

Maohai XIE

Professor & Head

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Education

PhD 1994 University of London (Imperial College), U.K.

MSc 1988 Chinese Academy of Sciences (CAS), Beijing, China

BEng 1985 Tianjin University, China.

Employment

Professor 07/09 - Physics Department, The University of Hong Kong

Associate Professor 02/02 - 06/09 Physics Department, The University of Hong Kong

Assistant Professor 08/97 - 01/02 Physics Department, The University of Hong Kong

Postdoctoral Fellow 6/95 - 07/97 Imperial College, London, UK

Research Assistant 10/88 - 8/91 Institute of Semiconductors, CAS, China

Research

Areas: Experimental condensed matter physics, surface and materials science, molecular-beam epitaxy, scanning tunneling microscopy, electron diffraction, and photoelectron spectroscopy.

Publications: > 130 journal papers + 40 conference papers

Grants as PI: total HK\$24.6M
(2 CRF, 14 GRF, 2 NSFC/RGC, 1 SRFDP/RGC, and 1 ITS)

Professional Services:

- Editor board, *Philosophical Transactions A, the Royal Society*, 2013 -
- Editor board, *Proceedings of the Royal Society A: Mathematical, Physical & Engineering Sciences*, 2017 -
- Editor board, *Journal of Chinese Electron Microscopy*, 2009-13
- President, *Physical Society of Hong Kong (PSHK)*, 2011-13
- Vice-President, *Physical Society of Hong Kong (PSHK)*, 2009-11
- Executive Committee Member of *Surface/interface science division, Chinese Physical Society (CPS)*, 2003-
- Executive Committee Member of *Semiconductor Physics division, CPS*, 2005-17
- Nominator, Nobel Prize in Physics, 2014 -
- Nominator, Shaw Prize in Astronomy, 2016 -

Invited Talks:

- 2016 “*Molecular-beam epitaxy and scanning tunneling microscopic study of ultrathin transition-metal dichalcogenide layers*”, International Workshop on Nanomaterials and Nanodevices, Beijing, China
- 2016 “*Phase tuning of monolayer MoTe₂ during its molecular-beam epitaxy*”, Workshop on low dimensional semiconductor materials and technologies, Changsha, China
- 2016 “*MBE growth and STM studies of TMDs*”, Croucher ASI on ‘New functional materials concept: 2D atomic crystals & theor van der Waals heterostructures’, Hong Kong, China
- 2015 “*MBE of ultrathin MoSe₂ and WSe₂ and their properties probed by STM*”, Southern Physics Forum 2015 - Topological matters and quantum materials, Shenzhen, China
- 2013 “*Molecular-Beam Epitaxy of Layered Quantum Materials: Topological Insulator (TI) & Transition Metal Dichalcogenide (TMD)*”, Collaborative Conference on Material Research 2013, Singapore
- 2010 “*Van der Waals epitaxy of Bi₂Se₃ on Si(111) vicinal surfaces —an approach to achieving high quality topological insulator thin films*” The 16th International Conference on Superlattices, Nanostructures and Nanodevices (ICSNN-2010), Beijing, China
- 2009 “*Surface growth of GaN under excess gallium*”, The First Surface Kinetics International (SKI) Conference, Salt Lake City, Utah, USA
- 2009 “*Heteroepitaxial InN on GaN(0001): Interface, Strain and Island Formation*”, The Second International Workshop on Epitaxial Growth and Fundamental properties of Semiconductor Nanostructures, Shikoku, Japan
- 2008 “*Misfit Dislocations at InN/GaN Interface Studied by Scanning Tunneling Microscopy*”, Croucher ASI on Advanced Microscopies: Opportunities and Challenges in Nanomaterial and Surface Research, Hong Kong
- 2007 “*Energy barriers of adatom kinetics on GaN(0001) surface: a study by scanning tunneling microscopy*”, 3rd International Conference on Spectroscopy of Nano-Structured Materials and Thin Films (ICOSFM-2007), Oct. 2007, Beijing, China
- 2007 “*Growth of InN ‘Quantum Dots’ by Molecular-Beam Epitaxy*”, The Minerals, Metals and Materials (TMS) Society Annual Meeting (2007), Feb. 2007, Orlando, Florida, USA
- 2006 “*Initial stage heteroepitaxial growth of InN on GaN(0001) by molecular-beam epitaxy*”, International Symposium on Solid State Lighting, Beijing, China
- 2005 “*Heteroepitaxial InN Wetting Layer and Islands on GaN(0001)*”, Air Force Office of Scientific Research (AROSR) Indium Nitride Workshop, Hawaii, USA
- 2004 “*Growth of three-dimensional InN islands on GaN(0001) by molecular-beam epitaxy*”, The 1st International Conference on Spectroscopy of Nano-Structured Materials and Thin Films (ICOSFM-2004), Beijing, China
- 2003 “*Growth mode, strain and island characteristics of InN grown on GaN(0001) by molecular-beam epitaxy*”, International Conference on Materials for Advanced Technologies (ICMAT-2003), Singapore
- 2002 “*The origin of step bunching – negative Schwoebel barrier versus positive incorporation barrier*”, The 2nd bi-annual conference, Vacuum and Surface Science Society of Asia and Australia, Hong Kong
- 2002 “*Growth and Properties of InN/GaN heterostructures*”, Croucher Advanced Study Institute (ASI) on Nano-Science and Technology: Novel Structures and Phenomena, Hong Kong
- 2000 “*Novel Surface Features Observed during GaN Molecular-Beam Epitaxy*”, International Workshop on Surfaces and Low-Dimensional Quantum Structures and Effects, Beijing, China
- 2000 “*MBE-grown GaN – from surface morphology to film’s optical property*” IUMRS the 6th International Conference in Asia, Hong Kong

