file.

S.K.H. LI PING SECONDARY SCHOOL - HONG KONG

Phone +852 2792 3639 • ivywong@newgen.org.hk • <https://liping.edu.hk>

HYDRAULIMB - BATTERY-FREE MICRO HYDRAULIC POWERED & THERMAL-SENSITIVE ARTIFICIAL HAND FOR AMPUTEES

“HYDRAULIMB” is an artificial hand of which the fingers and wrist could be controlled by muscular power. It not only offers the great advantages of a traditional prosthetic hand — cost-effective, practical and battery-free — but also provides that of a myoelectric Hand, including Grip Mode and Wrist Rotation. It contains some innovative features that cannot be found in other products.

SUN YAT-SEN UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

The research and application of pithecellobium clypearia against drug-resistant bacteria

The invention can inhibit drug-resistant bacteria and reverse drug resistance, providing a new technology to solve the problem of bacterial resistance.

SUTTANON PLAIWAN - THAILAND

Phone +66087 670 5546 • plaiwan.s@allied.tu.ac.th

Postural Sway Meter : A New Developed Accelerometry Based Device

Postural sway meter : a new developed accelerometry-based device was designed as an affordability postural assessment composed of small accelerometer, built-in rechargeable battery, and feedback signals. This device can use for 1) notifying as the falls detector before falling and 2) assessing the postural sway as well as to train and rehabilitate balance for elderly or individuals with balance problems.

TANGTRAKULWANICH BOONSIN - THAILAND

Phone +6689 738 3900 • boonsin.b@psu.ac.th

Pro-Active Hip

Our hip protector is to protect the hips of elderly people from fracture due to falls, just like we protect brain injury from accidents. Elderly people will be able to enjoy a good quality of live with an active lifestyle.

THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3943 3458 • cathywong@cuhk.edu.hk christineleung@cuhk.edu.hk • <http://cuhk.edu.hk>

Dementia screening in 30 seconds with 1 simple drawing

The invention is a software component that can analyse real-time drawing behaviour change objectively in a clinically validated model which indicates corresponding brain activities to screen for dementia when a user draws a simple figure. It is user-friendly and cost effective, the presence of healthcare professionals is not necessary to conduct the screening test.

Intelligent magnetic anchored and guided endoscope for minimally invasive surgery

Our invention includes two parts. The internal unit is a compact magnetic endoscope that “sticks” to the chest/abdominal wall inside patients and rotates/slides to change camera view. The external unit is a robot arm with AI-based intelligent controller. The robot arm steers a magnet to drive the endoscope to automatically follow the AI detected target, e.g. surgical instruments, inside patients.»

A Novel Virus-Free Anticancer Gene Therapy

Cancer treatments remain unsatisfactory to date. Although massive oncogenes have been discovered, the lack of pharmaceutical inhibitors largely limits their clinical translation. Gene therapy can block oncogene expression at genomic level, but the use of virus raises safety concerns. Thus, we invented a novel virus-free method that can tumour-specifically inhibit pathogenic gene expression in a reversible manner.

THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3943 3458 • cathywong@cuhk.edu.hk christineleung@cuhk.edu.hk» • <http://cuhk.edu.hk>

QuickCAS : An easy-to-use analysis system for quick detection of infectious pathogens in clinical samples

As the COVID-19 pandemic rages worldwide, rapid testing with automated detection systems is urged for effective diagnosis and infection control. Delayed diagnosis not only further burden the healthcare system but might also costs patients' life. Our system - QuickCAS is a rapid, fully automated and accurate pathogen detection system using a revolutionary microrobotic sensing technology, benefitting both clinicians and patients.

THE HONG KONG POLYTECHNIC UNIVERSITY - HONG KONG

Phone +852 9439 6930 • idy.to@polyu.edu.hk • www.polyu.edu.hk/web/

Biomimicking Photocrosslinkable Nanocomposite Bone Graft

Our novel photocrosslinkable nanocomposite can be fabricated to mimic the structure of natural bone. The low temperature and organic solvent-free fabrication process allows it to encapsulate bioactive molecules for long-term release. It can activate cell signaling pathways to simultaneously promote osteogenesis and angiogenesis while providing optimal mechanical support to the injured area, expediting the healing process.

Liverscan : Palm-sized Real-time B-mode Ultrasound Imaging Guided System for Liver Fibrosis Assessment

Liverscan is a novel device for human liver fibrosis diagnosis and staging. It applies B-mode ultrasound imaging to guide the process of transient elastography to directly quantify liver stiffness. This palm-sized device can achieve 100% successful rate in obtaining valid real-time measurement with visualisation of the liver during measurement to eliminate unwanted objects within the scanning range.

THE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 2299 0123 • evatam@tto.hku.hk • www.tto.hku.hk

Momentus Robotics - MRI-safe actuators

High-performance magnetic resonance imaging (MRI)-safe hydraulic motors and custom robotic systems for use in MRI environments.

Microfluidic platform for metastasis detection and drug discovery

A new microfluidic platform for label-free metastatic tumor cell capture and drug discovery

Universal Fracture Healing Accelerator for External Fixators

An external fixator can accelerate healing by applying micromotion to the fracture site. Sensor and controller help it maintain optimal biomechanical conditions at injured area.

Flu-based COVID19 vaccine

The vaccine is based on a unique live attenuated flu vaccine technology platform (DeINS1 LAIV) and it expresses a specific antigen to induce immunity targeting the critical element of the Receptor Binding Domain (RBD) of SARS-CoV-2. It is highly safe and is used as nasal spray to induce both local mucosal immune response and systemic immune response by simulating the natural infection pathway of respiratory viruses. It is by far the only one nasal spray vaccine for COVID19 in clinical trials.

TSINGHUA UNIVERSITY- YUAN YUAN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Implantable helical electrode and manufacturing method thereof

The invention can deliver directional electrical stimulation to the target area of the vagus, avoiding the stimulation to the unwanted area near the vagus by the leakage current, as well as the serious side effects.

TUBGLAM SUPAWADEE - THAILAND

Phone +66 815950512 • supawadee@nurse.tu.ac.th

Infant Respiratory Care - Simulation for Nursing Education

The infant Respiratory Care Simulation is a learning module to improve student learning in preparation for clinical training. It includes three components: an automatically adjustable bed, a baby mannequin, and the sensory harness. The invention allows a teacher to program simulated abnormal breath sounds in the mannequin and the bed tilts it in the appropriate therapeutic position.

WANG JIALUO, ZHUANG ZIXUAN, ZANG RENJIE - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Preliminary study on the Behavior Changes of Painless Acupuncture of Rabbits with Leech Saliva Extract

This project was carried out to study the behavior changes of painless acupuncture of rabbits with 20% leech grinding extract.

WIRIYACHAIPORN NATPAPAS - THAILAND

Phone +6694 526 5446 • natpapas@nanotec.or.th • www.nanotec.or.th

NanoFlu AB Duplex Rapid

NanoFlu AB Duplex Rapid Test provides a simultaneous detection and differentiation between influenza A and B viruses. In one time. With the combination of the test component and reagent selection and optimization, a rapid and simple influenza screening can be achieved within 5 minutes.

ZHEJIANG UNIVERSITY- HONG ZHANG - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A Novel Microfluidic Chip-based Modular System for Positron Emission Tomography Molecular Imaging Probe Synthesis (PET-MCS).

The revolutionary invention for ultra-microscale PET molecular imaging probe synthesis, which is an automatic, rapid and efficient system and will greatly benefit personalized medicine.

CLASS N

OPTICS - PHOTOGRAPHY - CINEMATOGRAPHY

COHEN SIMON - FRANCE

Phone +33 6 37 79 98 21 • simoncohen_ingstruc@hotmail.com

Crotale

Device for mechanically remotely controlling the sharpness and / or zoom and / or iris of a camera lens by means of a dial integrated into a cinema shoulder strap.

HONG KONG APPLIED SCIENCE AND TECHNOLOGY RESEARCH INSTITUTE (ASTRI) - HONG KONG

Phone +852 3406 2800 • corporate@astri.org • www.astri.org

Compact Non-mechanical Beam Steering Apparatus for Depth Sensing and Multi-imaging Display

Realizing a wide field of view optical depth sensing module e.g. LIDAR, and projection display by means of a compact, and fast response ferroelectric liquid crystal based non-mechanical beam steering apparatus.

Instant and Non-contact Determination of Materials Concentration in Solutions

Real-time detecting concentrations of one or more materials in solutions by using the optical sensor and an electromagnetic sensor in cooperation.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 15751865158 • 220151185@seu.edu.cn • www.seu.edu.cn

Holographic Waveguide AR Glasses

Internationally leading holographic waveguide augmented reality (AR) display module solution. The AR display module can project the image of the micro-display into human eyes to achieve the fusion effect of virtual image and real scene. This invention is mainly composed of micro-display screen, collimating optical system and holographic waveguide lens.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

Phone +886 986 947 890 • ru5020169@gmail.com

Healthy Eyewear

An eyewear of a biological micro electromagnetic wave transmitting and receiving resonance structure. It can absorb weak electromagnetic waves and environmental energy from human body radiation. The electromagnetic resonance is generated by the electromagnetic transmitting and resonating element in the structure of the present invention, and the bio-electromagnetic wave absorbed by the human physiological function is brought to a resonance amplification effect. Finally, the amplified biological electromagnetic waves are concentrated by the electromagnetic transmitting and receiving resonant element for concentrated resonance. The biological electromagnetic waves amplified by this resonance are emitted to human body around eyes and ears. This product can help the human nerve signal transmission, cell membrane potential and microcirculation of blood vessels, so that the cells can obtain sufficient oxygen and nutrients to achieve the self-healing function of the activated cells and improve human health.

TANG LONG HIN - HONG KONG

Phone +852 2940 0309 • tangmike2020@gmail.com or mikejackie1010@gmail.com • N/A

Smart Green Screen for Chroma key

A system of optically hidden green-screen enable chroma-key photography outside studio. Chroma key shooting can now be performed in front of live audience and broadcasted simulataneously. This screen system is applicable to ZOOM, TV broadcast, blended teaching, fashion show, etc.

CLASS 0

TEACHING METHODS AND MATERIALS - MUSICAL INSTRUMENTS - ART MATERIALS

BILAK VIKTOR - RUSSIA

Phone +7 916 670 95 13 • viktor@bi-luck.com • www.bi-luck.com/en/device

Rotating Color Circles Device

Rotating Color Circles Device is educational device for adults and children who study color science and professionally work with colors. The double-sided device consists of the corpus, rotatable and movable elements. The principle of studying colors with help of the device is that it is necessary mechanically rotate the color elements of the model along the radius of the circle and along the radius of the petals by the fingers and see possible color combinations.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/cto

IPA Guide for Visually Impaired Learners

The present International Phonetic Alphabet (IPA) Guide for Visually Impaired Learners is developed by both visually impaired and sighted people, facilitated by embossed printing, audio book, audio description, braille and QR code. This guide is intended to remove, to a great extent, the first obstacle for people who are visually impaired to learn IPA.

CREPLE. CO., LTD - SOUTH KOREA

Total Thinking Skills Studying Tools

Xing-Q is a future-oriented play-based 3D learning tool that develops and promotes comprehensive thinking skills such as creativity, mathematical understanding skills from children to the elderly.

FALLATAH AMJAD ABDULLAH ISHAQ - SAUDI ARABIA

Phone +966568844267 • Glooreis@gmail.com • www.uqu.edu.sa/studaff/83391

YOSR

A supportive device to teach people with different disabilities in 3 different ways: the pressing button, the optical sensor and the reader of the brain signals.

NARIN BURIN - THAILAND

Phone +6694 797 0809 • burinnarin@hotmail.com

Development Math Farm Fun Game

Educational game for learners to learn via a portable coputer (Tablet) r smartphone to increase the ability to learn mathematics for elementary school children.

RODPIPAT SARINYA, SARAYUTHPITAK JINTANA AND EKGASIT SANONG - THAILAND

Phone +6688 636 5522 • sarinya.i@chula.ac.th

Dirty Lung

Dirty Lung : A tool used to replicate the respiratory system. The model consists of a lung unit, a breathing unit and a filter to capture the microscopic dusts from the cigarettes and e-cigarettes, which are then, examined using a smartphone microscope.

SARAYUTHPITAK JINTANA, RODPIPAT SARINYA AND EKGASIT SANONG - THAILAND

Phone +6681 383 5199 • jintana.s@chula.ac.th

Healthy Teeth

Healthy Teeth : An educational tool that consists of an endo-microscope connected to a smartphone, which displays live images of the mouth. Students can then observe and evaluate their dental health. Then they can improve their oral hygiene and have data to share with others such as parents or dentists.

THE EDUCATION UNIVERSITY OF HONG KONG - HONG KONG

Phone +852-2948 8158 • hmkwan@eduhk.hk • www.eduhk.hk

Tree Assessment for Life Education (TALE) Project

A technology-assisted educational innovation integrates life education and Visual Tree Assessment (VTA) through a Mobile Application “Tree Portal” to nurture university and school students as citizen scientists and potential tree wardens with botanical knowledge and environmental awareness of benefits of trees to people and urban environment in Hong Kong which contributes to sustainable green communities.

