

CURRICULUM VITAE

Jian-Bin XU (J. B. Xu)



PERSONAL DATA

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CUHK Research Portal: https://aims.cuhk.edu.hk/converis/portal/detail/Person/6230147;jsessionid=RQdE-xOJAjmazPvgmquERH48t-kgVyeUWE-igNg1.cuhk?lang=en_GB
Google Scholar: [Jian-Bin XU \(J.B. XU, 许建斌\) - Google Scholar](#)
Scopus: <https://www.scopus.com/authid/detail.uri?authorId=55642455300>
Publons ID: <https://publons.com/researcher/2798679/jian-bin-jb-xu/>
ORCID: <http://orcid.org/0000-0003-0509-9508>
ResearchGate: <https://www.researchgate.net/profile/Jb-Xu>
Globalauthorid.com (Dec 2023) ID: GAID10147466
ScholarGPS Highly Ranked Scholar ID: 16902181180194
https://scholargps.com/scholars/16902181180194/jianbin-xu?e_ref=b0d3d0655a9d62c34406
IEEE EDS website: https://en.wikipedia.org/wiki/List_of_fellows_of_IEEE_Electron_Devices_Society
IEEE NTC website: <https://ieeenano.org/about/ieee-fellows-of-the-nanotechnology-council>
<https://www.newton.com.tw/wiki/%E8%A8%B1%E5%BB%BA%E6%96%8C/20439380>
<https://baike.baidu.com/item/%E8%AE%B8%E5%BB%BA%E6%96%8C/20439380>

EDUCATION

PhD, 1988-1993 (Dr. rer. nat.) Department of Physics, University of Konstanz (Universität Konstanz, one of top 10 elite universities), Konstanz, Baden-Württemberg State, Germany. Specifically in Applied Physics and Solid-State Physics, **Supervisor: Prof. Dr. Klaus Dransfeld (August 12, 1926 – April 26, 2024)**
Doctoral Degree in Natural Sciences https://de.wikipedia.org/wiki/Klaus_Dransfeld, <https://www.suedkurier.de/region/kreis-konstanz/konstanz/Klaus-Dransfeld-ist-ein-grosser-Physiker-Die-Zukunft-macht-ihm-jedoch-Sorge-Er-erklaert-uns-wieso;art372448,10131952>; <https://www.suedkurier.de/region/kreis-konstanz/konstanz/trauer-um-einen-grossen-konstanzer-professor;art372448,12030110>), Member of German National Academy of Sciences, 1994

(<https://www.leopoldina.org/mitgliederverzeichnis/mitglieder/member/Member/show/klaus-dransfeld/>) with accumulative number of **Nobel Laureates** over **170** being or having been affiliated with it; Gentner-Kaster Prize Winner (German Physical Society & French Society of Physics, 1989); former Director of Max-Planck Institute for Solid State Research (https://www.fkf.mpg.de/8303673/2024_06_Dransfeld; one of the best research institutes in solid state research in the past fifty years globally, 1977-1981), and the Founding Director of Max-Planck Institute for High-Magnetic Fields where generated two Nobel Prizes (Prof. Dr. Klaus von Klitzing, **Nobel Prize Laureate** in Physics 1985; Prof. Dr. Horst Ludwig Störmer **Nobel Prize Laureate** in Physics 1998) during his tenure in 1973-1977; former MPhil supervisor of Prof. Dr. Johann Deisenhofer (**Nobel Prize Laureate** in Chemistry (1988). Prof. Dr. Stefan Hell – **Nobel Laureate** in Chemistry 2014 was a PhD student of Prof. Dr. Siegfried Hunklinger, who was a PhD graduate under supervision of Prof. Dr. Klaus Dransfeld, and a long-time colleague afterwards. Prof. Klaus Dransfeld was awarded Doctor Honoris Causa from Université Grenoble, 1993; Doktor der Naturwissenschaften (honoris causa), Universität Augsburg, 1996;

Panel Chair of Doctoral Dissertation – Prof. Dr. Jürgen Mlynek

(https://en.wikipedia.org/wiki/J%C3%BCrgen_Mlynek) (Leibniz Prize Winner, the highest national award in science and engineering, Germany, 1992), Max-Born Prize Winner (German Physical Society & Institute of Physics, UK, 1996); Vice-President of the German Research Foundation (DFG) (1996–2001); President of the Humboldt University zu Berlin (2000–2005); President of Helmholtz Association (2005–2015), the largest research consortium in Germany with an annual budget over 4 billion euros). He is currently Chair of Strategic Advisory Board of Quantum Flagship Project funded by European Research Commission (ERC) with funding of 1 billion euro for 10 years. (<https://qt.eu/structure-governance/strategic-advisory-board>)

Currently he is also Chairman of the Board of the Falling Walls Foundation, <https://falling-walls.com/foundation/trustees/>. Falling Walls is the unique global hub connecting science, business and society.

Panel Members: Prof. Dr. Paul Leiderer

(https://de.wikipedia.org/wiki/Paul_Leiderer), Member of German National Academy of Sciences

(<https://www.leopoldina.org/mitgliederverzeichnis/mitglieder/member/Member/show/paul-leiderer/>).

Prof. Dr. Wolfgang Dieterich (<http://theorie.physik.uni-konstanz.de/dieterich/>)

MSc, 1983-1986 Department of Information Physics, Nanjing University, Nanjing, China, under supervision of **Prof. Shu-Yi Zhang** (<https://baike.baidu.com/item/%E5%BC%A0%E6%B7%91%E4%BB%AA/3711949>), Academician of Chinese Academy of Sciences

BSc, 1978-1983 Department of Physics, Nanjing University, Nanjing, China

PROFESSIONAL EXPERIENCE

Member of Academic Degree Evaluation Committee, SIAT	Nov 1, 2024 – August 31, 2026 Shenzhen Institute of Advanced Technology Xili University City, Xue Yuan Boulevard 1068, Nanshan District, Shenzhen, Postal Code: 518055, Chinese Academy of Sciences, China
Academic Vice President,	July 1, 2024 – August 31, 2026 Shenzhen Institutes of Advanced Technology Xili University City, Xue Yuan Boulevard 1068, Nanshan District, Shenzhen, Postal Code: 518055, Chinese Academy of Sciences, China Staff No.: 7884
Associate Dean of Engineering (Mainland Affairs)	Aug. 1, 2024 – July 31, 2026 Faculty of Engineering The Chinese University of Hong Kong, Hong Kong SAR, China
Deputy Director for the Planning Office of School of Microelectronics	July 1, 2023 – March 31, 2024 The Planning Office of School of Microelectronics The Chinese University of Hong Kong, Shenzhen, China
Convenor of Engineering Panel of Research Committee, CUHK	Aug. 1, 2023 – July 31, 2024 Convenor, Engineering Panel, Research Committee The Chinese University of Hong Kong, Hong Kong SAR, China
Member	August 1, 2023 to July 31, 2024. HKPSF Selection Panel, Graduate School The Chinese University of Hong Kong, Hong Kong SAR, China
Associate Dean of Engineering (Research)	Aug. 1, 2023 – July 31, 2024 Faculty of Engineering The Chinese University of Hong Kong, Hong Kong SAR, China
Choh-Ming Li Professor of Electronic Engineering (Chair Professor)	August 1, 2022 – July 31, 2027 Department of Electronic Engineering, Faculty of Engineering, The Chinese University of Hong Kong, Hong Kong SAR, China Choh-Ming Li Professor is a Distinguished Professorship at The Chinese University of Hong Kong (CUHK). It is named after Choh-Ming Li, the Founding Vice-Chancellor of CUHK and a renowned economist and educator. The professorship is awarded to outstanding scholars in various disciplines who have made significant contributions to their fields and to the university. The awardee is recognized for his/her long-term remarkable performance in

teaching and research and outstanding contributions to the Faculty and University.