Teaching

- Undergraduate
 - Foundation courses: *Basic Physics; Physics for Engineering Students; Heat Light and Waves*
 - Core physics courses: *Introductory Quantum Mechanics; Statistical Mechanics and Thermodynamics*
 - General education: *Analogue and Digital Circuitry; Introduction to Nanoscience and Nanotechnology*
- Postgraduate courses: *Physics Experimental Techniques; Semiconductor Technology and Devices; Material Characterization Methods*
- Public Seminars: *Science Development in China; Solid State Lighting; An Introduction to Nano-World*
- Research Postgraduates Supervision:

Graduated:	14 PhD and 13 MPhil
On-going:	6 PhD

Administration and Services

2017 -	Head, Physics Department
2007-	Committee of Management of Electron Microscope Unit, HKU
2011-13	Committee of Research and Conference Grant, HKU
2011-13	Faculty Research Committee
2008-14	Chair, Research Committee, Physics Department, HKU
2014-16	Chair, Finance Committee, Physics Department, HKU
2009-11	Vice President, Physical Society of Hong Kong
2011-13	President, Physical Society of Hong Kong

List of journal publications (*corresponding or leading author)

1. * “One-dimensional phosphorus chain and two-dimensional blue phosphorene grown on Au (111) by molecular-beam epitaxy”, J.P. Xu, J.Q. Zhang, H. Tian, H. Xu, W.K. Ho, M.H. Xie, *Physical Review Materials* **1**, 061002(R) (2017)
2. “Graphene-oxide-wrapped ZnMn₂O₄ as a high performance lithium-ion battery anode”, Q. Sun, M. Bijelić, A.B. Djurišić, C. Suchomski, X. Liu, M.H. Xie, A.M.C. Ng, H.K. Li, K. Shih, S. Burazer, Ž. Skoko, I. Djerdj, J. Popović, *Nanotechnology* **28**, 455401 (2017)
3. * “Inversion Domain Boundary Induced Stacking and Bandstructure Diversity in Bilayer MoSe₂”, J.H. Hong, C. Wang, H.J. Liu, X.B. Ren, J.L. Chen, G. Wang, J.F. Jia, M.H. Xie, C.H. Jin, W. Ji, J. Yuan, Z. Zhang, *Nano Letters* **17** (11), 6653-6660 (2017)
4. “Multivalency-Driven Formation of Te-Based Monolayer Materials: A Combined First-Principles and Experimental study”, Z. Zhu, X. Cai, S. Yi, J. Chen, Y. Dai, C. Niu, Z. Guo, M.H. Xie, F. Liu, J.H. Cho, Y. Jia, Z. Zhang, *Physical Review Letters* **119**, 106101(2017)
5. * “Ultrathin layers of β -tellurene grown on highly oriented pyrolytic graphite by molecular-beam epitaxy”, J.L. Chen, Y.W. Dai, Y.Q. Ma, X.Q. Dai, W.K. Ho, M.H. Xie, *Nanoscale* **9**, 15945-15948(2017)
6. * “Strain in epitaxial high-index Bi₂Se₃ (221) films grown by molecular-beam epitaxy”, B. Li, W.G. Chen, X. Guo, W.K. Ho, X.Q. Dai, J.F. Jia, M.H. Xie, *Applied Surface Science* **396**, 1825-1830 (2017)
7. * “Quantum effects and phase tuning in epitaxial hexagonal and monoclinic MoTe₂ monolayers”, J. Chen, G.Y. Wang, Y.A. Tang, H. Tian, J. Xu, X.Q. Dai, H. Xu, J.F. Jia, W.K. Ho, M.H. Xie, *ACS Nano*. **11**, 3282 (2017)