Innovative Indoor Air Quality Monitoring and Education Kit

It is the first innovative IAQ education kit in the world, which include (1) a portable sensor to monitor 3 major IAQ indicators simultaneously, i.e. formaldehyde (HCHO), PM2.5 and TVOC (Total Volatile Organic Compounds), and (2) an online learning platform for students. The invention provides comprehensive technical resources to support environmental education, and, more importantly, new online learning methods.

Online Assessment System for Individual Scores (OASIS)

OASIS is a new online mechanism for scoring individual contributions to a team project’s completion. The individual score calculation is determined by an intelligent learning algorithm based on the scientific study, it discourages free riding before project commencement and punishes free riders upon project completion. It timely generates scores that are fair and defensible.

CanPro - Data-driven Cantonese Pronunciation Practice through Common Daily Expressions

Powered by a digitized Cantonese language database with about 800k characters extracted from Cantonese movie dialogues, CanPro is a handy mobile app designed to help learners to practise Cantonese pronunciations through daily expressions. Based on the usage frequency in the database, around 450 expressions were selected and categorized into three levels : Elementary, Intermediate and Advanced.

CLASS P

TRANSPORT - MOTOR VEHICLES - SHIPS - AVIATION - ACCESSORIES

ABDELRAZEK HOSSAM ELDIN MOHAMED MOHAMED - EGYPT

Phone +201156573533 • hnawar0000@gmail.com

Electric Racing Car

A racing electric vehicle which is to be fitted with an autonomous kit that implements the use of a simple low-cost approach of relying on 3d laser scanner. this will significantly reduce the cost of autonomous vehicles in the upcoming years.

AUTOMOTIVE PLATFORMS AND APPLICATION SYSTEMS R&D CENTRE/ HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 5333 • apas_info@hkpc.org

Swappable Battery - Low Platform Electric Minibus

The Swappable Battery Low Platform Electric Minibus is natively designed to cater for busy commercial vehicle operations in Hong Kong. The drained battery can be automatically replaced by full power battery within 7 minutes, which is 8 times faster than recharging the battery. Without sacrificing commercial fleet efficiency, this zero emission bus greatly enhances the roadside air quality. The stable low floor chassis design offers better accessibility for children, elderly and viable for wheelchairs as well.

CHING HENRY - CANADA

Phone +19059609888 • henry@relocching.com • www.relocching.com

Cable Seal

An extra secure and disposable tamper-proof container cable seal that can be reused more than once after being cut by a customs official during inspection. The same cable seal is able to be locked again while maintaining the original bar-coded body that was recorded in the bill of lading.

Container Seal

A secure and disposable tamper-proof container bolt seal lock that can be reused more than once after being cut by a customs official during inspection. The same container seal is able to be locked again while maintaining the original bar-coded body that was recorded in the bill of lading.

COLLEGE OF ELECTRICAL ENGINEERING (ZHEJIANG UNIVERSITY) - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

High-Efficiency, Light-Weight and Long-Lifetime Electric Vehicle Power Traction System

With the implementation of dual-motor and short-time power multiplication techniques, the invented traction system enables a powerful drive capability of 3.2 seconds on 100km acceleration for vehicles.

DEL ROSAL CIMADEVILLA PEDRO MANUEL - SPAIN

Phone +34 616 91 26 65 • pedrodelrosal@gmail.com • www.car2home.org

Car2Home

Advanced and innovative design of an electric vehicle, based on a modular and removable semi battery pack, for dual and simultaneous use of it: 1) to energize and move the ev 2) store and management energy at home.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Defect Recognition Support System (DRSS) for Aircraft Exterior

Perfectly designed to facilitate and enhance accuracy of aircraft exterior inspection, the Defect Recognition Support System is a portable application installing on hand-held devices. It assists the naked eye aircraft walk-around check by deploying image capturing system to achieve full traceability of inspection and zero human error with real time report and alert function.

JSC NIAS SUBSIDIARY OF JSC RZD - RUSSIA

Phone +7 985 232 97 03 • info@vniias.ru • www.vniias.ru

System for decentralized interval control of train movements

It relates to means of decentralized interval control of train movement.

KOREA AVIATION LIGHT CO., LTD. - SOUTH KOREA

Aviation Obstructure Light Installation Structure

Disadvantages of existing product, rope height work at outside of tower, barge berth essential at offshore wind power, vulnerable to pollutants. In order to solve these problems, through-type Aviation Light developed, to enable safe and easy installation and maintenance inside the generator.

KUANG JEN CATHOLIC HIGH SCHOOL - CHINESE TAIPEI

Phone +886 931 050 624 • a0931050624@gmail.com

The AI drone can help prevent the spread of the epidemic

Solve the problem of self-made drones; Solve the problem of estimating the number and density of villains in the model; Notify the excessive density of the number of people to help prevent the spread of the epidemic (such as large gatherings...). Judging from the test results of the second-generation AI drone: it has been able to successfully take off, take pictures, identify portraits, count the number of people and display the class size on mobile phones and computers; and the cumulative function of the static calculation of the number of people in the school has also been completed; As for temperature detection, efforts are still underway. In the future, research is directed towards faster and larger amounts of artificial intelligence to detect hyperthermia, so that the work of epidemic prevention can be completed without taking body temperature one by one.

LOGISTICS AND SUPPLY CHAIN MULTITECH R&D CENTRE (LSCM) - HONG KONG

Phone +852 3973 6200 • mchan@lscm.hk • www.lscm.hk

Seamless Navigation in Urban Environment

The invention implemented a DGNSS platform in position domain with an accuracy of 2 m. Moreover, a multipath mitigation engine was developed, with the integration of GNSS observation, MEMS inertial sensors and 3D map to achieve 2 m accuracy in open areas and less than 10 m in dense urban areas, with a mobile phone.

MAZAROM IMPEX SRL - ROMANIA

Phone +40212328001 • mazarom@mazarom.ro • www.card-sat.com

Small-size artificial satellite (CARD-SAT)

CARD-SAT is a new type of pico and nano satellite design as thin panel shape with thickness from 10mm, with a complex design in order to fix mechanical elements, micro switches, antennas with deployment mechanism and passive attitude system that will simplify the development process for further personalized applications.

MAZAROM IMPEX SRL - ROMANIA

Phone +40212328001 • mazarom@mazarom.ro • www.card-sat.com

Orbital Deployer for artificial satellite

Orbital Deployer consist of a low weight aluminum container provided with a door which can allow or block access to inside where is transported a Card-Sat small satellite for launching into space. Inside the container, in the back is fixed zigzag band spring for pushing out the satellite when door is open based on external electronic signal.

MILITARY UNIVERSITY OF AVIATION IN DEBLIN, LUBLIN UNIVERSITY OF TECHNOLOGY - POLAND

Phone +48 518 377 840 • j.pytka3661@wsosp.edu.pl

An innovative electric propulsion system for airplanes

The presented inventions are part of the innovative propulsion system of an airplane or motorglider. The PROPWING system allows the pilot to turn the drive on and off at any time, when required. In addition, it improves aerodynamics and efficiency.

NANJING UNIVERSITY - CHINA

Phone +86 15850549569 • bch@nju.edu.cn • www.nju.edu.cn

Automatic inspection of high speed railway infrastructure with machine vision intelligent signal processing

With machine vision and artificial intelligence, automatic inspection of high-speed electrified railway infrastructure is achieved; High speed camera array is utilized to obtain 360 degree image series of railway infrastructure, and accurate image registration and location is realized by the space-time synchronous localization and multi degree of freedom(MDOF) vehicle posture compensation; Based on image processing and machine learning, the system can automatically conduct target location, state detection and defect recognition of different railway equipment and facilities, and the accuracy is more than 95%. We have carried out a two year nationwide test, with a mileage of 15000 km, which has been reported and acknowledged by National Central Television.

NANJING UNIVERSITY OF AERONAUTICS AND ASTRONAUTICS - CHINA

Phone +86 15950508461 • jhsun@nuaa.edu.cn

http://graduate.nuaa.edu.cn/gmis5/dsfc/dsfcgrxx_New/70200742

Harbinger: An ejection flight data recording and emergency tracking system

Harbinger»(white box») embodies intelligent ejection separation(IES), image tracking(IT), Parachute-airbag soft-landing(PASL) and data transmitting (DT). IES ejects EFDR rapidly away from aircraft during crash. IT takes the emergent video, to support accident survey. PASL reduces the impact during landing, and makes EFDR floating on the sea. After landing, DT emits the flight data to satellite and rescue team, and helps rescue team to arrive rapidly.

SHANGHAI JIAO TONG UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Ship Integrated Power Quality Monitoring and Diagnosis System

Ship integrated power quality monitoring and diagnosis system provide power quality diagnosis solutions for ships with accurate customizable power quality diagnosis device and system

SHEYDA KHANGHESHLAGHI BABAK, NEMATİ GIV BANAFSHEH - IRAN

Phone +98 915 109 0985 • drsinal@icloud.com

Intelligent distance reduction alert system and crash severity reduction system

This system with warning to maintain long distance between two cars by speedometer system and distance meter which calculate speed and the distance of the car behind toward the movement speed car and in case of decreasing longitudinal distance and the information transferred to the processor through the electrical circuit and danger light will be on until the driver of behind car notices a decrease in distance and slowdown. In absence of attention behind car driver and with approaching the behind car, the processor has sent instruction to turning on guides and traffic lights or flashing lights will be on. In the absence of attention driver and base on processor detection compared to two car crashes, an air bag or jack inserted in the shield open and prevents rear-end collisions and reduce injuries.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 13815898035 • chxiyuan@seu.edu.cn • <https://ins.seu.edu.cn/2019/0606/c26909a303827/page.htm>

A navigation system and floating correction method for UAG»

A navigation and positioning system for underwater glider and a floating precision correction method. It is a Dual-mode Disturbance-resistant Inertial-based Integrated Navigation System mainly based on inertial measurement unit and assisted by multiple external sensors, which can work in two modes of low-power consumption and high precision.

SOUTHWEST JIAOTONG UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Fuel Cell Hybrid Power Tramway

The world's first fuel cell hybrid power tramway consists two motor units and one trailer unit, has a maximum capacity of 358 passengers, a maximum speed of 70km and a range of more than 60km.

Fuel Cell Shunting Locomotive

Fuel cell shunting locomotive is powered by a 150kW fuel cell system, and two 120kW permanent magnet synchronous motors are its traction motor. This shunting locomotive has a maximum design speed of 65 km/h, a sustained traction of 20 kN, a traction weight of 200t and a maximum endurance of 24h.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 932 193 358 • jshuang@tpcu.edu.tw

Anti-Fall Safety Device for Motorcycle

In Taiwan, there are more than 14 million motorcycles. Many drivers were injured in motorcycle falling-down accidents. To reduce motorcycle falling-down accidents, this invention relates to an anti-fall safety device for motorcycle. The main features of this invention are: As the motorcycle falls to set angle, side stand will switch down to stop or buffer falling. Anti-fall actuation timing can be adjusted by the angle of inclined-tube sensor. As moving the motorcycle into (or out) a small parking space, the driver can switch the side stand down (or up) by operating three-way switch in back seat.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

Phone +886 920 097 539 • hykuo@tpcu.edu.tw

Passenger Space Image Monitoring Device for Electric Train

This product establishes an image monitoring system for the passenger space of the electric train. The system architecture can be divided into subsystems such as real-time image capture, wireless network module, display device, and cloud database. The system mainly performs head recognition and number statistics for passengers in the electric train. According to the number of people in the carriages, the red, yellow, and green lights are respectively displayed on the outside of the car and on the waiting platform, so that passengers can know which carriage is currently crowded. It provides boarding information in a less crowded or relatively empty state. Passengers who are about to enter the station can also check the current congestion level in each carriages through a mobile phone, which is used as the basis for choosing the route to the platform. The relevant data can be provided to operating unit as a reference for transport management.

THE HONG KONG POLYTECHNIC UNIVERSITY - HONG KONG

Phone +852 9439 6930 • idy.to@polyu.edu.hk • www.polyu.edu.hk/web/

A Smart All-Electric Antilock Braking System (ABS)

We developed the world's first All-Electric Antilock ABS which can prevent vehicular wheels from locking up during braking and provides active safety protection based on all-electric power electronic actuation without a hydraulic or bulky mechanical system. Our ABS achieves higher response and more accurate braking torque control, thus effectively shortening the braking distance and time for enhanced safety and performance.

TSINGHUA UNIVERSITY - CHINA

Phone +86 18688936672 • li.qiang@sz.tsinghua.edu.cn • www.sigs.tsinghua.edu.cn

An unmanned underwater system with propellerless propulsion

An unmanned underwater system with propellerless propulsion. It is a new propulsion method without exposed propeller, aiming to improve the reliability of traditional thrusters and be more environmentally friendly.