https://www.na.cuhk.edu.hk/e_newsletter/prof-xu-jianbin-awarded-appointment-as-choh-ming-li-professor-of-life-electronic-engineering/
<https://www.ee.cuhk.edu.hk/en-gb/research/awards-honors/professor-research-staff/listing-2022/1116-prof-jian-bin-xu>
<https://www.erg.cuhk.edu.hk/erg/Recognitions>

Co-PI, and Member of Management Committee of Area of Excellence

May 1, 2021 - April 30, 2028

Area of Excellence: 2D Materials Research: Fundamentals towards Emerging Technologies, (AoE/P-701/20); Research Grants Council, 80.326 million HK\$, (one of the largest AoE projects, a large-scale project)

<https://www.physics.hku.hk/AoE2D/index.php>

Co-Director, CAS-CUHK Joint Laboratory of High-Density Electronic Packaging Materials and Devices

April 2022 – present

The Chinese University of Hong Kong

Shenzhen Institutes of Advanced Technology

Chinese Academy of Sciences, Shenzhen, China

http://www.bic.cas.cn/zl/gatsw/202404/t20240402_5010547.html

http://www.bic.cas.cn/zl/gatsw/202005/t20200519_4746951.html

Co-Director, Institute of Advanced Integrated Technology, SIAT

Jan 2021 – present

Institute of Advanced Integrated Technology

Shenzhen Institutes of Advanced Technology

Chinese Academy of Sciences, Shenzhen, China

Assistant Dean of Engineering (Research)

Oct. 1, 2020 – July 31, 2023

Faculty of Engineering

The Chinese University of Hong Kong, Hong Kong SAR, China

Professor A3 (the highest rank of professoriate in CUHK, equiv. to Chair Professor)

August 2020 – present

Department of Electronic Engineering

Faculty of Engineering

The Chinese University of Hong Kong, Hong Kong SAR, China

Panel Member

November 2019 – present

Engineering Panel (GRF and ECS) of Research Grants Council

University Grants Council, Hong Kong SAR, China

<https://www.ugc.edu.hk/eng/rgc/about/membership/epanel/grf.html>

Deputy Chairman	August 2019 – present Hong Kong Materials Research Society, https://hkmrs.org Hong Kong SAR, China, https://hkmrs.org/executive-committee/
Interim Project Coordinator, and Lead Co-Principal Investigator	September 2018 – December 2019 Smart Solar Energy Harvesting, Storage, and Utilization (T23-407/13-N); https://www.youtube.com/watch?v=L8Dk4He-YIQ Research Grants Council (RGC) of Hong Kong SAR; Theme-Based Research Scheme (TRS); 60,330,000 HK\$, January 1, 2014 - December 31, 2019; Lead Co-Principal Investigator (one of the largest TRS projects, a large-scale funding scheme). The project completion was ranked “Excellent” by TRS Assessment Panel of RGC in 2020.
Outstanding Fellow of the Faculty of Engineering	August 1, 2014-July 31, 2019; August 1, 2019-July 31, 2022 Recipient of Vice Chancellor’s Outstanding Fellow of the Faculty of Engineering, CUHK, twice consecutively.
Distinguished Professor & Leader of Thermal Management Group	October 2017 – Sept 2020 Recipient of 1000 Talents Program tenable to Institute for Advanced Materials Science and Engineering, by Chinese Central Government Shenzhen Institutes of Advanced Technology (SIAT) Chinese Academy of Sciences, Shenzhen, China Shenzhen Institute of Electronic Materials (SIEM) Baoan District, Shenzhen, China, since 2019
Visiting Professor & Leader of Thermal Management Group	October 2011 – September 2017; October 2020 - present Institute for Advanced Materials Science and Engineering Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, Shenzhen, China
Research Fellow (in Courtesy)	December 30, 2012 – December 31, 2016 Shenzhen Research Institute The Chinese University of Hong Kong, Hong Kong SAR, China
Fellow and Program Leader	October 2011 – Present Institute of Environment, Energy, and Sustainability, The Chinese University of Hong Kong, Hong Kong SAR, China
Convener	May 2010 – Present Initiative of Energy, Materials, and Nanotechnology, Faculty of Engineering, The Chinese University of Hong Kong, Hong Kong SAR, China

Director	April 2007 – Present Materials Science and Technology Research Center The Chinese University of Hong Kong, Hong Kong SAR, China
Member of Senate	August 2020 – present Senate presided by the Vice Chancellor of The Chinese University of Hong Kong, Hong Kong SAR, China; it is vested statutory powers and duties in respect of all academic matters in CUHK http://www.cuhk.edu.hk/governance/senate/english/composition.html
Chang Jiang (Cheung Kong) Scholar Chair Professorship	January 1, 2015 – December 31, 2017 The highest rank of professoriate honored by Ministry of Education (MOE), China, tenable to School of Electronic Science and Engineering, Nanjing University
Recipient of Joint Research Fund by NSFC	Jan 2010 – Dec 2011; Jan 2013 – Dec 2016 Recipient of Joint Research Fund for Overseas Chinese, Hong Kong and Macau Scholars, by NSFC (formerly National Science Fund for Distinguished Young Scholars in Overseas; twice consecutively ; tenable to School of Electronic Science and Engineering, Nanjing University.
Professor	August 2002 – July 2020 Department of Electronic Engineering The Chinese University of Hong Kong, Hong Kong SAR, China
Associate Professor (with tenure)	August 1998 – August 2002 Department of Electronic Engineering The Chinese University of Hong Kong, Hong Kong SAR, China
Assistant Professor (tenure track)	August 1994 – August 1998 Department of Electronic Engineering The Chinese University of Hong Kong, Hong Kong
Research Associate	April 1993 – July 1994 Department of Electronic Engineering The Chinese University of Hong Kong, Hong Kong
Research Assistant and Teaching Assistant	January 1988 – March 1993 Department of Physics University of Konstanz, Konstanz, Germany

**Research Assistant and
Teaching Assistant**

September 1983 – December 1987
Department of Information Physics
Nanjing University, Nanjing, China

