

Press release

For immediate release

Croucher Foundation presents Senior Research Fellowships to three distinguished scholars

8 December, 2024

Croucher Foundation held the Foundation Day Dinner and Awards Presentation Ceremony on 6 December to present the Croucher Senior Research Fellowships 2024 to three distinguished scholars from City University of Hong Kong (CityU), University of Hong Kong (HKU), and Hong Kong University of Science and Technology (HKUST), for their outstanding scientific research achievements. Professor Rosie Young, GBS, JP, Honorary Fellow was the Guest of Honour at the ceremony.

The list of awardees is as follows:

Professor Jianwei SUN

Professor, Department of Chemistry,

The Hong Kong University of Science and Technology

Professor Xiaoming YUAN

Professor, Department of Mathematics, Faculty of Science,

The University of Hong Kong

Professor Hua ZHANG

Herman Hu Chair Professor of Nanomaterials, Department of Chemistry,

City University of Hong Kong

Biographies of the awardees

Professor Jianwei SUN, Department of Chemistry, HKUST

Professor Jianwei Sun is a professor in the Department of Chemistry at the Hong Kong University of Science and Technology. He completed his BSc and MSc in chemistry at Nanjing University before taking his PhD at the University of Chicago.

Professor Sun has won numerous awards, including the Early Career Award, from the Research Grants Council of Hong Kong in 2012 and the Thieme Chemistry Journal Award in 2014. In 2019, he was elected as a member of the Hong Kong Young Academy of Sciences, and in 2021, he was elected as a Fellow of the Royal Society of Chemistry. His current research on asymmetric catalysis is supported by a Croucher Senior Research Fellowship.

Professor Xiaoming YUAN, Department of Mathematics, Faculty of Science, HKU

Professor Xiaoming Yuan is a professor at the Department of Mathematics at the University of Hong Kong. He studied his BSc and then MPhil in mathematics at Nanjing University. He then completed his PhD at City University of Hong Kong.

As data volumes and computational complexity escalate, Professor Yuan's research addresses critical optimisation challenges in artificial intelligence and cloud computing—areas where conventional problem-solving methods are reaching their limits.

His innovative approach focuses on creating scalable solutions that not only outperform traditional methods but also bridge the gap between theoretical advances and practical applications. His methodology integrates classical optimisation tools (variational inequalities, the augmented Lagrangian method, the proximal point method, and operator splitting methods such as the ADMM and primal-dual methods) with modern machine learning approaches (deep learning and operator learning), creating algorithms that harness both mathematical model structures and data patterns. His work has significant implications for both academic research and industry implementation, particularly in managing large-scale data processing and complex computational tasks.

Professor Hua ZHANG, Herman Hu Chair Professor of Nanomaterials, Department of Chemistry, CityU

Professor Hua Zhang is Director at the Hong Kong Institute for Clean Energy at City University of Hong Kong and also Herman Hu Chair Professor of Nanomaterials at the Department of Chemistry at the same university. He originally took his BSc and MSc in chemistry at Nanjing University, followed by his PhD at Peking University.

Professor Zhang's current research addresses a fundamental challenge in nanomaterial science: controlling the crystal phases of noble metal/semiconductor heterostructures. These hybrid materials are essential for catalysis, optoelectronics, and solar energy applications, where precise crystal phase manipulation is crucial for optimising their performance.

To tackle this challenge, Professor Zhang has developed a novel wet-chemical synthesis approach that combines amorphous noble metals with crystalline semiconductors to create heterostructures. These structures show enhanced photocatalytic properties, particularly for solar-powered production of high-purity fine chemicals—advancing sustainable chemical manufacturing methods.

Croucher Senior Research Fellowships

Croucher Senior Research Fellowships are presented to local academics in recognition of their excellent scientific research. The awards are granted after a robust process involving a paper selection exercise, detailed international peer review and long discussions between Trustees. The value of each Senior Research Fellowship, including the cost of a replacement teacher, is about HK\$3 million.

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