TSINGHUA UNIVERSITY - CHINA

Phone +86 18911803773 • xianwanghou@163.com • www.tsinghua.edu.cn

Bluefin Tuna-Inspired Autonomous Underwater Vehicle BF-AUV

Compared with the traditional Autonomous Underwater Vehicle (AUV), the developed Bluefin Tuna-Inspired Autonomous Underwater Vehicle (BF-AUV) has the characteristics of high speed (up to 24 knots), ultra-low noise, high efficiency (up to 80%), long endurance, easy maintenance, etc. Specifically, it supports underwater wireless charging, wide-angle HD shooting (720°, 1080p), swarm intelligence, etc.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13020009449 • xyzhang@tsinghua.edu.cn

Multimodal fly-drive vehicle for future transportation

This design is proposed for and applied to the comprehensive dimensional traffic, which is the inevitable tendency of future traffic. Its development can not only help to relieve the future urban traffic congestion problem and can also be applied in other areas such as rescue and logistics.

CLASS Q

FOODSTUFFS - DRINKS - COSMETICS - PARAMEDICAL - HEALTH - HYGIENE

AHARI HAMED, ANVAR SEYED AMIRALI, ATAEE MARYAM, AZARI ARMIN, KARGAR MARYAM, EFATIAN HELEN - IRAN

Phone +98 912 187 2334 • dr.h.ahari@gmail.com

Production of nano silver packaging based on poly lactic acid (PLA) by using melt mixing method with antibacterial properties

The invention hereby registered concerns production method and application of nano composite film containing nano Silver based on Poly Lactic Acid and its antibacterial properties. The melt mixing is very useful for mixture of polymer and nano particles. This nano composite has beneficial particulars such as being biodegradable, being safe for use for foodstuff and low price.

BONCHA BONCHA INTERNATIONAL COMPANY LIMITED - CHINESE TAIPEI

Phone +886 972 002 603 • emily@bonchaboncha.com

10 Billion LIVE Synbiotics (probiotics + prebiotics) Candyceuticals

BonchaBio is a nutraceutical confection maker looking to revolutionize the preventive medicine market, by ending the trade-offs between taste and effectiveness. Synbiotics central-filled candyceuticals is a new dosage form, perfect for all ages! Synbiotics is the combination of active probiotics and prebiotics. 1. Central filling : 10 billion live bacteria gently dormant and stays fresh in the central filling for 12~18 months. 2. Candy shell : The prebiotics fiber feeds the probiotics for delivering a vigorous boost to bioavailability- and health impacts. With our proprietary processes and technologies, we have a significant breakthrough in probiotics –tasty and effective!

BOONPISUTTINANT KORAWINWICH - THAILAND

Phone +6690 950 1777 • korawinwich_b@rmutt.ac.th • www.tmc.rmutt.ac.th

TRISLA HERBAL TONIC

TRISLA HERBAL TONIC enriches of herbal extract from Ancient Thai recipes. The novel extract can stimulate melanogenesis and growth of dermal papilla, and reduces the expression of 5 α -reductase mRNA that cause of male-pattern hair loss. It helps to generate hair, reduces oily scalp, which suitable for treatments of hair loss, oily and itchy scalp, balances hair scalp and roots, reduces inflammation from chemicals, fungus and pollution with good scent and relax. This product has already patented, marketed and financial supported by iTAP, National Science and Technology Development Agency (NSTDA), Thailand

BOONYUEN SUPAKORN - THAILAND

Phone +66 635635923 • Chemistrytu@gmail.com

Serum of bamboo extract for sensitive skin.

Total enrich bamboo serum for sensitive skin contains the main components of nano encapsulation isoorientin flavonoids of bamboo extract to reduce the radical and bacteria that cause skin inflammatory and lines. From our innovation, the serum reduce the dehydrated and infected skin then slowly yield a bright and healthier skin. The driving bio economy from using innovation to provide high quality product is successful.

CHEN ZHIBO - HONG KONG

Phone +852 9061 6745 • bob.chen@ambobio.com • www.ambobio.com

SweatLife Physical Fitness Monitor

The product SweatLife Physical Fitness Monitor® is the first portable real physiological indicator for body physical fitness monitoring. User can measure their personal physical fitness level by using a drop of sweat, which can be easily obtained from outdoor exercise or indoor training etc.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/kto

Damage-healable Antimicrobial Coating Made from Natural Materials

There are increasing demands on the applications of environment-friendly, pathogen-preventive coatings in public and healthcare settings, meanwhile most anti-pathogen coatings suffer from surface scratches and mechanical damages. Our technologies directly address these issues through the development of damage-healable antimicrobial coatings made from natural ingredients.

DAMIN FOODSTUFF (Z HANGZHOU) CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Freeze Dried Ginseng (Artificially Cultivated) Extract Powder

The raw materials of ginseng from Mountai Changbai, Jilin Province, China were selected to gain the water extraction solution which were rich in various of ginsenosides.

Sweet from nature, Monk Fruit Extract(Mogroside)

We use advanced industrial chromatography technology to separate mogroside components, make full use of glycoside components, and greatly reduce costs. This product is well received by customers at home and abroad.

FUDAN UNIVERSITY - CHINA

Phone +86 13918217573 • jdding1@fudan.edu.cn • http://DingGroup.fudan.edu.cn

Intelligent Thermo-responsive Physical Hydrogel

'Intelligent thermo-responsive physical hydrogel' is based on a kind of environment-friendly polymeric surfactants (amphiphilic copolymers), which are so smart that their aqueous solutions exhibit intelligent responses with sol(solution)-gel-sol (suspension) transitions upon heating. Such smart surfactants and intelligent hydrogels with inverse thermosensitivity are unique and widely useful.

HANGZHOU HUNTER BIOTECHNOLOGY, INC. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Research, development and application of zebrafish model rapid detection method for evaluating the efficacy and safety of health foods and cosmetics

Research, development and application of zebrafish model rapid detection method for evaluating the efficacy and safety of health foods and cosmetics.

HANGZHOU YOSTO COSMETICS CO, LTD. - CHINESE TAIPEI

Phone +886 287 977 811 • michael.chou@tci-bio.com

SYRINX Lactobacillus Enzyme Plus Powder

SYRINX Lactobacillus Enzyme Plus Powder is composed of integrated vegetable and fruit enzyme, multi-probiotics and patent CitriSlim to promote metabolism efficiency and improve enteric microflora environment. Integrated vegetable and fruit enzyme consisted of 88 kinds of natural vegetable and fruit which is rich in phytochemicals, processed by an exclusive fermentation process in Taiwan, with plum enzyme encountering 720 days of three-stage microbial fermentation and Japan Patent Enzyme Active Factor to stimulate digestion and absorption. In addition, selected 6 beneficial bacteria can prevent the causing of abnormal increase of particular bacteria by the mechanism of synbiotic action. Last but not least, the activation of CitriSlim can contribute decomposition of fat, thereby achieving detoxification of intestines and adjust fitness.

HNOOHOM NARIT - THAILAND

Phone +6689 893 5838 • narit.hno@mahidol.ac.th • www.mahidol.ac.th

Automatic urine color and weather measurement tool

Automatic urine color and weather measurement tool is an innovative work that uses to monitor the presence of heatstroke illness in the basic military training. This innovation has applied the internet of things technology and artificial intelligence technology in the medical field, which helps automatically record urine color and weather data and then import the risk assessment more quickly and precisely. Real-time risk assessment alerts are also developed to reduce the rate of heatstroke illness.

HONG KONG BAPTIST UNIVERSITY - HONG KONG

Phone +85234118074 • mikeng@hkbu.edu.hk • https://kto.hkbu.edu.hk/

Quality Control Markers for Use in Herbs Authentication

The invention is a convenient and low-cost method to efficiently authenticate the valuable herbal medicines such as Dendrobium Officinale and Cordyceps qualitatively and quantitatively, that suitable for commercial use particularly for medicines proprietors.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 13429885501 • bin.hu@hust.edu.cn

Quasi-medical-grade sleep health monitoring system based on flexible electret

The non-contact sleep monitoring belt based on piezoelectric electret material can not only realize medical-grade monitoring of sleep behaviors such as heart rate and respiration rate without affecting sleep but also accurately analyze the quality of human sleep and identify common Respiratory and heart disease. It can also provide users with appropriate medical advice.

HUNAN ZHUMEI BIOTECHNOLOGY CO., LTD - CHINESE TAIPEI

Phone +886 287 977 811 • michael.chou@tci-bio.com

Red quinoa collagen elastin peptide drink

Hunan Zhimei Biological Technology Co., Ltd. newly launched the collagen elastin peptide red fruit juice drink, which mainly solves the problems of skin oxidation and glycation. The drink contains 5g of high-quality collagen from Nippi, Japan, and is matched with the patented and award-winning Taiwan red quinoa extract, which can effectively increase the collagen content by 41% in 8 weeks, and has anti-aging, wrinkle reduction, and skin antioxidant capacity. With multiple skin nourishing ingredients, the drink is designed to achieve optimal skincare effectiveness.

INFINITUS (CHINA) COMPANY LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

YUTIANSHI Saffron Skin Spray

This invention is about the synergy between Hemp Seed Oil and DHA Algal Oil via scientific collocation to provide the most comprehensive DHA, EPA, DPA and ALA for human body.

INTELLIGENT PRECISION MICRO-SYSTEMS LIMITED - HONG KONG

Phone +852 9218 3064 • a.wong@ipm-tec.com

Robotic mask dispenser

In light of COVID-19 pandemic, face mask becomes daily necessity. IPM designs a robotic mask dispenser where, face mask are assembled, sterilized in clean room environment, minimizing contamination and zero package material. It offers you a mask, 7 days X 24 hours, at low maintenance and convenient locations, while maintaining high disinfection level.

JIANMAO BIOTECH CO., LTD. - CHINESE TAIPEI

Phone +886 916 121 486 • peter.hsu777@hotmail.com

Beminshah G.L-ENZYME, Beminshah LIMONIN & Polyphenol Essence

This invention relates to a new fermentation method: "do not add any sugar, but only add probiotic into lemon juice, which was squeezed from whole lemon, includes lemon skin (peel), lemon seeds. The result of the new fermentation method: taste of lemon juice, not only taste better, but also shows that probiotic can effectively ferment lemon peel and release more polyphenol. Polyphenol content was significantly higher than other fermentation method.

JUNG DAE KWON - SOUTH KOREA

Iontophoresis based patch type skin care device

This is a skin-attached scalp management device that combines TDDS technology and Iontophoresis technology. This technology help prevent skin aging and improve troubles flow to keep the scalp healthy.

JUWENLEE COSMETICS TECHNOLOGY CENTER, LUO LIH-FEN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A biofiber mask for sensitive skin containing dihydromyricetin(BioDHM \bar{O})

Dihydromyricetin (DHM) is a flavanone compound with several pharmacological effects including anti-oxidation, anti-inflammation and anti-allergy effects.

JUWENLEE COSMETICS TECHNOLOGY CENTER, LUO LIH-FEN - CHINA

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A commercial facial cream comprising the novel Sakura effective components (CerasusGZ \bar{O}) for blue light filtration, skin whitening and repair

The Cerasus yunnanensis 'Guangzhou' was proved to be the blue light filtration and skin whitening and repair. Ingredients flavonoids by SFE and 3D skin model and Cytological studies B16F10 cells.

JUWENLEE COSMETICS TECHNOLOGY CENTER, LUO LIH-FEN GROUP - CHINESE TAIPEI

Phone +886 933 519 245 • atropa@ms18.hinet.net

Herbal compound extract for improving diabetes with liver damage and liver fibrosis and use thereof

Herbal compound extract for improving diabetes with liver damage and liver fibrosis and use thereof. Dendrobium Mixture in Order Cycle(DMOC) is a study on the molecular mechanism of increasing liver fibrosis after more than 20 years of clinical experience in the treatment of diabetes, and finally we applied it to anti-glycation drinks.

JUWENLEE COSMETICS TECHNOLOGY CENTER, LUO LIH-FEN GROUP - CHINESE TAIPEI

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Skin care efficacy of Hibiscus taiwanensis rhizome extract (HTRE)-containing facial cream

Skin care efficacy of Hibiscus taiwanensis rhizome extract (HTRE)-containing facial cream. Hibiscus taiwanensis rhizome extract (HTRE) is native to Taiwan. The supercritical fluid extraction from HTRE exerted no cytotoxic effect on murine B16F10 cells and showed anti-melanogenesis activity in our preliminary experiments. This Furong Shuang has a unique microcapsule packaging technology to produce a scar cream with powerful lock in moisture, whitening and repairing wood.

KHOKHLOV IURII, KHOKHLOV ALEKSANDR - RUSSIA

Phone +7 920 251 33 44 • 7220217@mail.ru

Cream-balm ZDRAVODERM»

Cream-balm ZDRAVODERM» is superior to all other existing remedies designed against various skin problems in terms that it does not contain hormones, boasts natural composition of active ingredients and gives instant apparent result in case of almost all skin problems at any part of the body. It avoids tolerance and any side effects.