FELLOWSHIPS AND MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Foreign Fellow	European Academy of Sciences (Latin: Academia Scientiarum Europaea, Brussel, Belgium), elected as Non-EU Member/Fellow of EURASC, March 2025. The European Academy of Sciences is an international nonprofit organization that promotes excellence in science and technology and their roles in fostering social and economic development. Its members include 65 Nobel and Laureates and Fields Metals Winners , Wolf and Harvey Prize Winners, Welch Prize Winners, Members of various National Academies and those having received many other prestigious recognitions. https://www.eurasc.eu/
Member	Optica (formerly Optical Society of America), since August 2024
Guest Editor	Special Issue on “2D Materials and Novel Devices”, <i>Advanced Devices & Instrumentation</i> , a Science Partner Journal, August 2022 – December 2023 https://spj.science.org/page/ADI/si/2D-Materials
Editor	<i>IEEE Transactions on Electron Devices</i> (impact factor of 3.1, ranked 121/275 in the engineering journals by Web of Science), under the auspices of Institute of Electrical and Electronic Engineers (IEEE), March 2023 – present, a flagship journal on multidisciplinary research in electron devices.
Guest Editor	<i>Applied Physics Letters</i> , Special Issue on “Photodetectors based on Van der Waals heterostructures and hybrid 2D materials”, 2022; along with Profs. Frank Koppens of ICFO, Fengnian Xia of Yale University, Ilya Goykhman of Technion https://publishing.aip.org/publications/journals/special-topics/apl/photodetectors-based-on-van-der-waals-heterostructures-and-hybrid-2d-materials/ ; https://aip.scitation.org/topic/special-collections/pvdw2022?SeriesKey=apl
Council Member	Chinese Society of Micro-Nano Technology, since April 2021 http://www.csmnt.org.cn/
Member of Senate	The Chinese University of Hong Kong, Hong Kong SAR, China; https://www.cuhk.edu.hk/governance/senate/english/composition.html , August 2020 – present. Under the chairmanship of the Vice-Chancellor, the Senate is vested with statutory powers and duties in respect of all academic matters in the University.
Member	Council Member of Optoelectronic Materials and Devices Network, China, Jan 2020- Dec 2023.
Panel Member	The Engineering Panel, Research Grants Council, Hong Kong SAR, China, November 2019 - present https://www.ugc.edu.hk/eng/rgc/about/membership/epanel/grf.html https://www.ugc.edu.hk/big5/rgc/about/membership/epanel/grf.html
Member	Editorial Board, <i>ACS Nano</i> under the auspices of American Chemical Society, a top journal in nanoscience and nanotechnology, January 2020 - present.
Guest Editor	<i>MDPI Sensors</i> , Special Issue on “Two-Dimensional Materials based Sensors”, 2019
Associate Editor	<i>Science Bulletin</i> (impact factor of 15, ranked No. 8 in the multidisciplinary journals by Web of Science), under the auspices of Chinese Academy of Sciences (CAS) and

	National Science Foundation of China (NSFC), January 2018 – December 2022, a flagship journal for multidisciplinary research in the mainland.
Fellow	Institute of Electrical and Electronics Engineers (IEEE), since January 2018. https://www.ieee.org/membership_services/membership/fellows/fellowsDirectory.html#
Advisor	China Innovation Alliance of the Graphene Industry (CGIA), since September 2016; , along with Prof. Andre Geim, Nobel Prize Laureate in Physics 2010. See the below website: http://www.c-gia.org/index.php?m=content&c=index&a=lists&catid=114
Member	Board Member of Gordon Research Conferences, 2018 - 2023
Council Member	The Chinese Vacuum Society, from November 2014 to October 2029
Fellow	The Hong Kong Institution of Engineers (HKIE), since September 2012
Member	Selection Panel of Engineering Science for Hong Kong Young Scientist Awards, Hong Kong Institution of Science, since 2013
Senior Member	Institute of Electrical and Electronics Engineers, March 2002 – December 2017
Member	Institute of Electrical and Electronics Engineers, May 1996 – February 2002
Member	American Physical Society, since July 1995
Member	Materials Research Society (USA), November 1996 – December 2016
Deputy Chairman	Hong Kong Materials Research Society, since Sept 2019
Secretary	Hong Kong Materials Research Society, May 2002 – Sept. 2019
Member	Hong Kong Materials Research Society, since October 1996
Council Member & Vice President	Hong Kong Institution of Science (HKIS), November 2002 – October 2010 Vice President, November 2007 – October 2010
Member	Hong Kong Institution of Science, since October 1998
Member	The Physical Society of Hong Kong, since October 1995
Member	American Vacuum Society, November 1995 – September 2002
Council Member	Optoelectronics Sub-Committee, Optical Society of China, October 1999 – September 2003
Member	Academic Committee of Scanning Probe Microscopic Society of China, since December 2000

MAIN RESEARCH INTERESTS

- ☐ Nanoscience and nanotechnology and the integration of advanced electronics and optoelectronics for electronics/photonics (e.g., nanomaterials, 2D materials, nanodevices, etc.)
- ☐ Near-field and nanometric sensing, imaging, and characterization (e.g., scanning tunneling microscopy (STM), atomic force microscopy (AFM), thermal microscopy, NSOM, EFM, etc.)
- ☐ Thin film technology (e.g., electronic thin films, interface engineering of advanced electronic/photonics devices, advanced functional oxides and devices, etc.)
- ☐ Physical electronics of organic semiconductors (e.g., organic light emitting devices (OLEDs), organic devices, etc.)
- ☐ Hybrid perovskite materials for optoelectronics and solar technology
- ☐ Nanophotonics for sensing and optoelectronics
- ☐ Advanced thermal science and technology (e.g., electron processes in energy conversion and dissipation in solids, near-field radiative heat transfer, highly thermal conductive materials, advanced thermoelectric materials, etc.)
- ☐ Advanced electronic packaging materials and technology
- ☐ Physical electronics and devices for information technology

Citations by Notable Scholars over 17217, according to Global Scholar Database (www.globalauthorid.com), including Nobel Laureates, Academicians of National Academy of Sciences or Engineering from various nations, top 100,000 scholars:

<http://www.globalauthorid.com/WebPortal/AuthorCited?wd=GAID10147466&rc=7E27FE>

Citations by Notable Scholars : 17694 times (a full set of citation data by notable scholars available for Golden Members)

1. Konstantin S. Novoselov, UK, University of Manchester; **2010 Nobel Laureate in Physics**; 2019 Member of National Academy of Science; [Photogating-assisted tunneling boosts the responsivity and speed of heterogeneous WSe₂/Ta₂NiSe₅ photodetectors](#) (2024)
2. Konstantin S. Novoselov, UK, University of Manchester; **2010 Nobel Laureate in Physics**; 2019 Member of National Academy of Science; [Infrared photodetection in graphene-based heterostructures: bolometric and thermoelectric effects at the tunnelling barrier](#) (2024)
3. Mounji G. Bawendi, USA, Massachusetts Institute of Technology; 2007 Member of National Academy of Science; **2023 Nobel Laureate in Chemistry**; [Metal Oxide Interlayers Enable Lower-Cost Electrodes in PbS QD Solar Cells](#) (2023)
4. Mounji G. Bawendi, USA, Massachusetts Institute of Technology; 2007 Member of National Academy of Science; **2023 Nobel Laureate in Chemistry**; [Near-Unity Superradiant Emission from Delocalized Frenkel Excitons in a Two-Dimensional Supramolecular Assembly](#)
5. J. Fraser Stoddart, USA, North-western University; 2014 Member of National Academy of Science; **2016 Nobel Laureate in Chemistry**; [Temperature-Triggered Supramolecular Assembly of Organic Semiconductors](#); currently Professor of The University of Hong Kong.
6. Konstantin S. Novoselov, UK, University of Manchester; **2010 Nobel Laureate in Physics**; 2019 Member of National Academy of Science; [Recent advances in graphene and other 2D materials](#)
7. Mounji G. Bawendi, USA, Massachusetts Institute of Technology; 2007 Member of National Academy of Science; **2023 Nobel Laureate in Chemistry**; [Designing Highly Luminescent Molecular Aggregates via Bottom-Up Nanoscale Engineering](#)
8. Isamu Akasaki, Japan, Meijo University; **2014 Nobel Laureate in Physics**; [Room-temperature operation of AlGa_N ultraviolet-B laser diode at 298 nm on lattice-relaxed Al_{0.6}Ga_{0.4}N/AlN/sapphire](#)
9. Mounji G. Bawendi, USA, Massachusetts Institute of Technology; 2007 Member of National Academy of Science; **2023 Nobel Laureate in Chemistry**; [Precursor Concentration Affects Grain Size, Crystal Orientation, and Local Performance in Mixed-Ion Lead Perovskite Solar Cells](#)
10. Konstantin S. Novoselov, UK, University of Manchester; **2010 Nobel Laureate in Physics**; 2019 Member of National Academy of Science; [Gain modulation by graphene plasmons in aperiodic lattice lasers](#)
11. Konstantin S. Novoselov, UK, University of Manchester, **2010 Nobel Laureate in Physics**; 2019 Member of National Academy of Science; [Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems](#) (2019)
12. Fert, Albert, France, UNIVERSITE PARIS SACLAY; **2006 Wolf Laureate in Physics**; **2007 Nobel Laureate in Physics**; [Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems](#)
13. Shuji, Nakamura, USA, University of California-Santa Barbara; 2003 Member of National Academy of Engineering; **2014 Nobel Laureate in Physics**; [Effect of indium on the physical vapor transport growth of AlN](#)
14. Louis E. Brus, USA, Columbia University; 2004 Member of National Academy of Science; **2023 Nobel Laureate in Chemistry**; [Quantitative noncontact electrostatic force Imaging of nanocrystal polarizability](#)
15. Heinrich Rohrer, Switzerland, IBM Zurich Research Laboratories, 1986 **Nobel Laureate in Physics**; *Local Probe Methods*, in Highlights in Condensed Matter Physics and Future Prospects, edited by Leo Esaki (1973 **Nobel Laureate in Physics**), 465-493, 1991. <https://www.barnesandnoble.com/w/highlights-in-condensed-matter-physics-and-future-prospects-leo-esaki/1100923238>

