

Physics

Newsletter

April | 2023

Message from the Interim Head Prof. Shuang Zhang



Dear colleagues,

I am honored to have been appointed as the interim head of our department, and I would like to express my gratitude for this opportunity to serve the department during the transitional period, and to work with such an exceptional team of scholars and educators. I believe that open communication and feedback are essential to achieving this goal, and I welcome your suggestions and ideas.

I would also like to take this opportunity to express my heartfelt appreciation to Prof. Zidan Wang for his exceptional leadership and service to our department during his tenure as head, especially during the difficult Covid period. His dedication, hard work, and commitment to excellence have been inspiring and have contributed significantly to the growth and success of our department. I am delighted to share that Zidan will continue to make a significant contribution to our department by leading the Quantum Institute.

Best Wishes,
Shuang

Other Staff Movement

- Prof. Quentin Parker has transferred to the Faculty of Science.
- Ms. Maggie Choi has just joined the department as Clerk I.
- Dr. Chunhui Ai has just joined the department as Technical Officer.
- Dr. Jianqiu Huang has just joined the department as Technical Officer.

Obituary - Chan Wai Hung Ricky

It is our great loss that our colleague, Mr. Chan Wai Hung Ricky, passed away on March 5th, 2023. Mr. Chan joined our department as a teaching laboratory technician in September 2012. We are grateful for his dedication to undergraduate experimental teaching management and technical maintenance of the equipment in the teaching laboratory, especially during the challenging times of the COVID pandemic. Ricky will be deeply missed, and his memory will live on.

Editors:

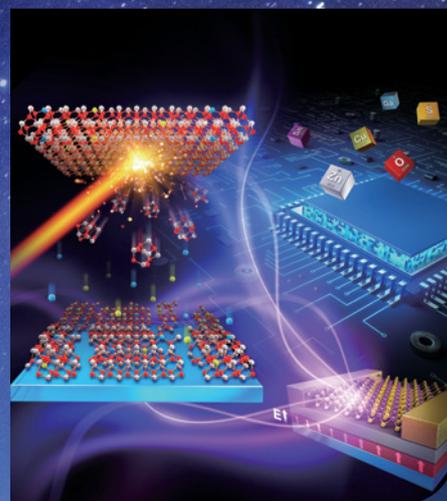
Dr. Kai-Ming Lee
Prof. Shizhong Zhang (acting)



<https://www.physits.hku.hk/>

Promotions, Awards and Research Highlights

- Prof. Xiaodong Cui has been appointed to be Associate Head of the Department.
- Prof. Shizhong Zhang has been promoted to Professor.
- Prof. Hoi-Kwong Lo has been awarded the 2022 CAP-INO Medal for Outstanding Achievement in Applied Photonics. https://services.cap.ca/medal/publicity/press.php?year=2022&medal_id=7&num=1
- Dr. Yi Yang has been awarded the “35 Innovators under 35” by MIT Technology Review China. <https://tr35.mittrchina.com/annual-winner?title=2022>
- Dr. Jane Dai and Dr. Zi Yang Meng’s research team deployed the first advanced high-performance supercomputing system “Blackbody” for the department and faculty, for solving challenging quantum many-body and astrophysics problems. <https://www.hku.hk/press/press-releases/detail/25594.html>
- A HKU-Harvard collaboration led by Dr. Zi Yang Meng’s research team published a paper on novel entangled quantum state for programmable quantum simulators on Rydberg atom arrays, *Nature Communications* 13, 5799 (2022). <https://www.nature.com/articles/s41467-022-33431-5>
- Dr. Zi Yang Meng received the French National Research Agency (Agence Nationale de la Recherche) and the Research Grants Council (RGC) of Hong Kong Joint Research Scheme, with project title: Automate: Advanced Numerical Methods for Highly Entangled Quantum Matter. https://www.ugc.edu.hk/eng/rgc/funding_opport/anr/funded_research/anr2223.html
- Dr. Francis Chi Chung Ling and his research group members, Dr. Huang Dong, Dr. Shi Yingli and Ms. Jing Yu, developed a methodology for enhancing oxides permittivity by co-doping acceptor and donor. Permittivities of 10^4 and 200 were reported in ZnO ceramic and transparent ZnO film. These results were published in *Journal of Materials Chemistry A* (<https://doi.org/10.1039/C9TA12808E>), *Small* (<https://doi.org/10.1002/smll.202270273>) and *Advanced Electronic Materials* (<https://doi.org/10.1002/aelm.202270065>) as the journal issue covers and the featured articles *Frontispiece* selected by the editors.



HKU Junior Science Institute (JSI) Program – Exploring Wonders of Flatland in Physics



On November 12, 2022 (Saturday), Dr. Dong-Keun Ki organized a JSI program for secondary school students. Total 12 students joined the program. During the morning session, Dr. Ki introduced the atomically thin 2D crystals like graphene, and discuss how we produce them, their wonderful properties, and the physics behind. In the afternoon, students were divided into three groups to take three different demonstrations in turns: exfoliation

of graphene from pencil, exfoliation of graphene from graphite, and measuring electrical conductivity of graphite flakes. Ms. Catherine See Yee Mah, Mr. Yueyang Wang, and Dr. Hongxia Xue helped as group teachers. Dr. Ki is planning to continue this program every year. Please stay tuned! (Photo courtesy Science Faculty, HKU) <https://www.scifac.hku.hk/public-engagement/sci-education/outreach-high-schools/jsi/workshops2022>