LYSIN SERHII - UKRAINE

Phone +38 098 249 00 69 • man@man.gov.ua • <http://man.gov.ua>

Nutis

Nutis - a system of a mobile application, glasses, and a fitness bracelet, complex automates the processes of monitoring nutrition and exercising, and simplifies the process of counting calories. Each product can work autonomously.

MING CHYI BIOTECHNOLOGY LTD. (MCB) - CHINESE TAIPEI

Phone +886 916 172 464 • ryanwang@mingchyi.com

FiberJuice™ Microencapsulated Juice Powder with Fibers

FiberJuice™ is a new generation of microencapsulated healthy juice powder with high fibers. Powder juice is widely used in food industrial as the flavorings but most of the commercial products content high sugar which may cause obesity and not friendly to diabetics. Because of the high sugar content, the products are easier to get moisture and agglomerated. FiberJuice™, a brand of healthy juice powder, applied the microencapsulation technology via spray dry process with the special ratio of mixed soluble dietary fibers (patented), becomes a low-GI powder juice, and achieved unprecedentedly improvement of the moisture resistance.

MCTsolutions™ Microencapsulated MCT Oil Powder

MCTsolutions™ is an innovative sustained-release MCT oil powder of Microencapsulation. Medium chain triglyceride (MCT)» oil powder is the key element of the ketogenic diet. Traditional oil powder may cause stomach upset due to large amounts of oil released in the stomach. MCTsolutions™, a brand of MCT oil powder, depended on microencapsulation process technology (patented) has a sustained-release effect to reduce the discomfort of user's stomach, and helps them to achieve the effect of ketogenic diet more efficiently.

Anpicold™ Microencapsulated Yeast Protein Powder

Anpicold™ Microencapsulated Yeast Protein Powder with multi-layer coating technology to improve product stability and effectiveness. Powdered nutritional supplements of immunity-enhancing are rising in the market, but the stability and effectiveness of the powder have been challenged. Anpicold™ Powder is composed of some raw materials that have been proven to enhance immunity. In order to ensure that quality and effective ingredients can be absorbed by the human body, we use the innovative multi-layer coating technology to improve the stability, moisture resistance, palatability of powder supplements that make Anpicold™ Powder becomes a Super product to strengthen human immunity.

MUANGSIN NONGNUJ - THAILAND

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4U Cream

4U cream, Herbal lotion, consists of Plai oil extract, which is developed with a novel nanoencapsulation technology using biopolymer as a protective layer to increase physical stability, provide positive charge particles to enhance transdermal property and bioactivity of active ingredients, mask unpleasant odour, and control and release active ingredient at specific site.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

Ultrasound NanoBubble Cold Brew Coffee and Tea Machine

NAMI's fast, energy efficient ultrasound nano bubble cold brew coffee and tea machine, utilizing air nano bubbles and ultrasonic technologies, maximizing the extraction of coffee and tea ingredients within only 10 minutes, reducing from traditional steeping time of 12 to 24 hours and the risk of bacteria growth in prolonged refrigerated beverages.

Portable and Flexible Pressure Sensor Mat for Gait Scan

NAMI developed a flexible sensor mat product that is easy to carry around and provide pressure distribution map for podiatry analysis. All screen printed pressure sensor array features fast response in a wide pressure range of 20kPa to 500kPa. A resolution of 21 pixels per square inch area ensures that high resolution pressure distribution map can be captured for detail analysis of podiatry and evaluation of sports performance.

High-flow Nanofiber Water Pitcher to Remove Microplastics, Cysts, Bacteria, Viruses and Heavy Metals

NAMI's pitcher functions with a compact filter cartridge composing a thin nanofiber membrane capable of removing contaminants including microplastics (Class 1 particulates) by a combination of three water purification mechanisms – adsorption, ion exchange and membrane filtration without compromising water flow. This is the world's first high-flow pitcher in accordance with NSF 42/53, enabling users to enjoy clean water much sooner.

Virtual Breathable Skin (VBS) – Bio-mimic, Non-porous Breathable Wig Cap

A bio-mimic wig cap, made of novel non-porous breathable material showing similar biophysical properties as human skin, is 5 times more breathable with skin-comfort feeling compared with conventional products as measured by accredited testing laboratory (SGS). Wigs with Virtual Breathable Skin (VBS) particularly benefit vulnerable people such as cancer patients who need them as daily necessities for normal social life.

Quick-out Deep-in Anti-Pollution Skincare with Herbal Ingredients

Continuous exposure to polluted air significantly correlates to premature skin aging. NAMI's anti-pollution skincare actively removes and repels pollutants through electrostatic attraction / repulsion with herbal ingredients, while nourishing skin simultaneously. Nanocarriers and nanofibers are deployed to enhance the loading, transdermal delivery and bioavailability of water-soluble and insoluble herbal actives, maximizing their efficacies while being skin-friendly to achieve dermal rejuvenation.

Multi-use Nano Mask

A washable facemask with built-in filtration and antimicrobial functions is created with NAMI's proprietary nanofiber technology. NAMI's facemask carries robust filtration performance with persistent wash resistance. There is no observable detrimental effects on filtration and antimicrobial efficiencies after multiple cycles of handwashing; bacterial and particulate filtration efficiencies (BFE and PFE) are well maintained beyond 95% with bacteria-killing property retained.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

Biocide-free, Germ-repellent Plastic Bottle for Safe Drinking

By adopting NAMI's patented technology, the germ-repellent bottle repels harmful bacteria without conventional leachable biocides, assuring users a long-term bacteria-free drinking experience. The germ-repellent bottle has been independently proven effective in reducing up to 99% of bacterial attachment and revolutionizes clean drinking on-the-go. It is certified to comply with US FDA, EU, and LFGB food contact safety standards.

PARK ILSU - SOUTH KOREA

Method for manufacturing wet wipe

It is used for wiping a face, cleaning a polluted area, washing off face makeup, taking care of a baby, etc. >>> wet tissues using by putting a hand therein like a glove

PIRAT NOPADON - THAILAND

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Aqua-PEACE

Aqua-PEACE is an improved version of safe and effective sedative, anesthetic agent and power booster used in aquaculture with a focus on animal welfare. Aqua-PEACE is a ready-to-use anesthesia and the nanotechnology innovation. Aqua-PEACE have 3 types; Aqua-PEACE Milk, Aqua-PEACE Bead and Aqua-PEACE Powder which are corresponding to rapid onset, slow continuous release and powerful booster, respectively.

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ - PERU

Phone +51 991 895 723 • melisa.guevara@pucp.pe • www.pucp.edu.pe

Electronic nose

Electronic nose consisting of a sensors array made of metal-doped oxide and zeolite-coated semiconductors, which detects the volatile compounds present in the aroma of food and alcoholic drinks, and useful for the assessment and identification of their quality.

PROFESSOR DR. ATHAKORN KENGPOL - THAILAND

Phone +6684 755 6897 • athakorn@kmutnb.ac.th • http://www.kmutnb.ac.th

Health Beverage Vending Machine Learning

World's First Health Beverage Vending Machine Learning. It has an ability to learn ageing people's preference through internet cloud server by using AI models and big data analytics. It can suggest an appropriate health beverage to individual ageing people who may have different symptoms, according to WHO's consumption recommendation.

SAKKAYAWONG SUPANAT - THAILAND

Phone +6680 978 2365 • sakkayawong1003@gmail.com • www.heliosthailand.com

Cajanus cajan (L.) Millsp peptide extraction process

The peptide (molecular 5-10 kDa), saponin and phenolic compounds of *Cajanus cajan* (L.) Millsp were used as active ingredient in Helios Face serum and Helios cleansing gel. The extraction process was used enzyme form mix culture of mold, yeast and bacteria. Products efficacy had high effective to reduced wrinkles on crow's feet, around the neck, eye sage, melasma spot and acne inflammation for more than 90%.

SHANGHAI RIGHT ON INTERNET CO., LTD - CHINESE TAIPEI

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Pearlosophy® Collagen Peptide Drink

The product features the duo fish collagen peptides» (type VIII collagen) sourced from France and Japan and is infused with soursop, called the fruit of youth» by the Inca nobles to help fight oxidative stress, glycation and photo-aging. Also, the product contains the Snow Lotus Extract and rosa rugosa flower extract to help revive aging skin as well as multiple vitamins from fruits and vegetables for nutrition support. Produced by the Double Nutri and Synergene technologies, the active ingredients in the product can be easily and efficiently absorbed by the human body to help promote collagen growth and delay aging.

SHANGHAI TRADITIONAL CHINESE MEDICINE CO., LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Inter-turn Short-circuits Fault (ITSCF) Detector for Motor Rotor Winding (RW)

These kinds of saffron mask contain the essence of saffron, wild ginseng and other precious herbs. Strictly select materials and proportions to create a good mask for Chinese products.

YUTIANSHI Saffron Facial Mask

YUTIANSHI Saffron Skin Spray The source is from the natural 4400m underground of active volcano hot spring water in Yunnan province of China. It can keep moisturizing, make skin transparent, and neutralize skin pH value. HCO₃ - smooth skin, SO₄2 - maintains skin balance

SMANMOO SRUNG, SANGSOOKWOW CHAYADA, KHAYAK PHIYADA, THONGDEEWONG NATHANAN - THAILAND

Phone +6692 526 2892 • ssmanmoo@gmail.com • www.avsinnovation.com

Kao Vee Plus

Houttuynia cordata has been recognized for its high chlorogenic acid and used for the treatment of diabetes. There is no data reported for the use of H. cordata as an immunomodulating compound. We have discovered the fermentation with probiotic converts chlorogenic into an immunomodulating agent which offers H.cordata a new immune – boosting compounds.

SON IL KWANG - SOUTH KOREA

Glasses type mask frame

This invention that wear with hanging mask straps on the frame of the glasses bridge shape is an innovative product that can solve the continuous pressure and pain problems on the skin by existing masks and straps.

SOONTORNPIPI PICHITPONG - THAILAND

Phone +6687 916 2552 • pichitpong.soo@mahidol.ac.th

Dengue hemorrhagic fever surveillance and investigation system

The system is created for three purposes, the alert function for the surveillance and rapid response team (SRRT), the monitoring for inspection and evaluation, and the back-office report. With the functions to retrieve and manage electronic health record (EHR) from hospital information systems (HIS) and the surveillance system from the department of disease control (DDC), the SRRT and local teams in 7 provinces can easily set up and manage their resources real time with the GPS function to help identify the geographical data for any countermeasure and action.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

Phone +886 986 947 890 • ru5020169@gmail.com

Super Oxygen Activation Juice

SOA(Super Oxygen Activation)juice powder formula is to supplement the nutritional deficiencies of modern people and meet the needs of vegetarians. Drinking SOA can quickly finding out the immediate response to the hypoxia problem of the body, it also provides nutrition and oxygen. SOA fruit and vegetable powder was born. Blending in precious extracts from more than 40 nature materials with advanced polymer technology such as fruit and vegetable enzymes, multiple soluble and insoluble plant fibers, multiple highly active probiotics, multiple essential amino acids and essential trace elements.

TCI CO., LTD. - CHINESE TAIPEI

Phone +886 287 977 811 • michael.chou@tci-bio.com

NMN Yeast

Are you troubled by frequent backaches, fatigue and forgetfulness? These are all signs of aging. For thousands of years, human have never stopped finding ways to delay aging. However, it it really possible to delay aging? Well, it is! Studies have pointed out that after consuming NMN, the NMN in the body can be converted, through the blood, into NAD+, which can accelerate the elimination of accumulated metabolites in the body. The TCI R&D team uses natural yeast to ferment to produce NMN. Not only is the source safe, but experiments have found that compared to commercially available synthesized NMN products, NMN produced by natural yeast fermentation can significantly enhance cell activity and scavenge free radicals. TCI, through constant research and development, is dedicated to creating a better life for everyone.

PRO6X

PRO6X, based on the concept of a combination of superfoods for probiotics», is a unique technology used to develop functional blends of probiotics and prebiotics. Using the PRO6X technology, a probiotic formula is infused with a variety of prebiotics, that is, special nutrients needed by probiotics, as well as carbon and nitrogen sources, at a golden ratio», which helps establish an intestinal environment suitable for the growth of probiotics and improves the survival of the probiotics in the formula passing from the stomach to the intestines. Experiments have confirmed that PRO6X formulas can averagely increase the survival rates of probiotics by 6 times, which is an effect that ordinary prebiotic products cannot achieve. At the same time, by combining probiotics with different functions, the colonization rate of probiotics can be positively affected to greatly boost the effectiveness of the probiotic blends.

Prunus Domestica Ferment

Prunus domestica is rich in dietary fiber and natural sugar alcohols, which can promote intestinal peristalsis. Regarded as a natural remedy to improve constipation, the fruit is thus called the intestinal scavenger» in Chinese. TCI carefully selects high-quality Prunus domestica from Chile and uses an exclusive patented three-stage fermentation process to increase the content of natural sugar alcohols of the Prunus domestica Ferment. Clinical studies have confirmed that Prunus domestica Ferment can inhibit intestinal inflammation better than ordinary Prunus domestica juice and significantly increased the number of bowel movements of the subjects. Also, an increase in probiotic levels in the intestines and a significant reduction of body fat rate were found in all the subjects.