16. Pablo Jarillo-Herrero, USA, Massachusetts Institute of Technology; **2020 Wolf Laureate in Physics**; 2022 Member of National Academy of Science; [Hyperbolic phonon polaritons with positive and negative phase velocities in suspended alpha-MoO₃](#)
17. Pablo Jarillo-Herrero, USA, Massachusetts Institute of Technology; **2020 Wolf Laureate in Physics**; 2022 Member of National Academy of Science; [Phase-Change Hyperbolic Heterostructures for Nanopolaritons: A Case Study of hBN/VO₂](#)
18. A. Paul Alivisatos, University of California, Berkeley, USA, **2012 Wolf Laureate in Chemistry**; 2004 Member of US National Academy of Sciences; [Roadmap on Optical Energy Conversion](#)
19. C. W. Tang (鄧青雲); The Hong Kong University of Science and Technology, The University of Rochester, **2011 Wolf Laureate in Chemistry**; 2006 Member of US National Academy of Engineering; [Charge-Retracton Time-of-Flight Measurement for Organic Charge Transport Materials](#)
19. G. B. Stringfellow, 2001 Member of US National Academy of Engineering (NAE); [Organometallic Vapor-Phase Epitaxy](#), p. 115-120, Academic Press (1999)
19. G. B. Stringfellow, and L. C. Su, [Step structure during OMVPE growth of ordered GaInP](#), Journal of Crystal Growth **163** (102), 128-134 (1996)
20. G. B. Stringfellow and L. C. Su (University of Utah), Y. E. Strausser and J. T. Thornton (Digital Instruments), [Step structure during organometallic vapor phase epitaxial growth of ordered GaInP](#), Journal of Electronic Materials **24**, 1591-1595 (1995)
21. G. B. Stringfellow and L. C. Su (University of Utah), Y. E. Strausser and J. T. Thornton (Digital Instruments), [Atomic Force Microscopy Study of Ordered GaInP](#), Appl. Phys. Lett. 66, 3155 (1995)
22. Kang, J. W. Ma, X. Zhang (2011 Member of US National Academy of Engineering (NAE), X. Z. Liu, ACS Nano, 2024

NUMBERS OF RESEARCH OUTPUTS OR CREATIVE WORKS AS WELL AS CITATIONS**Publications**

in Peer-Reviewed Journals:	c.a. 510
in Peer-Reviewed Conferences:	c.a. 95
Conference Presentations:	> 250
Invited Lectures/Presentations:	> 260
Book Chapters:	3
Edited Conference Proceedings/Special Issues	4

ISI Web of Knowledge Citation Report (May 2025)	Web of Science (WOS) https://www.webofscience.com/wos/allldb/citation-report/25cc24ba-6f63-4588-b6a1-5fa48dee1811-01334ebe30
Results Found:	c.a. 595 (more than 15 highly cited papers per annum since 2016)
Sum of the Times Cited:	c.a. 29,000 (peer citation without self-citation)
H-index:	93

Google Scholar Citation Report (June 2025)	http://scholar.google.com/citations?user=bdqiHxIAAAJ
Results Found:	> 650
Sum of the Times Cited:	c.a. 34,200 (in total)
H-index:	100

Scopus Citation Report (June 2025)	https://www.scopus.com/
Results Found:	c.a. 607
Sum of the Times Cited:	c.a. 29,700 (in total);
H-index:	92
Mendeley Report	https://www.scopus.com/authid/detail.uri?authorId=55642455300

Publons Citation Report (June 2025)	
Results Found:	c.a. 640
Sum of the Times Cited:	c.a. 28,700 (in total);
H-index:	89
Publons Report	https://publons.com/researcher/2798679/jian-bin-jb-xu/

AWARDS, HONORS, RECOGNITIONS, DISTINCTIONS, AND ACHIEVEMENTS

- ❑ **A top 10%** most viewed article in *Small* for the period from Jan. 1, 2023- Dec. 31, 2023, by John Wiley & Sons, Inc. IF factor of *Small* is
- ❑ **Foreign Fellow/Member**, March 25, 2025. European Academy of Sciences (Latin: Academia Scientiarum Europaea, Belgium), elected as Non-EU Member/Fellow of EURASC). The European Academy of Sciences is an international nonprofit organization that promotes excellence in science and technology and their roles in fostering social and economic development. Its members include 65 or more Laureates of Nobel Prize, Fields Metals Winners, Wolf and Harvey Prize Winners, Welch Prize Winners, who are the world's leading scientists and scholars from all European countries and the United States, Japan, China and etc. <https://www.eurasc.eu/>
- ❑ **Nominator**, VinFuture Prize (2025) (<https://online.vinfutureprize.org/nomination/login/>) by VinFuture Foundation, a not-for-profit foundation in Vietnam, to awards scientists and technologists globally since March 2021. The global Science-Technology Prize from Vietnam and one of the world's largest annual prizes in Science and Technology.
- ❑ **Inaugural Highly Ranked Scholar** selected by ScholarGPS, Jan 2025; in the **top 0.12%** of all scholars worldwide; ScholarGPS™ ID: 16902181180194; ranked 0.02% for Lifetime and 0.03% for Prior 5 years. https://scholargps.com/scholars/16902181180194/jianbin-xu?e_ref=b0d3d0655a9d62c34406
- ❑ **Member** of Guangdong Society of Engineering Thermophysics/Guangdong-Hongkong-Macao Greater Bay Area Society of Engineering Thermophysics; <https://news.sciencenet.cn/htmlnews/2024/4/520836.shtml>
- ❑ **Member** of The International Experts Committee of Advanced Control and Optimization of Light Industry at Jiangnan University, supported by 111 Intensive Base of Basic Science Education, Ministry of Education, China, February 2023, January 2028.
- ❑ **External Assessor**, New Cornerstone Investigator Program by Tencent Foundation, a non-governmental and public interest award for young scientists and technicians aged 55 and below who are working full-time on the Chinese mainland, October-November, 2022. The funding scale is the largest one for single researcher (PI) in the mainland, probably also in the top tier globally. <https://www.newcornerstone.org.cn/#/>
- ❑ **Highly Cited Award Recipient, named as one of Highly Cited Researchers 2020, 2022-2024 by Clarivate Analytics Co.**, among c.a. 7,000 listed researchers per annum; in the top 1% of highly cited authors in the Cross-Field in the periods of 2009-2019, 2011-2021, 2012-2022, 2013-2023 globally. Clarivate™ Highly Cited Researchers™ have demonstrated significant and broad influence reflected in their publication of multiple highly cited papers by fellow academics over the last decade.

