**46th Geneva International Exhibition of Inventions**

**HKU’s Awarded Inventions**

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| **Inventor** | **Invention** | **Awards** |
| Professor HUI Shu Yuen, Ron, Department of Electrical and Electronic Engineering | Passive LED Power Driver: a Smart and Environmental-Friendly Street Lighting Technology  Passive LED drivers developed under the project were tested in 2015 in Heshan City, Guangdong in over 100 street lamps. Zero failure rate was recorded for a three-year trial period. This has been the world’s first and only “sustainable LED street lighting system” that meets the three sustainability criteria of high energy efficiency, long product lifetime and recyclability. Currently, patent protection for the invention is being sought in 27 countries around the world.  More Info about the research:  https://www.hku.hk/press/news\_detail\_17226.html | 1. The Prize of Patent Office Of Cooperation Council for THE ARAB STATES OF THE GULF – GCCPO 2. Gold Medal with Special Recognition by the International Jury of Experts |
| Professor KWONG Yok Lam and Professor KUMANA Cyrus Rustam, Department of Medicine  Descriptions | Arsenol®: The First Oral Formulation of Arsenic Trioxide  Arsenol® is a drug developed entirely in Hong Kong, having a bioactivity similar to the intravenous formulation, but has lower peak plasma arsenic concentrations, hence a lower cardiac toxicity. Arsenol® is also convenient and safe for outpatients, rendering long-term therapy feasible and a massive saving in hospitalization cost. | Gold Medal |
| Professor WU Wutian and Mr LAI Hei Ming, School of Biomedical Sciences | Development and Applications of Next Generation Histology for 3D Interrogation of Human Brain  OPTIClear is developed based on the novel concept of using three key components: (1) A lipid-soluble, membrane refractive index (RI) adjusting agent: selectively adjusts the RI of the lipid-rich compartments of the tissue (2) A water-soluble, cytoplasmic refractive index adjusting agent: selectively adjusts the RI of the aqueous compartments of the tissue (3) A physical homogenizing agent: facilitate true homogenization of the above two agents and the tissue components to achieve better optical homogeneity. Light is bent as it passes through the boundary of different transparent media due to their differences in RI, leading to a perceived boundary. Therefore, one should adjust the RI of each medium to a defined value such that they are equal to each other to minimize the bending of light paths, hence no perceived boundary can be seen and the tissue would become transparent.  More Info about the research:  https://www.hku.hk/press/press-releases/detail/17641.html | Gold Medal |
| Professor YEH Garon, Anthony, Dr ZHONG Teng, Dr YUE Yang, Department of Urban Planning & Design | Angle Difference Method for Vehicle Navigation in Multilevel Road Networks | Gold Medal |
| Dr KONG Tiantian, Dr LIU Zhou, LI Jingmei, Dr SHUM Ho Cheung, Prof WANG Liqiu, Department of Mechanical Engineering | Efficient and Rapid Mixing of Highly Viscous Fluids  Mixing of fluids is widely used for making multi-functional materials and triggering chemical and biological reactions. However, mixing of viscous liquids is challenged by the large resistance of deforming liquid interfaces. Here, we introduce an electrical method to deform the interfaces of viscous jets. It can effectively address the challenges in mixing of viscous liquids. Besides, our mixing technique supports a tunable degree of mixing by manipulating the power of applied electricity. Furthermore, this method inspiringly offers a strategy for mixing and dispensing in one step, which is suitable for mixtures that have a short lifetime before dispensing. | Silver Medal |
| Mr KULPER Sloan Austin, Professor LU Weijia, William, Dr FANG Xinshuo, Christian, Department of Orthopaedics and Traumatology | Anti-penetration Bone Implant Device and Method  It is a device for reducing the stress in bone tissue by an implant which includes an expandable tip that increases the contact area between the bone tissue and the implant. | Silver Medal |
| Dr Li Xuechen, Department of Chemistry | Development of Next-Generation Antibacterial Drugs  Daptomycin is used in the treatment infections caused by Gram-positive organisms. Total chemical synthesis over biosynthesis of Daptomycin achieved by the HKU researchers allows making of new Daptomycin analogs that fight against resistance strain much easier.  More Info about the research:  https://www.hku.hk/press/press-releases/detail/17235.html | Silver Medal |