TCI fruit and vegetable Enzyme™

Many studies have confirmed that juices or extracts of different kinds of berries help improve different skin conditions. These studies have prompted TCI's R&D team to formulate TCI fruit and vegetable Enzyme™ featuring extracts of 6 kinds of berries. Using the patented fermentation technology, TCI has successfully increased the content of active ingredients in the extracts. Clinical studies have found that TCI's proprietary vegetable and berry enzyme can directly increase SOD levels in the blood by 15% and at the same time increase the skin's hydration and collagen content, uickly enhancing the antioxidant capacity of the blood vessel and skin.

THE HONG KONG POLYTECHNIC UNIVERSITY - HONG KONG

Phone +852 9439 6930 • idy.to@polyu.edu.hk • www.polyu.edu.hk/web/

CareCoatex™: A Biomaterial-based Core-Shell Particles for Safe and Effective Antibacterial and Antiviral Applications

CareCoatex is a safe, effective and durable coating with antibacterial and antiviral properties. It effectively and rapidly kills 99% common bacteria such as *Staphylococcus aureus*, and viruses like H1N1 and HCoV-229E. With the encapsulated natural antimicrobial reagents, it can perform both contact killing and time-release killing for up to 6 months, which is useful for disinfection and contamination control.

THE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 2299 0123 • evatam@tto.hku.hk • www.tto.hku.hk

Innovative Sewage Testing Tool for SARS-CoV-2

A sewage testing tool for SARS-CoV-2 was developed. It was successfully used to trigger government gazettes compulsory testing in Hong Kong and uncovered 13 hidden COVID-19 cases.

A nanofibrous composite membrane air filter.

The invention is a nanofibrous composite membrane air filter. Fibers with different functions are blended or hierarchically arranged to achieve anti-wetting, breathability, and efficient air pollutant removal. The filter is designed to be reusable after simple washing for sustainable use.

THINK BLANK.LTD - SOUTH KOREA

Feminine physiological appliance sterilizer having management method and system based on menstrual cycle.

Our products have been invented to solve the issue and to make women's lives convenient. It operates with a one-touch button and fully supports the android system-based application, which helps to analyze the condition of the cup as well as the menstrual cycle, then enables to predict/prevent the various type of diseases by effective sterilization.»

TIN'S SECRET - CHINESE TAIPEI

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Grape Yeast Compound Fruit-vegetable Beverage

Grape Yeast Compound Fruit-vegetable Beverage by TST features the grape extract to strengthen the body's defenses and contains the extract of berries sourced from Europe to help the body fight radiation exposure and improve the body's antioxidant capacity. Also, the product is infused with active ingredients produced using special fermentation technology, which improves the release efficiency, to increase metabolism, help protect human cells, remove harmful substances in the body, and strengthen the body's defenses.

TONGIL POCKET CASE CO., LTD - SOUTH KOREA

Spray structure for portable atomizer

This Invention has maximized the convenience of spraying. Now you can spray the pump by using only one hand with a simple touch. Also you can instantly find the spraying direction once it is in your hand.

VANGNAI ALISA - THAILAND

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M-Green washing agent

M-Green is a natural vegetable-fruit washing agent containing insecticide-detoxifying enzymes. It is an innovative product formulated to remove and efficiently breakdown insecticides contaminated on farm produces reducing their toxicity. The product also contains organic coating agents to prolong shelf-life of the produces. It contains no harmful chemicals, thus it is safe for human use and environmentally-friendly when discharged.

WROCLAW UNIVERSITY OF ENVIRONMENTAL AND LIFE SCIENCES - POLAND

mateusz.luzny@upwr.edu.pl

A series of 45 inventions regarding the biotransformation resulting in formation of bioactive flavonoids

Methods of obtaining bioactive flavonoid compounds, including dihydrochalcones and glucopyranosyl flavones, by combining biotechnological methods with chemical synthesis. Yeast and entomopathogenic fungi strains were used as biocatalyst. The application described biotransformation methods allows converting used substrate into mainly on product, which simplifies extraction and purification process. The use of biotransformation methods to obtain bioactive flavonoid compounds is much more effective than their extraction form plants or chemical synthesis. The patent applications describe methods of obtaining compounds exhibiting pro-health properties including antioxidant, antimicrobial or anti-cancer activity.

WROCLAW UNIVERSITY OF ENVIRONMENTAL AND LIFE SCIENCES - POLAND

mateusz.luzny@upwr.edu.pl

Development of methods for obtaining dihydrochalcones - potential sweeteners in the food industry

The presented inventions describe biotransformation processes using microorganisms as catalysts to produce bioactive dihydrochalcones.

CLASS R

SPORT - LEISURE

ALGHALBI NOURZAN, ALGHAMDI JOORY, ZAMKAH ROA'A, TAYEB WED - SAUDI ARABIA

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Clean Me

A small device that can be attached to public gem equipment to alert the gem keepers of devices that need sanitization after usage and to show users which device is ready to use.

AL-SHAMARI HANAN KHAMIS - QATAR

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Runner guide belt for Visual impaired

It is the first running accurate location detector, simply it detects your accurate location in your running zone and it tells the runner the directions. It has Pozyx tag is an Arduino compatible shield that provides accurate positioning and motion information. The tag is meant to work in combination with the Pozyx anchors. However, every tag can also function as an anchor. The pozyx tag connects to an Arduino board using long wire-wrap headers which extend through the shield. This keeps the pin layout intact and allows another shield to be stacked on top.

FARZPOURMACHIANI MEHDI, NAGHIBI MASOULEH SIMIN, FARZPOURMACHIANI ALI, GORJI MAHMOODREZA, ZARIFI MONTAZER MEHRSHAD, SHIRZADI MOTLAGH AKBAR, FARZPOURMACHIANI HASSAN, RAJABI SINA, RAHMANZAD MASOULEH AHMAD, IZADI JORSHARI JALAL, BASIRI SALAR, BARAZANDEHTALAB MARYAM, SIABI DAVOUD (IVAZ PLUS) - IRAN

Phone +98 911 131 1749 • farzpourmachiani@gmail.com

An apparatus for group entertainment.

Proposed invention is a device used for entertainment in two and four persons group, girls or boys, rather than their ages. This exciting entertainment device is very safe and has no injuries, no need for electrical energy, designed for house and indoor environment with limited space , Increase physical activity in indoor environment for family members beside COVID19 health care proof, Increase body metabolism and decrease overweight rate and improve immune system in COVID19 pandemic quarantine, Decrease stress and depression , Economical because of using no electrical power , cost effective and suitable for family economic condition, and Vast age suitable from 10 to 100 years old ; are key features of presented invention.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Qoolmate x TTFIC

This device can be regarded as “the future ice pack” for immediate cooling without refrigerants or chemicals. Accurate temperature control is tailor-made for biomedical and first aid applications not limited to cold therapy, sports recovery, cryotherapy and heatstroke prevention. While hot and cold functions can both be applied to the device, it can be programmed with hot and cold cycles for better utilisation.

KANG MI HWA - SOUTH KOREA

3LS spring cushion

By improving the cushion of the fishing chair, even if you sit for a long time, you can sit more comfortably and enjoy fishing. Yoga, meditation, spine patients, the spine is fine even with long-term use

KANG SEONG JIN - SOUTH KOREA

billiard equipment

The EFFICIO Entertainment Pocketball® is an pocketball device of IoT system using sensors and LEDs, maximizing audiovisual fun. Sports and EDM combine to create new fun.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

Phone +852 3511 3429 • edithmak@nami.org • www.nami.org.hk

Smart Protection Materials for Ski

Winter sports like skiing and snowboarding are exciting activities for people, yet they could be dangerous as speed is involved. NAMI has developed the protective pads by using its smart protection material (SPM), offering higher impact protection even in ultra-low temperature, and avoiding injuries upon falls. It passes EN1621-1 test for impact protection.

TAIPEI CITY UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINESE TAIPEI

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Smart bicycle operation control system

Riding a bicycle, the system will obtain its speed, angles and detect the conditions of front, left, right and rear to be the controlling basis. If the system finds that the vehicle speed is too fast or there is an obstacle ahead, the additional rear brake will be activated to slow down the speed or even stop the vehicle. It will end up with the risk of falling or collision due to the improper braking sequence or over speed. Via Bluetooth you may connect the bicycle to the mobile app, therefore, the speed limit can be set from the app and the exercise data uploaded to the database as well. Also, the anti-theft system has been offered while it starts by means of APP to lock the rear wheel with the horse shoe lock. That the alarm goes off and the GPS coordinates will be transmitted to the mobile phone simultaneously will indicate the location of the bike. This device is appropriate for those kids who are the bicycle beginning learners.

TAIWAN HUIXIN TECHNOLOGY LTD. CO. - CHINESE TAIPEI

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Polymer Resonance Foot Machine

It can exercise the most important acupuncture, "Yongquan acupoint" on the soles of the human body in traditional Chinese medicine, making human healthier. According to WHO records, frequent massage of Yongquan acupoint can achieve these functions: to relieve head pain, dizziness and vertigo; to improve the meridian flow of the kidneys; to improve kidney function, and to improve bones healthier; decrease white hair or hair loss; to ease leg and muscle soreness after exercise. to reduce edema; to prevent colds; to improve nervous weakness problem, and insomnia.

WITHUS&EARTH CO., LTD. - SOUTH KOREA

A Generator for a Bike

Application of Arago disk, one of the basic principles of induction motor. Generates eddy current and induced current on the surface of the conductor to drive the generator.

CLASS S

PRACTICAL NOVELTIES - PRESENTS

ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT, THE GOVERNMENT OF THE HKSAR - HONG KONG

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Artificial Intelligent Nylon Optical Fibre Sensing Escalator Combs

The invention is an intelligent escalator comb with the re-engineered properties to improve the protection level against the intrusion of foreign objects and probability of jamming. It has advanced sensing features capable of catching the noise signatures generated by the objects in order to trigger an alarm to notify the management office to remove them in time through a mobile-apps.

JUNE.F CO., LTD. - SOUTH KOREA

Functional mat to assist baby's better quality sleep

This invention is created to help babies have a good quality sleep independently as if being in mom's arms, and so the parents are able to release the stresses caused from a physical engagement with the baby.

THE EDUCATION UNIVERSITY OF HONG KONG - HONG KONG

Phone +852-2948 8158 • hmkwan@eduhk.hk • www.eduhk.hk

Drug-Related Attentional Bias in Drug Abusers and Rehabilitated Drug Abusers

This system integrates eye-tracking technology and assessments to measure implicit attentional bias in (rehabilitated) drug abusers. The measurement combined implicit measures (Colour Stroop Task, Implicit Association Task, Dot Probe Task) with eye-tracking. Different from the traditional paper-based evaluation, this is the first project in Hong Kong using computerized implicit psychological tasks to assess drug abuse and abuse rehabilitation progress.

Portable Interactive Meditation Mirror

With unique portable and movable design, the "Portable Interactive Meditation Mirror" (PIMM) creates a novel experience of mindfulness practice and meditation through art and digital technology. PIMM with interactive and AI features targeted at children, minority group and elderly. This novel mediation learning platform helps users to comfort their heart and care their inner self.

CLASS T

PUBLICITY - PRINTING - PACKAGING

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

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Visible Light Triggered Secret Inks for Anti-counterfeit

NAMI developed a novel class of photochromic material which is excitable by visible light such as mobile flashlight via molecular engineering. The material shows good compatibility to various printing formulations. Therefore, secret QR codes and smart tags, which become visible and readable by a mobile device when being activated by mobile flashlight, have been realized.

SHENZHEN FICUS TECHNOLOGY HOLDINGS LIMITED - HONG KONG

Phone +852 9121 3238 • ficusinvestment@hotmail.com

"Anticounterfeit + Lottery" solution for consumer product protection

Unique patented anticounterfeit solution by applying advanced encrypted solution linked to national lottery system to provide a comprehensive total solution with anticounterfeit, interactive marketing and track and trace features

CLASS U

GAMES - TOYS

BEIJING METALLURGICAL EQUIPMENT RESEARCH DESIGN INSTITUTE CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Adjustable sintering flue gas circulation technology

Indoor high-speed roller coaster, a kind of large indoor amusement equipment, is designed and developed through BIM, virtual prototype, finite element, patented noise reduction and other technologies.

Space Mountain

Combining local myths and legends with natural beauty, it fully demonstrates the concept of safety, comfort and environmental protection, creating exquisite 3D color painting and color swing equipment, enabling tourists to experience the thrill and excitement that "people fly ahead and the soul is chasing behind" in the environment that integrates human and scenery.

NANO AND ADVANCED MATERIALS INSTITUTE - HONG KONG

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An Elastic Copolymer Filament with Controllable Shape Memory Effect

The invention is an elastomer filament that turns into a loop by stretching, and reverses to straight under a designable temperature. A revolutionary crystal-elastomer gradient co-polymer formulation and well-designed extrusion process were developed to achieve such controllable straight-to-loop shape memory effect. It has wide applications in toys, wearables, and medical devices.