These highly cited papers rank in the top 1% by citations for a field or fields and publication year in the Web of Science™. **Of the world's population of scientists and social scientists, Highly Cited Researchers are 1 in 1,000.** The list recognizes scientists and social scientists who have demonstrated substantial influence in their fields through the publication of multiple highly cited papers ranked in the top 1% by citations. A total of 6,886 researchers from 69 countries and regions have been named Highly Cited Researchers for 2024.

<https://clarivate.com/highly-cited-researchers/>

<https://clarivate.com/zh-hant/news/highlycitedresearchers2023/>

<https://clarivate.com/highly-cited-researchers/>

- ❑ **A co-author of the Youth Outstanding Paper Award** at World Artificial Intelligence Conference 2022, Sept. 1-3, Shanghai, China;
<https://www.worldaic.com.cn/activity#q0>
- ❑ **Selected as one of CUHK top scholars in 2022-2023 academic year, and named as Vice Chancellor's Choh-Ming Li Professor (Chair) of Electronic Engineering.** There are now less than 30 active Choh-Ming Li Professors, across different disciplines university-wide. Among them 8 Choh-Ming Li Professors are currently associated with Faculty of Engineering, CUHK.
- ❑ **Selected as globally top 1000 in materials science by research.com database.** More than 150 CUHK scholars were named in the Top Scientists Rankings, across different disciplines. Over 20 of them were selected to be among the top 1,000 scientists in their respective disciplines globally.
<https://www.cpr.cuhk.edu.hk/en/press/cuhk-excels-in-the-top-universities-and-scientists-rankings-by-research-com/>; <https://research.com/>; <https://research.com/u/jianbin-xu>
- ❑ **External Assessor**, Xplore Prize (<https://xploreprize.org/index-en.html>) by Tencent Foundation, a non-governmental and public interest award for young scientists and technicians aged 45 and below who are working full-time on the Chinese mainland, June 2021
- ❑ **Nominator** invited by Inamori Foundation for the globally **prestigious Award – Kyoto Prize (京都獎)** (<https://www.kyotoprize.org/en/>), 2021. The Kyoto Prize is an international award to honor those who have contributed significantly to the scientific, cultural, and spiritual betterment of mankind. The Prize is presented annually in each of the following three categories: Advanced Technology, Basic Sciences, and Arts and Philosophy. Laureates shall in principle be individuals (one person per category). However, in special cases a single Prize may be shared among more than one person. Selection is made without regard to nationality, race, sex, age, or religion. Each laureate is presented with a diploma, a 20K gold Kyoto Prize medal, and prize money of 100 million yen per category. Each Kyoto Prize category comprises four fields. The specific fields to be awarded in a given year are determined each year.
- ❑ **Nominator** and **Assessor**, Xplore Prize (<https://xploreprize.org/index-en.html>) by Tencent Foundation, a non-governmental and public interest award for young scientists and technicians aged 45 and below who are working full-time on the Chinese mainland, March-April, 2021
- ❑ **Named as one among the top 2% of the world's most highly cited scientists by Elsevier and Stanford University** (see Web: [https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/7, DOI:10.17632/btchxktzyw.7](https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/7,DOI:10.17632/btchxktzyw.7)). The Stanford-listed scholars have demonstrated substantial influence in various disciplines through the publication of multiple highly cited papers ranked according to citation impact from 1960 to 2024. Disciplinary differences in terms of citation norms are taken care of since the list identifies the top 2% of scientists in their own areas of specialty, manifesting the high academic standard of the excellent research performance and academic impact. This latest report by Stanford University was prepared by a team of experts led by Professor John Ioannidis, of Stanford University. The publicly available database provides continually updated information on the work of the world's top scientists including standardized information on citations, h-index, co-authorship-adjusted hm-index, citations of papers in different authorship positions, and a composite indicator.

Relevant information on the database can be found at

<https://www.cityu.edu.hk/zh-cn/media/news/2021/02/22/cityu-excels-global-top-scientists-list>

- ❑ **Named** as one of the most highly cited authors 2019, in the top 1% of highly cited authors in the General Chemistry Group portfolio of journals by Royal Society of Chemistry, UK
Web: <https://www.ershicimi.com/p/e4cdc472efd0e1ce66a72ba4a61411e0>
- ❑ **Recipient**, Excellent Associate Editor Award 2019, *Science Bulletin*, under the auspices of Chinese Academy of Sciences (CAS) and National Science Foundation of China (NSFC). It is a flagship journal for multi-disciplinary research in the mainland.
- ❑ **Member**, the Editorial Advisory Board, *ACS Nano*, under the auspices of American Chemical Society, a globally top journal on nanoscience and nanotechnology, since January 2020.
Web: <https://pubs.acs.org/page/ancac3/editors.html>
- ❑ **Panel Member**, the Engineering Panel, Research Grants Council, Hong Kong SAR, China, since November 2019.
<https://www.ugc.edu.hk/eng/rgc/about/membership/epanel/grf.html>
- ❑ **Recipient** of Vice Chancellor's Outstanding Fellow of the Faculty of Engineering, August 2019 - July 2022, CUHK (**Renewed**, <https://www.ee.cuhk.edu.hk/en-gb/news-events/news/2019/998-prof-xu-jianbin-2>)
- ❑ **Assessor** of Major R&D Project Panel, Commission of Development and Reform, Shenzhen Municipal Government, August 2019
- ❑ **Expert** of Working Group of National Research Strategies for Materials Development under the auspices of The Ministry of Science and Technology (MOST), Chinese Central Government, August 2019
- ❑ **Expert** selected for the "National Science and Technology Programmes Expert Database" since Summer 2019; with the approval by the State Ministry of Science and Technology (MOST)
- ❑ **Recipient** of Long Service Award (Golden Award), CUHK, March 2019
- ❑ **Recipient** of the Most Cited Paper Award in *Applied Physics Reviews* by American Institute of Physics (AIP), 2018
- ❑ **Vice-Chair**, Gordon Research Conference on Electronic and Photonic Processes and Interfacial Phenomena in Organic/Inorganic Hybrid Materials and Their Applications in Optoelectronic Devices, 2020, deferred to 2022
<https://www.grc.org/hybrid-electronic-and-photonic-materials-and-phenomena-conference/2020/>
- ❑ **Member**, Technical Advisory Panel, Incubation-Tech Business Program, Hong Kong Science and Technology Parks, since September 2018
<https://www.hkstp.org/media/4446/incutech-guideline-revamp7nov18.pdf>
- ❑ **Member**, Gordon Research Conference (GRC) Council, 2018-2022; <https://www.grc.org/>
- ❑ **Member**, Ad Hoc Committee, Nontechnology Council (NTC), IEEE, 2019
- ❑ **Assessor** of National Office of Science and Technology Awards, since 2019 (inclusion in National Science and Technology Awards Expert Database)
- ❑ **Interim Project Coordinator** of Smart Solar Energy Harvesting, Storage, and Utilization (T23-407/13-N), RGC Theme-based Research Scheme, from September 2018 to December 2019. It is the largest funded project in its kind by Research Grants Council (RGC).

