



Issue 50 (December 2023)

Faculty Achievement



College of Engineering

20 members of the College were named Highly Cited Researchers 2023 by Clarivate Analytics.

Name	Category
Prof CHEN Guanrong	Engineering
Prof Paul CHU	Cross-Field
Prof Gary FENG	Engineering
Prof HE Jr-Hau	Cross-Field
Prof Alex JEN	Materials Science
Prof LEE Chun-Sing	Cross-Field
Dr LIANG Guojin	Cross-Field
Prof LIU Bin	Chemistry
Prof LU Yi	Social Sciences
Prof REN Yang	Cross-Field
Prof Andrey ROGACH	Cross-Field
Prof WANG Jun	Engineering
Prof YIP Hin-Lap	Materials Science
Prof ZENG Xiao Cheng	Cross-Field
Prof ZENG Zhiyuan	Cross-Field
Prof ZHANG Hua	Chemistry; Materials Science
Prof ZHANG Qichun	Chemistry
Prof ZHANG Qingfu	Computer Science
Prof ZHI Chunyi	Materials Science
Prof ZHU Zonglong	Cross-Field

Highly-cited researchers are selected for their exceptional research performance, determined by the production of multiple highly-cited papers that rank in the top 1% by citations for field and year in the Web of Science.

Faculty Achievement



Department of Materials Science and Engineering

In a study published in *Nature Energy*, Prof FAN Jun and her team have introduced a significant advancement in aqueous redox flow batteries (RFBs). Their research showcases the development of a molecule catalyst called riboflavin sodium phosphate, which has shown remarkable improvements in energy efficiency and current density for polysulfide-based RFBs. By reducing overpotential and enabling long-duration energy storage, the catalysed RFBs exhibited exceptional durability with minimal capacity decay over thousands of cycles. This breakthrough paves the way for more efficient and reliable energy storage solutions.

Faculty Achievement



Department of Materials Science and Engineering

Prof Angus YIP has been honoured with the esteemed IUMRS-Frontier Materials Young Scientists Award 2023 by the International Union of Materials Research Societies. Among a large pool of global nominees, Prof YIP is one of the six distinguished recipients recognised for their exceptional contributions to advancing frontier materials research. Additionally, Prof YIP's significant contributions to chemistry and other interdisciplinary fields have led to his induction as a Fellow of the Royal Society of Chemistry.

Student Achievement



Department of Electrical Engineering

Congratulations to the team comprising Mr CHEN Chen, Mr MA Tianlu, Dr MO Liping, Mr WANG Xiaosheng and Mr WANG Yibo, for securing the 1st Runner Up and the Best Innovation Award in the IET Young Professionals Exhibition & Competition 2023 (Postgraduate Section). Their project, titled High-power Capability and High-power Density Wireless Charging using Nanocrystalline Ribbon Materials, under the guidance of Prof Derrick JIANG, showcased remarkable engineering and technological innovation.

Faculty Achievement



College of Engineering

132 faculty members of the College were listed among the top 2 % most highly cited scientists (career-long/single year) in the report of Stanford University released recently.

Scientists are classified into 22 scientific fields and 174 sub-fields according to the standard Science-Metrix classification. Career-long data are updated to end of 2022 and single recent year data pertain to citations received during the calendar year 2022. The selection is based on the top 100,000 scientists by c-score (with and without self-citations) or a percentile rank of 2% or above in the sub-field.

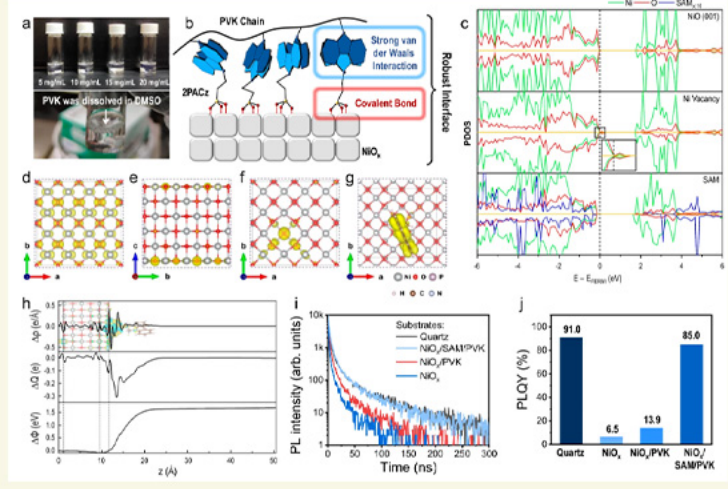
Faculty Achievement



Department of Materials Science and Engineering

Researchers led by Prof LIU Bin published a paper titled A tin-based tandem electrocatalyst for CO₂ reduction to ethanol with 80% selectivity in *Nature Energy*. They have developed a Cu-free, Sn-based electrocatalyst for efficient CO₂ reduction to ethanol. The catalyst achieves high selectivity and maintains over 70% selectivity across a wide electrode potential range. It exhibits excellent stability and promotes C–C bond formation through a formyl-bicarbonate coupling pathway, as suggested by the first principles modelling.

Faculty Achievement



Department of Materials Science and Engineering

Prof Angus YIP and his team have published a paper in *Nature Communications* which presents a breakthrough in perovskite light-emitting diodes (LEDs). By introducing a self-assembled monolayer at the organic/inorganic heterointerfaces, they overcome hole injection challenges. This approach enhances device electrical properties, establishes a robust interface, passivates trap states, and aligns energy levels, paving the way for more efficient and brighter perovskite LEDs.

Student Achievement



Department of Computer Science

The HugeRabbit team, consisting of PhD students Miss HUANG Lianming, Miss MAO Yu, and Mr WU Shangyu, supervised by Prof Jason XUE and Prof GUAN Nan, alongside international advisor Dr CUI Yufei, has achieved second place in the prestigious 2023 ACM/IEEE TinyML Design Contest. Their innovative machine-learning algorithm accurately detects life-threatening ventricular arrhythmias from intracardiac electrograms, earning them recognition for detection precision, memory usage, and inference speed. The team was honoured at the 2023 International Conference on Computer-Aided Design in San Francisco, receiving a cash prize of USD1,000.