

Dr. Jiahao Yan

- **Phone** +353 (0)85 7449666
- **Email** jhyan2018@gmail.com
- **Affiliation** University College Cork, College Road, Cork
T12 K8AF, Ireland

Experience and Education

12/2020 – present **Postdoctoral Researcher**

University College Cork, Ireland

- Develop fourth generation SISTRM/SJTM quantum microscope (50mK, 14T).
- Research on charge/pair density waves in High temperature superconductors.

9/2013 – 1/2020 **Ph. Doctor**

Institute of Physics, Chinese Academy of Sciences, China

- Design time-shared switching system, including hardware circuit and software subsystems, for multi-probe scanning tunneling microscope. (Published by *Rev. Sci. Instrum.*).
- Fulfil ultrahigh-speed non-volatile memory devices via atomically sharp interface. (Published by *Nature Nanotechnol.*);
- Engineer the pseudospin of graphene via substrate morphology. (Published by *2D Mater.*);
- Upgrade and optimize the imaging quality of a commercial four-probe scanning tunneling microscopy system. (Published by *Rev. Sci. Instrum.*);

9/2009 – 7/2013 **Bachelor** (Applied Physics)

College of Science, China University of Petroleum, China

Publications and Patents

1. **J. H. Yan**, J. J. Ma, A. W. Wang, R. S. Ma, L. M. Wu, Z. B. Wu, Q. Huan, H. J. Gao. A time-shared switching scheme designed for multi-probe scanning tunneling microscopy. *Rev. Sci. Instrum.* 92, 103702 (2021)
2. L. M. Wu*, A. W. Wang*, J. A. Shi*, **J. H. Yan***, Z. Zhou, C. Bian, J. J. Ma, R. S. Ma, H. T. Liu, J. C. Chen, Y. Huang, W. Zhou, L. H. Bao, M. Ouyang, S. J. Pennycook, S. T. Pantelides, H. J. Gao, Atomically sharp interface enabled ultrahigh-speed non-volatile memory devices. *Nature Nanotechnol.* (2021)
3. **J. H. Yan**, L. M. Wu, R. S. Ma, S. Y. Zhu, C. Bian, J. J. Ma, Q. Huan, L. H. Bao, J. H. Mao, S. X. Du, H. J. Gao, Substrate, a choice of engineering the pseudospin in graphene. *2D Mater.* 6, 045050 (2019).
4. Q. J. Wang*, **J. H. Yan***, M. C. Xiao*, D. Manoj, C. Zhong, Q. Y. Lv, L. T. Yang, L. M. Wu, Z. P. Wang, L. H. Bao, H. J. Gao, F. Xiao, L. Jiang, S. Wang, One-step solution synthesis of a two-dimensional semiconducting covalent organometallic nanosheet via the condensation of boronic acid. *RSC Adv.* 9, 29327-29330 (2019).
5. W. Guo, K. Chi, **J. H. Yan**, L. H. Bao, S. Wang, Y. Q. Liu, Integrated ionic sieving channels from engineering ordered monolayer two-dimensional crystallite structures. *Science Bulletin.* 65, 1356-1362 (2020).
6. R. S. Ma, J. J. Ma, **J. H. Yan**, L. M. Wu, W. Guo, S. Wang, Q. Huan, L. H. Bao, S. T. Pantelides, H. J. Gao, Wrinkle-induced highly conductive channels in graphene on SiO₂/Si substrates. *Nanoscale* 12, 12038-12045 (2020).
7. L. M. Wu, J. A. Shi, Z. Zhou, **J. H. Yan**, A. W. Wang, C. Bian, J. J. Ma, R. S. Ma, H. T. Liu, J. C. Chen, Y. Huang, W. Zhou, L. H. Bao, M. Ouyang, S. T. Pantelides, H. J. Gao, InSe/hBN/graphite heterostructure for high-performance 2D electronics and flexible electronics. *Nano Res.* 13, 1127-1132 (2020).
8. R. S. Ma, J. J. Ma, **J. H. Yan**, L. M. Wu, H. T. Liu, W. Guo, S. Wang, Q. Huan, X. Lin, L. H. Bao, S. T. Pantelides, H. J. Gao, Direct probing of imperfection-induced electrical degradation in millimeter-scale graphene on SiO₂ substrates. *2D Mater.* 6, 045033 (2019).
9. R. S. Ma, Q. Huan, L. M. Wu, **J. H. Yan**, Q. Zou, A. W. Wang, C. A. Bobisch, L. H. Bao, H. J. Gao, Upgrade of a commercial four-probe scanning tunneling microscopy system. *Rev. Sci. Instrum.* 88, 063704 (2017).
10. R. S. Ma, Q. Huan, L. M. Wu, **J. H. Yan**, W. Guo, Y. Y. Zhang, S. Wang, L. H. Bao, Y. Q. Liu, S. X. Du, S. T. Pantelides, H. J. Gao, Direct four-probe measurement of grain-boundary resistivity and mobility in millimeter-sized graphene. *Nano Lett.* 17, 5291 (2017).