- ❑ **Vice-Chair**, Gordon Research Conference on Electronic and Photonic Processes and Interfacial Phenomena in Organic/Inorganic Hybrid Materials and Their Applications in Optoelectronic Devices, June 2018, Shatin, Hong Kong SAR
<https://www.grc.org/hybrid-electronic-and-photonic-materials-and-phenomena-conference/2018/>
- ❑ **Recipient of the Exemplary Teaching Award** for 2017-2018 Academic Year by Department of Electronic Engineering, CUHK
- ❑ **Associate Editor** (Engineering Science, 2018-2022), *Science Bulletin*, a multi-disciplinary journal like *Nature* and *Science* in China, under auspices of Chinese Academy of Sciences and National Science Foundation of China; Editor-in-Chief, Prof. Enge Wang, Academician of CAS and Vice president of CAS, Former President of Peking University, Executive Chief Editor, Prof. Xiang Zhang, Academician of the US National Academy of Engineering, VC and President of Hong Kong University, <http://engine.scichina.com/publisher/scp/journal/SB?slug=Editorial Board>
- ❑ **IEEE Fellow (Institute of Electrical and Electronics Engineers)**, elevated to Class 2018 since Jan 2018), https://www.ieee.org/membership_services/membership/fellows/fellowsDirectory.html#
IEEE stands for the Institute of Electrical and Electronics Engineers. It is presumably the world's most famous and largest non-profit transnational academic organization in the fields of electronics, electrical, computer, communication, and automation engineering technology research. IEEE Fellow is the highest-level member of the association and the highest honor awarded by the organization. It is recognized as an authoritative honor and an important professional achievement in academic and technological communities. Every year, peer experts make outstanding contributions to members. The number of elected members shall not exceed 0.1% of the total number of IEEE members. Due to the small number of IEEE Fellows elected each year, the elected scientists are basically outstanding scientists who have made important achievements in the fields of science and engineering technology.
- ❑ **Advisory Professor**, Huazhong University of Science and Technology (HUST), Wuhan, China, Dec. 2017 - Nov. 2020
- ❑ **Plenary Speaker** at 2017 International Workshop on Atomic Force Microscopy for Advanced Functional Materials (AFM²), Wuhan, China, December 8-10, 2017;
<http://conf.scholarset.com/meeting/details?fid=10>
- ❑ **Keynote Speaker** at 2017 Advances in Functional Materials Conference, Aug. 14-18, UCLA, USA, along with C. Lieber (NAS Member, Professor at Harvard University), J. Rogers (NAS and NAE Member, Professor at Northwestern University), C. Murphy (NAS Member), Paul Weiss (ACS *Nano* Chief Editor and a leading American nanoscientist at the University of California, Los Angeles), *et al.*; <http://afm2017.functionalmaterials.org/> (absentia due visa issue)
- ❑ **Member** of Editorial Board of Nature Joint Partnership Journal – *2D Materials and Applications*, since Nov., 2016; <https://www.nature.com/npj2dmaterials/about/editor>
- ❑ **Advisor** of China Innovation Alliance of the Graphene Industry (CGIA), since September 2016, along with **Prof. Andre Geim, Nobel Prize Laureate** in Physics 2010. See the below website:
<http://www.c-gia.org/index.php?m=content&c=index&a=lists&catid=114>
- ❑ **Plenary Speaker** at 2015 International Graphene Innovation Conference, Oct. 28-30, Qingdao, China, along with Prof. Andre Geim (**Noble Laureate** 2010), Prof. Hui-Ming Cheng (CAS Academician), Prof. Zhong-Fan Liu (CAS Academician); 2015, <http://en.grapchina.org/> ; <http://www.grapchina.org/>

- ❑ **Recipient** of Research Excellence Award, CUHK, 2014-2015 academic year (October 2015)
- ❑ Named by **Nature Index** as CUHK **Outstanding Researcher** in 2013, December 17, 2014
http://www.nature.com/nature/journal/v516/n7531_suppl/516S64a.html
- ❑ **External Assessor**, Environment and Conservation Fund, Secretariat, Hong Kong SAR Government, since Oct., 2014
- ❑ **Chang Jiang (Cheung Kong) Scholar Chair Professorship**, the highest rank of professoriate honored by Ministry of Education, China, from Jan. 2015 to Dec. 2017
- ❑ **Lead Recipient** of The Higher Education Outstanding Scientific Research Output Awards (Science and Technology) in the category of Natural Sciences (2nd Class), Ministry of Education, China, December 2014.
<http://www.cutech.edu.cn/cn/zxgz/2014/12/1417370527164216.htm>
- ❑ **Co-Director**, Advanced Study Institute on New Materials, Croucher Foundation, Hong Kong, Oct. 2015–June 2016, with **Sir Andre Geim (Nobel Laureate 2010)** as a **Distinguished Lecturer**
- ❑ **Recipient** of Vice Chancellor’s Outstanding Fellow of the Faculty of Engineering, August 2014–July 2019, CUHK
- ❑ **Interviewee** by Phoenix TV on Wonder Material – Graphene, May 29, 2014, with 40000 hits in 4 weeks.
<http://v.ifeng.com/news/tech/2014005/01e0914c-7719-4029-8254-eae47e127c5c.shtml>
- ❑ **Nominee** by Ministry of Education for bidding National Natural Science Awards, Spring, 2014
- ❑ **Recipient** of Overseas High-Calibre Personnel (Level B) in Shenzhen, Aug. 2014– Aug. 2019, Shenzhen Municipal Government
- ❑ **Director**, Advanced Study Institute on Printed Electronics, Croucher Foundation, Hong Kong, April 2013 –March 2014, **dedicated to Sir Prof. Charles K. Kao (Nobel Laureate 2009)** on the occasion of his 80th Birthday
- ❑ **Fellow** of Hong Kong Institution of Engineers (HKIE), since September 2012
- ❑ **Lecture Professorship** of Molecular Science Forum, Chinese Academy of Sciences and Chinese Chemical Society, May, 2012
- ❑ **Supervisor** of Xiao-Mu Wang, Recipient of Dean’s Best Thesis Award, Faculty of Engineering, CUHK, March 2013; Recipient of “Honorable Mention” (the First Runner-up) of Engineering Science, Young Scientist Awards, Hong Kong Institution of Science, November 2012; Recipient of National Youth 1000 Talent Scheme, Chinese Central Government, Feb. 2015
- ❑ **Convener**, Initiatives of Energy, Materials, and Nano, since May 2010, CUHK
- ❑ **Recipient** of Joint Research Fund for Overseas Chinese, Hong Kong and Macau Scholars, a nationally prestigious **Talent Scheme** by NSFC, (2010-2016) (formerly National Science Fund for Distinguished Young Scholars (for Overseas Scholars), in awarded funding of 2.2 million RMB for research, **TWICE Consecutively**)
- ❑ Honored as **Member of International Advisory Committee**, International Conference on Nanoscience & Technology, China 2009 (ChinaNano2009), September 1-3, Beijing, China. See more at <http://www.chinanano.org/>, along with C. Lieber, H. Gleiter, S. Iijima, *et al.*
- ❑ **Visiting Research Fellow**, National Institute of Materials Science, Tsukuba, Japan, July –August 2009