CLASS V

PROTECTION OF THE ENVIRONMENT - ENERGY

AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY - POLAND

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The method of purifying polluted air in the region of the inversion layer

A method of reducing particulate matter concentration in a smog layer, resulting from the formation of a temperature inversion layer, during the period of an increased level of low emission (PM10 and PM2, 5). The essence of the invention is the creation of the shock wave cycle which destruct the inversion layer and allows for vertical air movements.

AMIN NOWSHAD, SHAKERI MOHAMMAD - MALAYSIA

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Plug-and-Play Home Energy Management System for Facile Smart Home Transformation

A novel system architecture and control algorithm using the XBEE technology demonstration for smart application for the renewable energy (RE) connected grid, where the overall power consumption, as well as the electricity cost of the premises, are optimized. The designed RE based home energy management system consists of novel smart controller and smart plugs that can monitor and control the overall power consumption of the premise.

APPALASAMY SUGANTHI - MALAYSIA

Phone +60165281956 • suganthi.a@umk.edu.my

Termicide : Liquid anti termite for household

Termicide is a liquid anti-termite which is developed using mainly compounds isolated from natural extract of termite. The formulated liquid repellent is an outcome from laboratory and intensive field testing. This novel termiticide works against pest termites by sensory repelling signal has been tested and proven to be effective as anti-termite for pest termites such as Coptotermes and Macrotermes.

AWAD KHALED MAHFOODH BA HUMAISH - YEMEN

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Network of life

It is a network that discharges air exhaust and gases resulting from human daily behavior (such as factories - homes - restaurants, cars, etc.) and also extracts dust from the air, and these exhausts are drained through a network connected to each other into a processing station to separate and transform each gas separately, an convert it into substances that humans can benefit from, and a the harmless gases are re-released into the air again.

BEIJING LIFIN-TECH CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

UAV intelligent inspection system for photovoltaic power station

UAV has high operation efficiency, high fault identification accuracy, and is applied to various types of photovoltaic power station inspection business.

BEIJING METALLURGICAL EQUIPMENT RESEARCH DESIGN INSTITUTE CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

“CKER” of air cleaner

Through this technology, the hot flue gas from the bellows at the head and tail of the sintering machine is mixed with the hot air in the third section of the sintering cooler via the dust collector and circulating fan, which is later led back to the circulating seal cover of the sintering pallet.

CHE OMAR ROHAYU - MALAYSIA

rohayu@uniten.edu.my

Vege-grout: Self-sustain Soil-stabilisation System (VEG3S)

VEG3S provides soil stabilization system consisting of vegetable bio grout and natural fibre geotextile produced by vegetable waste to prevent landslide for low-carbon city initiatives. Unlike an existing product, our product is self-sustain and free maintenance.

CHINESE RESEARCH ACADEMY OF ENVIRONMENTAL SCIENCES - CHINA

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Tower eco-filter

Soil and groundwater pollution is highly concealed, therefore, brillouin scattering radar (BS R) method was invented for the detection of soil and groundwater pollution. A tunable femtosecond laser was used as an excitation light source, moreover, a large-diameter silicon lens was used to converge and feed for rotating parabolic emitter.

Device and method for delimiting soil and groundwater pollution boundary by using brillouin scattering

The soil pollution is serious in China, especially the refractory organic pollution and heavy metal pollution. Relied on the principle of electron transfer, this technology used the bulk-loaded biochar to strengthen the electron shuttle between microbial and pollutants, thereby enhancing the ability of microorganisms to degrade refractory organic pollutants.

CHINGSHIN ACADEMY - CHINESE TAIPEI

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Electric heating Biomass Film

The principal of this invention is to recycle the unused part of some crops to produce a coating that can apply on almost all materials like wooden plank, plastic, carpet...etc. The coating is not only thin and flexible but also time saving after being charged. By a renovation process, it can replace the traditional heating system like burning the charcoal. It keeps people warm and prevents loss of temperature, thus improving users' comfort and consuming less electricity.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/kto

Aquatic Animal Postmortem Multimedia Analysis Platform

Aquatic animals face threats on their survivorships and attempts to quantitatively integrate these impacts remain scarce. Virtopsy provides virtual alternative for death investigation, which is integrated into the Cetacean Stranding Response Programme and modernised the characterisation and documentation of postmortem multimedia. Our pioneering platform permits holistic analysis on biological health and profile, and cause of death in aquatic animals worldwide.

CITY UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3442 6821 • maggie.mak@cityu.edu.hk • www.cityu.edu.hk/kto

An Energy-Free, Low-Cost and High Cooling Performance Passive Radiative Cooling Technology for Building Applications

Passive radiative cooling paint, a self-cooling technology, provides a sustainable and energy saving solution to the consumption of electricity in buildings. This self-cooling technology leads the way to eco-friendly and energy-free cooling without causing ozone depletion and greenhouse effect.

DALIAN UNIVERSITY OF TECHNOLOGY - CHINA

Phone +86 15041134018 • xue.1@dlut.edu.cn • www.dlut.edu.cn

Full-use and zero-emission» technology - conversion of agricultural residues to valued biofuels and fertilizer

The new technique can make full use of agricultural wastes (corn stover, livestock dung, etc.) to produce liquid biofuels, biogas and biofertilizer, which highly integrates feedstock pretreatment, multi-steps fermentation with various engineered strains, and product recovery. This technique behaves well with 100% feedstock utilization rate, no waste emission, and saves energy consumption by 20%.

DEPARTMENT OF ENVIRONMENTAL SCIENCE AND ENGINEERING, FUDAN UNIVERSITY - CHINA

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Rainbow swing in the cloud

Liftable submerged plant bed monitors the light intensity in real time through a light-sensitive sensor to adjust the height. Thus, submerged plants can grow well even in water body with poor water transparency.

Liftable submerged plant bed

Based on the principle of ecological competition, submerged and floating plants and membranes were combined as a spatiotemporal ecosystem to control cyanobacterial blooms.

Cyanobacterial blooms control : Innovative mode of plant ecosystem spatiotemporal construction

Tower eco-filter with sponge-like filler can increase the number and activity of microbiota there. The tower structure can remove more than 90% of N, P, BOD in rural domestic sewage through triple Anoxic/Oxic.

insertclass V

DERBARTANIAN JUAN CARLOS - ARGENTINA

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Installation for power generation through vehicular traffic

Platform to generate clean and sustainable urban energy through vehicular traffic in cities. Based on a hydraulic and mechanical system, it takes advantage of vehicular traffic at the time of breaking.

FUDAN UNIVERSITY - CHINA

Phone +86 13701933598 • jmchen@fudan.edu.cn • www.fudan.edu.cn

High-Resolution Biototoxicity Analyzer of PM2.5

A novel technology and equipment are invented, capable of real-time monitoring biototoxicity with a wide range of atmospheric PM2.5 concentrations (> 5 µg/m³) and high time resolution (30 min to 1 h) . It's a first approach to achieve online toxicity assay of PM2.5, which is critically important for early particulate pollution reporting from a toxicological perspective.

FU-HSIN TRADE & ARTS SCHOOL - CHINESE TAIPEI

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A dustbin with a dustpan and a broom as a suit

Home or public space will be set with dustbins and dustpans, to use with brooms to clean the environment. But dustbins and dustpans are independent individuals, a separate placement will occupy more space. The new creation relates to a dustbin with a dustpan, as a cleaning toolset. The utility model relates to a dustbin with a dustpan, which comprises a dustbin itself, a dustpan, and a broom. The outside of the dustbin body is designed to a concave storage bar space so that the dustpan can be embedded in the storage bar space after cleaning duties for reducing the dustpan occupied space. Besides, the connecting rod of dustpan and broom can be made of complex connecting rod branch sleeve, which can be used to receiving the connecting rod and the bar closed to the shortest for further reducing occupied space and cleaning out when both spread out.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Intelligent adaptive Heat Recovery VRF system

The air-cooled screw chiller features economical operation, self-developed variable capacity compressors with permanent magnetic synchronous motor, advanced shell-and-tube heat exchangers, finned tube heat exchangers with equal flow distribution, self-adaptive fans and free cooling technology.

GUANGZHOU HKUST FOK YING TUNG RESEARCH INSTITUTE - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

High throughput 3D laser scanning imaging system for plant phenotype measurement

Using sulfur-containing substances as a new type of Electron acceptor, the project developed Biodegrade-Electron transfer with Sulfur metabolism Integrated technology (BESI) and its integration process for the treatment of oilfield wastewater, industrial wastewater containing heavy metals, spraying wastewater, landfill leachate and refractory wastewater.

HANGZHOU COOLKIND BOAT TECHNOLOGY CO., LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Water cleaning long-arm boat

Long-arms Water Cleaning Boats are highly-intelligent and efficient, pollution-free, and cost-effective, which can automatically collect all floating objects in a wide water area.

HONG KONG APPLIED SCIENCE AND TECHNOLOGY RESEARCH INSTITUTE (ASTRI) - HONG KONG

Phone +852 3406 2800 • corporate@astri.org • www.astri.org

Advanced mobile energy technology for scalable and safe energy storage for smart robotics applications

Advanced mobile energy device technologies with scalable energy storage and inherent safety control to meet the demands for emerging smart mobile robotics applications suitable for unattended user scenario.

HONG KONG PRODUCTIVITY COUNCIL - HONG KONG

Phone (852) 2788 6202 • hkpcenq@hkpc.org • www.hkpc.org

Circulating Bed Biofilm Reactor for Carbon Capture from Sewage

By immobilising bacteria as biofilm on floating carriers and using creative mixing strategy, this sophisticated invention uses only 20% of energy as compared with the conventional biological treatment system. Rather than consuming lots of energy for purifying sewage, this low-energy bioreactor can capture over 90% of carbon from sewage to produce biogas as renewable energy. What makes it more advantageous is that this bioreactor only occupies 30% of the conventional system's footprint, thus saving plenty of land resources from sewage treatment works.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 15072438801 • caichen@hust.edu.cn • www.hust.edu.cn

High Power Density Power Electronic Conversion

High power density power electronic conversion is the key of future green energy development and utilization. This project proposes a series of inventions to design the power electronic modules and converters with ultra-high power density, so as to satisfy the requirement of future green energy development and utilization.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 13638641319 • shenyue1213@hust.edu.cn • http://sysdoing.mat.hust.edu.cn/index.htm

A Stirred Self-stratified Battery for Large-scale Energy Storage

A rechargeable stirred battery with a gravity-driven self-stratified architecture that contains a zinc anode at the bottom, an aqueous electrolyte in the middle, and an organic catholyte on the top. Stirring is applied to promote discharge/charge reactions. The battery can be assembled in 10 s and then cycle for 500 rounds with no capacity loss.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 18963983210 • liuxy@hust.edu.cn • www.hust.edu.cn

Health Monitoring and Warning System for Wind Turbine Blades Based on Acoustical Features

A remote non-contact on-line health monitoring and warning system for wind turbine blades based on acoustical feature and BP neural network, it consists of microphone, signal acquisition and communication module, optical network, monitoring server and application software for use in judgment and early warning of wind turbine blade damage.

HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY - CHINA

Phone +86 13638641319 • shenyue1213@hust.edu.cn • http://battery.hust-wuxi.com

Ultrasonic Lithium-ion Battery Scanning System

Ultrasonic Lithium-ion Battery Scanning System, is an equipment which uses ultrasonic C-scan to detect the structural changes inside lithium-ion batteries, including electrolyte wetting, gassing, lithium plating and state-of-charge distribution, etc.

INNOWACYJNE PRZEDSIĘBIORSTWO WIELOBRANŻOWE POLIN SP. Z O.O. (INNOVATIVE MULTI-INDUSTRY COMPANY POLIN LTD) - POLAND

Phone +48 696 014 225 • adam.k.swierczynski@gmail.com • www.wynalazki.com.pl

Method and device for the optimization of solid fuels combustion process in grate power boilers

The method and device for the optimization of solid fuels combustion process in grate power boilers. With the proposed solution, the boilers will obtain an improved functionality of burning waste fuels, including coal sludges and traditional hard coals, especially coals with high moisture content.

INSTITUTE OF ENERGY RESEARCH OF JIANGXI ACADEMY OF SCIENCES - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A novel passive solar technology combined with phase change materials for buildings in hot summer and cold winter regions

A novel PV-Trombe wall system combined with phase-change material

By converting solar energy into both power and passive space heating in winter, this BIPV/T system specifically uses thermal feature of PCM to enhance PV efficiency and avoid building overheating issue in summer.

IVANOVO STATE POWER UNIVERSITY - RUSSIA

Phone +7 910 6674727 • golov@ispu.ru • www.ispu.ru

Automated point of commercial metering of electricity

Automated point of commercial metering of electricity is an innovative solution for the fast organization of accurate commercial metering of 6 (10) kV electricity without breaking the wires with functions for determining the location of damage and determining quality indicators.