8. "Template-free synthesis of hierarchical hollow V_2O_5 microspheres with highly stable lithium storage capacity", H. Li, J.J. Wang, X. Liu, Q. Sun, A.B. Djuriscic, M.H. Xie, Y. Mei, C. Tang, K. Shih, *RSC Advances* **7**, 2480 (2017)
9. * "Strain in epitaxial high-index Bi_2Se_3 (221) films grown by molecular-beam epitaxy", B. Li, W.G. Chen, X. Guo, W.K. Ho, X.Q. Dai, J.F. Jia, M.H. Xie, *Appl. Surf. Sci.* **396**, 1825 (2017)
10. * "Suspended Ga_2Se_3 film and epitaxial Bi_2Se_3 on $GaSb(001)$ by molecular-beam epitaxy", B. Li, Y. Xia, W.K. Ho, M.H. Xie, *J. Cryst. Growth* **459**, 76 (2017)
11. "Facile synthesis, characterization and electrochemical performance of multi-scale $AgVO_3$ particles", H. Li, H. Li, S. Wu, C. Liao, Z. Zhou, X. Liu, A.B. Djuriscic, M.H. Xie, C. Tang, K. Shih, *J. Alloys & Compounds* **674**, 56 (2016)
12. * "Nanoclusters of $CaSe$ in calcium-doped Bi_2Se_3 grown by molecular-beam epitaxy", P. Shang, X. Guo, B. Zhao, X. Dai, B. Li, J.F. Jia, Q. Li, M.H. Xie, *Nanotechnology* **27**, 085601 (2016)
13. * "Molecular-beam epitaxy of monolayer and bilayer WSe_2 : a scanning tunneling microscopy/ spectroscopy study and deduction of exciton binding energy", H. Liu, L. Jiao, L. Xie, F. Yang, J. Chen, W.K. Ho, C.L. Gao, J.F. Jia, X.D. Cui, M.H. Xie, *2D Materials* **2**, 034004 (2015)
14. * "Molecular-beam epitaxy of monolayer $MoSe_2$: growth characteristics and domain boundary formation", L. Jiao, H. Liu, J. Chen, Y. Yi, W.G. Chen, Y. Cai, J.N. Wang, X.Q. Dai, N. Wang, W.K. Ho, M.H. Xie, *New J. Physics* **17**, 053023 (2015)
15. "Long cycle life of $CoMn_2O_4$ lithium ion battery anodes with high crystallinity", M. Bijelic, X. Liu, Q. Sun, A.B. Djuriscic, M.H. Xie, A.M.C. Ng, C. Suchomski, I. Djerdj, Z. Skoko, J. Popovic, *J. Mater. Chem. A* **3**, 14759 (2015)
16. * "Strain in epitaxial Bi_2Se_3 grown on GaN and graphene substrates: a reflection high-energy electron diffraction study", B. Li, X. Guo, W.K. Ho, M.H. Xie, *Appl. Phys. Lett.* **107**, 081604 (2015)