- ❑ **Invited Speaker** at International Conference in Nanoscience & Technology 2006 (<https://analyticalscience.wiley.com/content/news-do/icn-t-2006-nano9-meets-stm06-basel>, also see *Nature* 442, 994-995 (31 August 2006)), Basel, Switzerland, along with Heinrich Rohrer, and Gerd Binnig (**Nobel Laureates 1986**)
- ❑ **Finalist of Best Poster Award** at Materials Research Society (MRS) Fall Meeting 2005, Nov. 28 – Dec. 2, 2005, Boston, USA
- ❑ **Best Poster Award** at The 3rd International Conference on Materials for Advanced Technologies (ICMAT 2005), July 3-8, 2005, Singapore
- ❑ International Conference **Best Poster Award** at The China International Conference on Nanoscience and Technology, June 9-11, 2005, Beijing, China
- ❑ **Visiting Scholar** at Department of Engineering, University of Cambridge, July –August 2001
- ❑ **Visiting Professorship** by Ministry of Education, China, Nov. 2000- Nov. 2002

LIST OF RESEARCH OUTPUTS OR CREATIVE WORKS

1. W. Jiang, T. Liang, H. Bu, **J. B. Xu**, W. Ouyang, Moiré-Driven Interfacial Thermal Transport in Twisted Transition Metal Dichalcogenides, arXiv preprint arXiv:2503.09141 (2025)
2. F. H. Shen, X. Y. Zhao, Y. G. Ma, **J. B. Xu***, Manipulate intrinsic light-matter interaction with bound state in the continuum in van der Waals metasurfaces by artificial etching, arXiv preprint arXiv:2503.03694, 2025
3. T. Liang, K. Xu, P. Ying, W. Jiang, M. Han, X. Wu, W. Quyang, Y. M. Yao, X. L. Zeng, Z. Q. Ye, Z. Y. Fan, **J. B. Xu**, Probing the ideal limit of interfacial thermal conductance in two-dimensional van der Waals heterostructures, (2025); arXiv:2502.13601
4. X. W. Zheng, X. Y. Zhao, **J. B. Xu**, Q. Miao*, Elimination of Double-slope Nonideality in C60 Field Effect Transistors, *Advanced Electronic Materials*, Research Article, No. aelm.202500101R1 (2025)
5. Y. Pang, Y. Zhou*, S. Qiu, L. Tong, N. Zhao, **J. B. Xu***, Artificial non-monotonic neurons based on nonvolatile anti-ambipolar transistor, *Nature Communications* **16**, 3188 (2025)
6. J. Zeng, X. Li, T. Liang, T. Rao, Z. Zheng, Y. Yao, **J. B. Xu**, L. Li, R. Sun*, Thermally Conductive and Self-healable Liquid Metal Elastomer Composites Based on Poly(ionic liquid)s, *Composites Part A* **194**, 108922 (2025)
7. Y. T. Li, M. M. Niu, J. P. Zeng, Q. Zhou, X. Wu, W. Ji, Y. L. Wang, R. Zhu, J. S. Qiao*, **J. B. Xu***, Y. Shi*, X. R. Wang*, D. W. He*, Chemical doping reveals band-like charge transport at grain-boundaries in organic transistors, *Nano Letters* **25** (14), 5XXX–5264 (2025)
8. X. W. Sun, D. L. Ding, Z. Nie, B. Wu, P. W. K. Fong, S. Qiu, T. Liang, G. Li, **J. B. Xu***, M. S. Long*, A Close-Space Fast Nucleation Strategy toward High-Efficiency Perovskite Light-Emitting Diodes, *Nano Letters* **25** (13), 5258–5264 (2025)
9. J. F. He, X. Y. Zhao, **J. B. Xu**, X. K. Sun*, Lithium tantalate microring cavities with Q factor exceeding 10 million, *Photonics Research* **13**(4), <https://doi.org/10.1364/PRJ.550518> (2025)
10. X. Li, S. Zhang, Y. Dang, Y. Li, P. K. Choudhury, **J. B. Xu***, Y. Jin*, Y. G. Ma*, Twist Angle-Controlled Near-Field Heat Transfer between Hyperbolic Photonic Surfaces, *ACS Photonics* **12** (3), 1432–1440 (2025)
11. J. Liu, C. Wang, Y. Wang, **J. B. Xu**, W. Ji*, M. S. Xu*, D. R. Yang*, Si-CMOS Compatible Synthesis of Wafer-Scale 1T-CrTe₂ with Step-Like Magnetic Transition, *Advanced Materials* **37** (12), 2414845 (2025)
12. P. H. Ying, W. Zhou, L. Svensson, E. Berger, E. Fransson, F. Eriksson, K. Xu, T. Liang, **J. B. Xu**, B. Song*, S. D. Chen*, P. Erhart*, Z. Y. Fan*, Highly efficient path-integral molecular dynamics simulations with GPUMD using neuroevolution potentials: Case studies on thermal properties of materials, *The Journal of Chemical Physics* **162**, 064109 (2025)
13. X. Wu, Z. Wu, T. Liang, Z. Fan, **J. B. Xu**, M. Nomura, P. H. Ying, Phonon coherence and minimum thermal conductivity in disordered superlattice, *Physical Review B* **111**, 085413 (2025)
14. R. Y. Huang, D. L. Ding, C. Huang, H. Zhang, G. Jiang, X. Guo, W. Cai, M. Lin, Z. Meng, **J.-B. Xu***, Y. H. Chen*, X. A. Zhang*, Multidimensional Integrated Architectonics for Hierarchical Hydrogels with Enhanced Thermal Conductivity for Effective Burn Healing, *ACS Applied Materials & Interfaces* **17** (7), 11085–11099 (2025)
15. X. Wan*, X. Wang, Y. Yu, T. Liu, M. Zhang, E. Z. Chen, K. Chen*, S. Wang, F. Shao, X. F. Gu, **J. B. Xu**, Bi₂O₂Se Nanoplates for Lateral Memristor Devices, *ACS Applied Nano Materials* **8** (5), 2260–2268 (2025)
16. C. S. Chen, Y. Q. Zhou, L. Tong, Y. Pang, **J. B. Xu***, Emerging 2D Ferroelectric Devices for In-Sensor and In-Memory Computing, *Advanced Materials* **37** (2), 2400332 (2025)