KHIYARI EZZITOUNI - SWITZERLAND

Phone +4177 914 91 27 • olivierelectrofrroid@gmail.com

Refrigeration device

It ensures the continued operation of refrigeration devices in the event of a blockage of the water evaporator tube, saving refrigerant gas consumption, dispensing technology, water evaporation in the heat exchange process between the condensate cooling air and water, air filtration and the user notification system. The device will ensure maintenance and operation in case of fan failure.

KOREA EAST-WEST POWER - SOUTH KOREA

A creating method of flying route of a drone that is for diagnosis of floating solar panels by Geographic Information System analysis

Safety accidents can be prevented with equipment inspection, but floating solar panels are often changing position. The invention has an automated drone inspection that combines GIS and IoT technologies.

KOREA EAST-WEST POWER - SOUTH KOREA

Solar array automatic diagnosis using CAD design drawings for solar array installation

Efficient with thermal imaging cameras. Traditional methods were manual. The invention checks solar panels using autonomous driving drones, automatic diagnostic to check faulty panels.

LEE HYEONJEONG - SOUTH KOREA

Ttrain-shape modular self-watering planter

It can grow plants using the sub-irrigation method. It uses gravitational potential energy, so it does not need electricity. Able to water multiple pots at the same time so you can grow plant easily

LEE KI HYUK - SOUTH KOREA

Home cosmetics maker

The re-use of stencils minimizes carbon emissions. Customized raw material combination allows skin, lotion, cream, and ointment to be made and used on the spot.

LEE YOUNG SEO - SOUTH KOREA

Fuel additive for reducing greenhouse gases, nitrogen oxides and particulate matter

This technology is a combustion accelerator containing useful organic metal compounds, which can be added to fuel to improve the performance of boilers and engines and also to reduce discharged pollutant.

LINYI UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A Novel Heat Storage and Defrosting System for Air Conditioning Units

The invention relates to a novel heat storage and defrosting system for air conditioning units, which comprises an evaporator, an accumulator and a solar collector, and a novel double-layer tube defrosting evaporator has been developed in this invention.

MONNIN HUBERT - SWITZERLAND

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www.facebook.com/Éoliennes-renouvelées-Renewed-wind-turbines-Erneute-Windmühlen-101870615264318

Renewed wind turbines

Renewed wind turbines: all the experience of sailors and sailboats power at the service of energy production using wind turbines by improving

MUJAHED MAWADAH ABDUL LATIF - SAUDI ARABIA

Phone +966580862145 • Mwdh20@outlook.sa • www.uqu.edu.sa/studaff/83391

I Chair

A sophisticated chair powered by solar energy is available in all public places to provide us with cooling or heating features, charging for a mobile phone and the possibility of purchasing from the self-vending machine in the chair.

NANJING UNIVERSITY - CHINA

Phone +86 13813933192 • jbi@nju.edu.cn • https://hjxy.nju.edu.cn/new/szdw/jshou/2014/1124/35.html

EIL system

Integrating user portrait big data, artificial intelligence and risk modelling, based on few inputs (at most 10 parameters), our invention (demonstrated as a web-based software, EIL system) provide the environmental risk ratings (3-5 minutes, >95% accuracy rate) and personalized on-site risk survey action plan for the enterprise, and predicted the maximum credible accident loss (<4 hours, 90% accuracy rate). EIL system not only provides timely and reliable data for insurance companies to do the risk management, underwriting and pricing, but also cuts the original one-case cost by 90%.

NANJING UNIVERSITY - CHINA

Phone +86 13739199868 • yk_dada@163.com • www.nju.edu.cn

Induction-heating assisted oleophilic roller for high throughput recovery of crude oil spill

It is an Induction-heating assisted oleophilic roller for high throughput recovery of crude oil spill. A novel technology was developed for fast cleanup and collection of viscous oil spill from sea surface based on nanomaterials. Extremely high recovery rate (>99.9% oil recovery) and cleanup efficiency (>1, 000 kg-m⁻²-h⁻¹) were achieved for fast recovery of large-scale oil spills.»

NANJING UNIVERSITY - CHINA

Phone +86 18205186927 • hdhu@nju.edu.cn • https://hjxy.nju.edu.cn/kytd/2014/1216/234.html

Innovative wastewater treatment process for cleaning wastewater

The invention discloses an innovative wastewater treatment process for cleaning wastewater. It is a modular system including ABN, sequential adsorption, and anaerobic sludge blanket reactors. It can reduce high-risk pollutants and effluent toxicity by 70% and 40%, respectively, compared to conventional processes. This invention has been successfully applied in ten provinces and cities in Asia.

NATIONAL YUNLIN UNIVERSITY OF SCIENCE & TECHNOLOGY - CHINESE TAIPEI

Phone +886 956 965 553 • wuty@gmail.yuntech.edu.tw

Copolymer based on 4, 4'-bis(carbazol-9-yl)-2, 2'-dimethylbiphenyl and bithiophene and its application on satisfactory long-term switching stability and high optical contrast smart window

A copolymer based on 4, 4'-bis(carbazol-9-yl)-2, 2'-dimethylbiphenyl (CDBP) and bithiophene (BTP) is electrodeposited on an ITO electrode. Energy-saving electrochromic device (ECD) based on P(CDBP-co-BTP) as anodic polymer layer and poly(3, 4-(2, 2-dimethylpropylenedioxy)thiophene (PProDOT-Me2) as cathodic polymer layer is fabricated. P(CDBP-co-BTP)/PProDOT-Me2 ECD shows three different colors (gray, dark gray, and blue) at different applied potentials. The optical contrast ($\Delta T\%$) of P(CDBP-co-BTP)/PProDOT-Me2 ECD is found to be 30 % at 580 nm and the coloration efficiency of P(CDBP-co-BTP)/PProDOT-Me2 ECD is calculated to be 349 $\text{cm}^2 \cdot \text{C}^{-1}$ at 580 nm.

PROFESSOR JÓZEF KOSACKI'S MILITARY INSTITUTE OF ENGINEER TECHNOLOGY - POLAND

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Novel Modular Solar Charger with Power Bank (NMSCPb)

Novel Modular Solar Charger with Power Bank (NMSCPb) is the result of Polish engineering idea and meets the expectations of the market regarding the possibility of powering devices under all conditions and in any terrain. This handy and portable device is capable of generating electricity by using solar radiation and storing energy for later use. The modular construction of NMSCPb is an innovative solution allowing adjustment of its two chief components: a photovoltaic module (the possibility of implementing PV cells of various generations) and an energy storage (supercapacitors, lithium-ion batteries) to the user's needs and is dedicated to field applications. Two types of photovoltaic modules can be used in the charger: based on commercially-available silicon solar cells or based on innovative printed dye-sensitized solar cells manufactured by ML System S.A company. Selection of a specific solution depends on the operating conditions and energy requirements of the energy receiver. Silicon cells generate more energy in the peak, while dye-sensitized cells provide more stable yields throughout the day. It is also possible to integrate both of these technologies to maximize energy yields. The energy storage is based on supercapacitor systems of various configurations.

QINGDAO HAIER AIR-CONDITIONER GEN. CORP., LTD. - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Degerming chamber technology of air-conditioner

Haier air conditioning waterfall air washing technology is the first in the world, which can remove 7 kinds of air pollutants and add 2 kinds of air health factors.

Electrochemistry technology for removing contaminants in soil

Degerming chamber technology: AC frosts to induce the dust to peel, heats up to form a 56 chamber and hold for more than 30 minutes, and rapid cooling promotes the germs death.

RESEARCH INSTITUTE OF CREATIVE EDUCATION - VIETNAM

Phone +84 936069999 • ricevietnam.ins@gmail.com • www.rice-ins.com

Synthesization of ZnO/Fe3O4 for herbicide treatment on the fields in Middle Vietnam

ZnO is one of the most widely used semiconductor materials all over the world. The visible photocatalytic activities of ZnO can be used to photodegrade organic chemicals and applied in any regions such as water and air treatment. The ZnO/Fe3O4 nanocomposite with high magnetic properties can be easy to recycle after use. Herbicides were commonly used in agriculture to protect the crops, but they also created environmental pollutions. One of the most important missions is to degrade herbicide in the fields to reduce environmental pollution.

RESEARCH INSTITUTE OF CREATIVE EDUCATION - VIETNAM

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Response surface optimization of the removal of antibiotics from aqueous solution by heterogeneous Fenton process using iron-modified fly ash

In the present world, the iron-impregnated fly ash (Fe-FA) was used as an effective heterogeneous Fenton-like catalyst for the degradation of antibiotics in aqueous solutions. Effects of some key operating parameters on the treatment efficiency were investigated, optimized by response surface methodology, and discussed.

ROMERA ORTIZ JUAN - SPAIN

Phone +34 635 33 93 79 • juanromera@hotmail.com

Ultraviolet radiation disinfection system installed in vehicles for the transport of people with a capacity not exceeding seven seats

Disinfection system using ultraviolet light radiation installed on the underside of the vehicle for disinfection by projecting ultraviolet light on the roads through which it circulates. Effective for the disinfection of bacteria, viruses, micrococci.

ROYNARIN WIRACHAI - THAILAND

Phone +6689 771 4294 • wirachai.r@rmutt.ac.th • www.rmutt.ac.th

5kW air Compress Wind Machine for Water Treatment Process and Industrial Pneumatoc Application

The wind machine was designed for pumping and compressed the air for Industrial use or water treatment process. This wind turbine was special designed for Low wind speed zones.

SAJOMSANG WARAYUTH - THAILAND

Phone +6696 878 9566 • warayuth@nanotec.or.th • <https://www.nanotec.or.th>

Hydrophilic nanofiltration membrane for water purification

Low-pressure nanofiltration hollow fiber membrane module. Three thin film composite layers were designed and coated on membrane surface to make a novel flexible and hydrophilic membranes. This membrane module shows high water flux and is able to utilize under low pressure (2 bar) for water softening and desalination in tab water.

SALLEH HANIM BINTI - MALAYSIA

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Cantilever bio-based hybrid triboelectric nanogenerator (CBBH-TENG) utilising palm kernel shell waste

This invention is a hybrid triboelectric and piezoelectric nanogenerator (CBBH-TENG) utilising palm kernel shell waste. It has potential output of 150% more than the conventional triboelectric nanogenerator (TENG). The application is to harvest a sufficient amount of power for a low power sensor.

SANGEORZAN MIRCEA - ROMANIA

Phone +40730108912 • cristina73daniela@gmail.com • www.motoreco.ro

The R.E. (ramp - elasticity) motor - 100% ecologic motor

The functionality of this motor employs several elements of Physics, like : the decomposition of forces in a ramp, the tangent component of the force, the elasticity of a material and action and reaction.

SHANGHAI YUKE ENVIRONMENTAL ENGINEERING CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Smart Pressure Energy Composite-Type Seawater Desalination System

Our system adopts the flexible processing in the form of cycles. The concentrated water is directly returned to the system energy recovery machine. After it meets the required concentration through several cycles, the discharge can be carried out. The energy of the whole system is almost recovered to an overall efficiency 99%-99.5%, which is much better than 92% by the current solutions in the market.

SHECO - SOUTH KOREA

Apparatus for skimming a floatable layer from a water surface containing oil separator

Apparatus for skimming afloatable layer from a water surface containing oil separator (hereinafter referred to as the Sheco Robot) can be controlled with a remote control, and it is a specialized robot to automatically manage small accidents that account for 90% of all oil spill.

SHENYANG UNIVERSITY OF CHEMICAL TECHNOLOGY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

The environment-friendly biobased functional rubber additives

The project researched and developed modified starch to replace a large amount of carbon black reinforcement system with high pollution, and use modified waste cooking oil to replace carcinogenic petroleum-based aromatic oil plasticizers.

SICHUAN ENERGY INTERNET RESEARCH INSTITUTE, TSINGHUA UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Renewable Energy Virtual synchronous generator

This invention adopts the underwater positioning technology of multi-sensor fusion, proposes the buoyancy control method under different operation modes, and ultimately realizes the accurate positioning and robust accessibility in the complex underwater environment.

SICHUAN RONGCHUANG NEW ENERGY POWER SYSTEM CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Fuel Cell Hybrid Power System for Rail Traffic

For the high power demand for rail transit, a 100kW fuel cell power system is developed. In addition, the optimal control method based on cooperative principle and the structural optimization method are invented for this system.

High power and high performance fuel cell hybrid power system

The high power and high-performance fuel cell hybrid power system is successfully applied in the world's first fuel cell hybrid power tramway. This hybrid power system is integrated by two fuel cell system, two supercapacitor system and two lithium battery system for the first time in the world.

SINO INNOVATION LABORATORY LIMITED - HONG KONG

Phone +852 2132 9101 • innolab@sino.com • www.sinoinnolab.com

Mobile indoor air quality (IAQ) robot

This self-navigating IAQ robot serves as an indoor air quality detector and display for continuous inspection up to nine IAQ parameters including PM1, PM2.5, PM10, CO, CO2, VOC, HCHO, temperature and humidity. Property manager can access real-time IAQ data on its screen and online dashboard. Hence, corresponding improvement and remedy can be implemented immediately.»