17. X. W. Sun, B. Chen, **J. B. Xu***, M. Z. Long*, Controllable polarity takes a leap forward in emissive perovskite semiconductors, *Science Bulletin*, S2095-9273 (25) 00043-X (2025)
18. B. Feng, S. Zhao, I. I. Razdolski, F. Liu, Z. Peng, Y. Wang, Z. Zhang, Z. Ni, **J. B. Xu**, D. Y. Lei*, Room-Temperature, Strong Emission of Momentum-Forbidden Interlayer Excitons in Nanocavity-Coupled Twisted van der Waals Heterostructures, *ACS Nano* **25** (4), 1609–1616 (2025)
19. X. Y. Huang, L. Tong, L. Xu, W. Shi, Z. Peng, Z. Li, X. Yu, W. Li, Y. Wang, X. Zhang, X. Gong, **J.-B. Xu**, X. Qiu, H. Wen, J. Wang, X. Hu, C. Xiong, Y. Ye*, X. S. Miao, L. Ye*. 2D MoS₂-based reconfigurable analog hardware, *Nature Communications* **16**, 101 (2025)
20. X. C. Li, A. Li, H. Shi, Y. M. Yao, Z. Ye, Z. Wen, L. L. Ren, X. L. Zeng, **J. B. Xu**, M. Han*, R. Sun, Semi-in-situ thermal transport characterization of thermal interface materials through a low-frequency thermoreflectance technique, *Measurement: Journal of the International Measurement Confederation* **240**, 115648 (2025)
21. X. Wan*, Y. D. Yu, X. Wang, T. A. Liu, M. K. Zhang, E. Z. Chen, K. Chen, S. T. Wang, F. Shao, X. F. Gu, **J. B. Xu**, Large-Area Black Phosphorus by Chemical Vapor Transport for Vertical and Lateral Memristor Devices, *Journal of Physical Chemistry C* **129** (1), 526-534 (2025)
22. K. Y. Wang, S. Zou, K. Fan, Z. Zhang, J. Li, H. Chen, F. Zou, K. S. Wong, **J. B. Xu***, K. Y. Yan*, Phase Modulation on Low-Dimensional Perovskite for High Performance Blue Light Emitting Diodes, *Advanced Optical Materials*, 2402597 (2024)
23. L. Tong, Y. Bi, Y. Wang, K. Peng, X. Huang, X. Yu, W. Ju, Z. Peng, Z. Li, L. Xu, R. Lin, W. Shi, H. Yu, H. Sun, K.-H. Xue, Q. He, M. Tang, X. L. Zhang, **J. B. Xu**, J. S. Miao, Jariwala Deep, W. Bao, X. S. Miao, P. Wang, L. Ye*, Programmable nonlinear optical neuromorphic computing with bare 2D material MoS₂, *Nature Communications* **15**, 10290 (2024)
24. J. S. Sheng, Z. Zhang, Y. Pang, X. Cheng, C. Zeng, **J. B. Xu**, L. Zhang, X. L. Zeng*, L. L. Ren*, R. Sun, Balancing Interfacial Toughness and Intrinsic Dissipation for High Adhesion and Thermal Conductivity of Polymer-Based Thermal Interface Materials, *ACS Applied Materials & Interfaces* **16** (45), 62961–62969 (2024)
25. X. C. Xie, Y. Pang*, S. Rao, C. Zeng, L. Zhang, C. Zhang, S. Guo, **J. B. Xu**, X. L. Zeng*, R. Sun, Thermal Interface Materials with High Adhesion and Enhanced Thermal Conductivity via Optimization of Polydimethylsiloxane Networks and Aluminum Fillers, *ACS Applied Polymer Materials* **6** (20), 12765–12773 (2024)
26. Y. M. Wei, Y. S. Pang, X. L. Zeng, C. Zeng, L. L. Ren, **J. B. Xu**, R. Sun, X. L. Zeng*, Thermally Conductive Yield - Stress Fluids with Reversible Solid - Liquid Transition Used as Thermal Interface Materials for Heat Dissipation of Chips, *Advanced Functional Materials* **34**, 2412156 (2024)
27. D. L. Ding, X. Wang, R. Huang, Z. Y. Wang, G. Jiang, L. Yu, H. T. Nie, X. L. Zeng, B. Tang, G. Qin, X. A. Zhang, Q. Zhang, **J. B. Xu**, Y. H. Chen*, Simulation-directed construction of bamboo-forest-like heat conduction networks to enhance silicon rubber composites' heat conduction properties, *Small* **20** (49), 2406229 (2024)
28. J. J. Zeng, T. Liang, B. H. Yang, T. Y. Rao, M. Han, Y. M. Yao*, **J. B. Xu**, R. Sun*, Poly(ionic liquid)s: A Promising Matrix for Thermal Interface Materials, *ACS Applied Materials & Interfaces* **16** (34), 45563–45576 (2024)
29. B. H. Yang, J. Zeng, T. Liang, M. Han*, C. Zhang, **J. B. Xu**, Y. M. Yao*, R. Sun*, Deformable and highly adhesive poly(ionic liquid)/liquid metal visco-elastomers for thermal management, *Journal of Materials Chemistry A* **12** (33), 22233 – 22247 (2024)

30. J. F. Fan, Z. Q. Ye, X. L. Zeng*, **J. B. Xu***, L. L. Ren*, R. Sun, C. P. Wong, Predicting bond line thickness of polymeric thermal interface materials based on the rheological properties, *Journal of Applied Physics* **136** (2), 025301 (2024)
31. Y. Li, Y. Dang, S. Zhang, X. Li, T. Chen, P. K. Choudhury, Y. Jin, **J. B. Xu**, Ph. Ben-Abdallah, B. Ju, Y.G. Ma*, Observation of Heat Pumping Effect by Radiative Shuttling, *Nature Communications* **15**, 5465 (2024)
32. C. Zeng, X. Zeng, X. Cheng, Y. Pang, **J. B. Xu**, R. Sun, X. L. Zeng*, Design of Thermal Interface Materials with Excellent Interfacial Heat/Force Transfer Ability via Hierarchical Energy Dissipation, *Advanced Functional Materials* **34** (41), 2406075 (2024)
33. C. Y. Hou, S. Y. Zhang, R. Liu, T. Gemming, A. Bachmatiuk, H. Zhao, H. Jia, S.-R. Huang, W. Zhou, **J. B. Xu**, J. B. Pang*, Mark H. Rümmeli, J. S. Bi*, H. Liu*, G. Cuniberti*, Boosting flexible electronics with integration of two-dimensional materials, *InfoMat* **6** (7), e12555 (2024)
34. J. J. Wang, X. Fu, X. Chen, G. Liu, Q. Zhao, H. Xu, F. Chen, **J. B. Xu**, S. H. Bae, J. D. Zhou, L. Dong, W. Z. Bao, Z. F. Di, J. S. Miao, W. D. Hu*, Deep multiband photodetectors enabled by reconfigurable band alignment in van der Waals heterostructures, *Optica* **11** (6), 791-798 (2024)
35. Y. S. Pang*, J. Li, Z. Wen, T. Liang, S. Gao, D. Huang, R. Sung, **J. B. Xu***, T. Luo*, X. L. Zeng*, An Ultra-soft Thermal Diode, *Materials Today Physics* **44**, 101450 (2024)
36. J. F. Fan, Y. Zhou, S. Ding, Y. Pang, X. Zeng, S. Guo*, **J. B. Xu***, L. Ren, R. Sun, X. L. Zeng*, Thermally Conductive Elastomer Composites with High Toughness, Softness, Resilience Enabled by Regulating Interfacial Structure and Dynamics, *Small* **20** (38), 2402265 (2024)
37. X. L. Zeng, T. Liang, X. Cheng, J. Fan, Y. Pang, **J. B. Xu**, R. Sun, X. N. Xia*, X. L. Zeng*, Design of Soft/Hard Interface with High Adhesion Energy and Low Interfacial Thermal Resistance via Regulation of Interfacial Hydrogen Bonding Interaction, *Nano Letters* **24** (21), 6386–6394 (2024)
38. X. D. Liu, D. Yu, C. Sun, Z. Mei, H. Chen, K. Zheng, P. Yan, F. Rao, **J. B. Xu***, J. L. Qu*, Y. W. Sun*, Ultrawideband Solid-State Terahertz Phase Shifter Electrically Modulated by Tunable Conductive Interface in Total Internal Reflection Geometry, *ACS Photonics* **11** (7), 2595–2603 (2024)
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