SOUTHEAST UNIVERSITY - CHINA

Phone +86 13851787408 • seuwumin@seu.edu.cn • <http://seuwumin.cn/>

Mobile In-Service Monitoring Wastewater Treatment Equipment»

The Mobile In-Service Monitoring Wastewater Treatment Equipment for high-risk and refractory wastewater has the following characteristics: (1)Universally applicable, suitable for wastewater in many fields. (2)High mobility, easy for site selection and complex terrain assignment. (3)High efficiency and no secondary pollution after treatment. (4)Short process flow and low treatment cost. (5)High security, automated treatment process with real-time data monitoring.

SOUTHEAST UNIVERSITY - CHINA

Phone +86 17714196356 • suyang.zhou@seu.edu.cn • www.seu.edu.cn

Integrated Energy Real-Time Simulation Equipment (IES-Sim)

The invention is a real-time hardware-boosting simulation equipment for simulating the integrated energy system. It is able to simulate the operational and fault states of different energy networks including electrical, gas, heating, cooling and steam network in different time-scales, which can support the renewable energy consumption, network reliability and design verification of different energy networks.

SUZHOU HONBASE BIO-ENVIRONMENTAL TECHNOLOGY CO., LTD - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

An Intelligent Food Waste Disposal Equipment

This equipment includes mixing, heating and insulation, air circulation, deodorant and electric control system. Food waste, biological digestant and sawdust are mixed in the equipment, and the organic matter is degraded into organic fertilizer by the EM microbial aerobic process.

THANGARAJU SAVITHRY K. - MALAYSIA

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Light weight uav for solar energy plant inspection

Manual inspection will take a longer time to complete the whole plants. Usually, people will choose a multirotor type as they easily controlled. Therefore, this project is build to introduce a single rotor as an inspection device with a solar powered medium.

THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3943 3458 • cathywong@cuhk.edu.hk christineleung@cuhk.edu.hk» • <http://cuhk.edu.hk>

PhotoAir : Measuring Indoor and Outdoor PM2.5 with a Mobile Phone

By simply taking a photo with a mobile phone, PhotoAir APP can measure PM2.5 concentrations indoor or outdoor, day or night in real time regardless of weather conditions. Grounded on physical optics and empowered by deep neural networks, this APP provides unprecedented levels of accuracy and efficiency in measurements and an incomparable convenience and flexibility over traditional instruments.

High-sensitive Gas Sensing and Control System

This invention adopts advanced laser spectroscopy technology and artificial intelligence algorithm providing the concentration, temperature and pressure of gases in real time. This invention can be directly applied to the fields of environmental protection and medical treatment, including exhausts monitoring in power plants, process monitoring in petrochemical industry, vehicle emission detection, and components monitoring of patient breath.

THE CHINESE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 3943 3458 • cathywong@cuhk.edu.hk christineleung@cuhk.edu.hk» • <http://cuhk.edu.hk>

Harvesting energy from walking human body

A lightweight energy harvester utilizing piezoelectric macro fibre composites is invented for capturing energy from the motion of the human knee and convert it into electricity.

THE EDUCATION UNIVERSITY OF HONG KONG - HONG KONG

Phone +852-2948 8158 • hmkwan@eduhk.hk • www.eduhk.hk

Utilization of Waste Residues as Resources in Producing Sustainable Construction Materials

Eco-construction materials are produced using waste residues collected from water and wastewater treatment processes and coal-fired power plants. Waste sludge (i.e. alum sludge, sewage sludge, and sewage sludge ash) and combustion by-products (i.e., bottom ash and fly ash) successfully replace aggregate, sand, and cement as the sustainable resources in making eco-concrete paving blocks to fulfil relevant engineering and environmental standards.

THE HONG KONG POLYTECHNIC UNIVERSITY - HONG KONG

Phone +852 9439 6930 • idy.to@polyu.edu.hk • www.polyu.edu.hk/web/

Smart Monitoring System for Urban Tree Management

It employs smart sensing technology to measure the tilting angles and directions of tree displacement, which enables large-scale daily remote monitoring via low-power wireless transmission technologies - LoRaWAN and NB-IoT. By applying Spatial Big Data Analytics with AI on the GIS-based platform, the leaning trend and its potential risks correlated to tree failure factors are investigated.

THE HONG KONG RESEARCH INSTITUTE OF TEXTILES AND APPAREL - HONG KONG

Phone +852 2627 0180 • info@khrita.com • www.hkrita.com

Cellulose-based PFC-free Functional Surface Finish

Development of a new PFC-free water repellent surface finish by using natural and recycled hydrophobic cellulose powder.

Carbon Dioxide Capturing Cellulosic Materials

To control CO₂ level in atmosphere by TEMPO mediated oxidation of cellulose and the amine functionalisation via grafting reaction.

THE UNIVERSITY OF HONG KONG - HONG KONG

Phone +852 2299 0123 • evatam@tto.hku.hk • www.tto.hku.hk

Direct Thermal Charging Cell (DTCC)

Direct thermal charging cell is a new invention for converting low-grade heat to electricity under isothermal operation, surpassing all existing systems. It has been moved from academic research toward real products and will open many applications in low-grade heat recovery and body heat technologies, bringing tangible economic and environmental benefits.

TONGJI UNIVERSITY - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Wastewater treatment plant sludge integrated disposal technology of thermal hydrolysis pretreatment, low temperature vacuum drying and land application for energy and resources recovery

Wastewater treatment plant sludge integrated disposal technology of thermal hydrolysis pretreatment, low temperature vacuum drying and land application for energy and resources recovery.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13810103040 • qxchen@mail.tsinghua.edu.cn • <https://www.tsinghua.edu.cn/index.htm>

A Dispatch Technique for Mitigating Market Manipulation in Electricity Markets

A dispatch technique for mitigating market manipulation in electricity markets : The invention can identify participants' potential market power in electricity markets and prevent their manipulation on market prices, to maintain market order of power systems. The invention has been applied in 25% of electricity spot markets in China, reducing 521.5 M\$ costs.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13810988137 • wangyujue@tsinghua.edu.cn • www.tsinghua.edu.cn

Advanced electro-peroxone (EP) technology for water and wastewater treatment

Advanced electro-peroxone (EP) technology for water and wastewater treatment : By ingeniously coupling ozone and electrochemical technologies, the EP process overcomes the major drawbacks of conventional advanced oxidation processes (AOPs), e.g., ozonation, electrolysis, and Fenton processes, and greatly improves the performance of water and wastewater treatment in many aspects.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13810593267 • xhzhou@mail.tsinghua.edu.cn • <http://www.env.tsinghua.edu.cn/info/1137/1028.htm>

An automated online optical biosensor for semi-continuous determination of total microcystins in surface waters

An automated online optical biosensor is invented for real-time determination of total microcystins (TMs) in surface waters based on total internal reflection fluorescence and indirect competitive immunoassay. It includes a new monoclonal antibody against TMs, an advanced reusable planar waveguide biochip and online instrument integration.

TSINGHUA UNIVERSITY - CHINA

Phone +86 18548911918 • houdeyi@tsinghua.edu.cn • <https://www.tsinghua.edu.cn/enven/info/1052/1992.htm>

An integrated system for low-disturbance restoration of contaminated land

Our integrated system for low-disturbance restoration of contaminated land combines nature-inspired contaminant immobilization, an in-situ reaction zone, and a smart self-healing barrier. The system reduces energy and material requirements and has excellent long-term performance.

TSINGHUA UNIVERSITY - CHINA

Phone +86 13810091267 • ruinaxu@tsinghua.edu.cn
<http://www.depe.tsinghua.edu.cn/depeen/info/1034/1121.htm>

Differential Pressure Pulse Decay Instrument Tight Rock Permeability Measurement

A Differential Pressure Pulse Decay (D-PPD) method to determine ultra-low permeability in shale matrix. By using this method, a much more precise Shale Matrix Permeameter has been commercialized and employed by two of the largest oil companies for shale gas/oil exploration in China.

TSINGHUA UNIVERSITY - CHINA

Emergency Department for Drinking Water

The "Emergency Department for Drinking Water" is an integrated system including the emergency water treatment technologies, equipment and software to fight against various pollution accidents occurred in source water. It can address over 100 regulated contaminants including pesticides, aromatics, odorants, heavy metals, reductive toxins, pathogens, and volatile chemicals.

TSINGHUA UNIVERSITY - CHINA

Phone +86 15116952251 • songyc@tsinghua.edu.cn • www.tsinghua.edu.cn

High-Valued Products Derived from Organic Wastes Using Advanced Hydrolysis Technology and Its Utilization

Advanced hydrolysis technology was used to transfer organic waste (e.g. food waste, garden waste) into high-valued products, which were successfully applied in wastewater denitrification, soil remediation and biomass fuel preparation, providing a green and economic way of organic waste utilization.

TSINGHUA UNIVERSITY - CHINA

Phone +86 18600891857 • Sci@tsinghua.edu.cn • www.tsinghua.edu.cn

Low-cost non-disassembly pollution-free utilization of retired EV batteries

A new technology for low-cost non-disassembly pollution-free utilization of retired EV batteries was developed, in which the continuous energy flow from each battery module will be discretized and digitized into a number of "energy slices", and thus retired EV battery modules with different capacities and health conditions can be used harmonically at the energy slice level in a "best effort" fashion.

TSINGHUA UNIVERSITY- ERSHUN DU - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Panoramic Operation Simulation Platform for Integrated Energy Systems

A 8760-hour year round operation simulation software for the integrated electrical-gas-heating energy system to improve the energy efficiency and reduce carbon emission.

TSINGHUA UNIVERSITY-WEI HU - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Intelligent Coordinated Control Technology of Grid-Generator for Complex Power System

The intelligent coordinated control technology system of Grid-Generator is established. The closed-loop control is realized for the first time in the world, reducing the power grid loss by 5-8% and coal by 1-2%.

Intelligent Assessment of Power System Transient Stability Based on Deep Learning

An intelligent assessment method for power system transient stability based on deep learning is proposed, which can effectively improve the assessment accuracy and economic benefits, avoid the blackout.

Intelligent analysis technology of distribution network based on power big data and Artificial Intelligence AI

Based on AI, the topology identification and real-time line-loss reduction method for distribution network is proposed for the first time in the world, which can significantly improve the economic benefits.

Active splitting and fast recovery technology for large power grid in case of disaster

A method of active splitting and fast grid-connected restoration in large power grid under disasters is proposed for the first time, which avoids power system blackout and achieves remarkable economic benefits.

TSINGHUA UNIVERSITY-WU YUXIN - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

A novel water and energy saving coal-firing drum boiler using saline water in heavy oil recovery

A novel water and energy saving coal-firing drum boiler using saline water in heavy oil recovery. The nature circulation water dynamics with the staged evaporation was proposed. The treated recovery wastewater is recycled to save energy and water.

UNIVERSITY OF SCIENCE AND TECHNOLOGY BEIJING - CHINA

Phone +86 10 64466244 • geneva_beijing@163.com • www.inventions-gb.com

Nuclear Radiation Detection Using Smartphones and Surveillance Cameras

This invention is detecting the nuclear radiation using smartphones and surveillance cameras directly based on processing videos.

VILLALBA HERNANDEZ MANUEL - SPAIN

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Boat & System for both controlling invasive plant species and sewage treatment in coastlines

Boat for cleaning waters in seas, lakes and rivers, sterilizing invasive species due to the action of heat on the deck of the vessel and generating gas on the digesters.

WANTHONGCHAROEN SUWANAN - THAILAND

Phone +6664 159 2454 • suwanan@csi.ac.th • www.csi.ac.th

IonSense+

IonSense+ is a personal device for arsenite (As³⁺) detection the IonSense+ is an electrochemical sensor constructed using arsenite selective membrane. The membrane has been developed using hybrid plasticizers technology, which improves specificity and sensitivity of the sensor to arsenite.

WONG LEONG SING - MALAYSIA

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Red biocement: The essential binder for sustainable construction

Red biocement is produced from the newly discovered Bacillus endospores of calcareous clay in the natural environment. It is an environment-friendly solution to ordinary Portland cement as it does not require thermal energy in its production. A green ecosystem of producing construction materials can be established in the sense that the Bacillus endospores can germinate sustainably under favorable conditions for the biocementation process to occur.

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High-strength and high-conductivity catenary of high-speed railway

We invented a strong and conductive catenary to support China's railway to achieve 486.1km/h, which is the world's highest operating speed.

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Non-contact Traveling Wave Sensor and Accuracy Fault Location System in Power Grid

The new permanent magnetic traction motor was installed in the first permanent magnetic high-speed train in China for commercial operation. Featuring the highest efficiency worldwide, each train has saved more than 2 million kilowatt-hours of electricity per year.

A new permanent magnet traction motor

Lead/lead-bismuth cooled fast reactors (LFR) are fourth-generation nuclear systems with the most potential. The control of an LFR is dependent on the accuracy of measuring lead/lead-bismuth melt mass flow, and the corrosion from lead/lead-bismuth melt leads to limited lifespan and the poor accuracy of traditional flowmeters.