17. * "Observation of intervalley quantum interference in epitaxial monolayer WSe_2 ", H. Liu, J. Chen, H. Yu, F. Yang, L. Jiao, G.B. Liu, W.K. Ho, C.L. Gao, J.F. Jia, W. Yao, M.H. Xie, *Nat. Comm.* **6**, 8180 (2015)
18. * "Line and point defects in $MoSe_2$ bilayer studied by scanning tunneling microscopy and spectroscopy", H. Liu, H. Zheng, F. Yang, L. Jiao, J. Chen, W.K. Ho, C. Gao, J.F. Jia, M.H. Xie, *ACS Nano* **9**, 6619 (2015)
19. "An alumina stabilized graphene oxide wrapped SnO_2 hollow sphere LIB anode with improved lithium storage", X. Liu, Q. Sun, A.M.C. Ng, A.B. Djuriscic, M.H. Xie, B. Dai, J. Tang, C. Surya, C. Liao, K. Shih, *RSC Advances* **5**, 100783 (2015)
20. "Iron oxide/graphene composites as negative-electrode materials for lithium ion batteries – optimum particle size for stable performance", Q. Sun, X. Liu, A.B. Djuriscic, T.L. Leung, M.H. Xie, A.M.C. Ng, H. Li, C. Liao, Z. Deng, K. Shih, *RSC Advances* **5**, 91466 (2015)
21. "In situ synthesis of TiO_2 (B) nanotube/nanoparticle composite anode materials for lithium ion batteries", X. Liu, Q. Sun, A.M.C. Ng, A.B. Djuriscic, M.H. Xie, C. Liao, K. Shih, M. Vranjes, J.M. Nedeljkovic, Z. Deng, *Nanotechnology* **26**, 425403 (2015)
22. "In situ synthesis of $Cu_xO/SnO_x@CNT$ and $Cu_xO/SnO_x@SnO_2/CNT$ nanocomposite anodes for lithium ion batteries by simple chemical treatment process", X. Liu, F. Liu, Q. Sun, A.M.C. Ng, A.B. Djuriscic, M.H. Xie, C. Liao, K. Shih, Z. Deng, *ACS Applied Materials & Interfaces* **6**, 13478 (2014)
23. * "Crossover from 3D to 2D quantum transport in Bi_2Se_3/In_2Se_3 superlattices", Y.F. Zhao, H.W. Liu, X. Guo, Y. Jiang, Y. Sun, H.C. Wang, Y. Wang, H.D. Li, M.H. Xie, X.C. Xie, J. Wang, *Nano. Lett.* **14**, 5244 (2014)
24. * "Dense network of one-dimensional midgap metallic modes in monolayer $MoSe_2$ and their spatial undulations", H. Liu, L. Jiao, F. Yang, Y. Cai, X.X. Wu, W.K. Ho, C.L. Gao, J.F. Jia, N. Wang, H. Fan, W. Yao, M.H. Xie, *Phys. Rev. Lett.* **113**, 066105 (2014)
25. * "Anisotropic topological surface states on high-index Bi_2Se_3 films", Z. Xu, X. Guo, M.Y. Yao, H.T. He, L. Miao, L. Jiao, H.C. Liu, J.N. Wang, D. Qian, J.F. Jia, W.K. Ho, M.H. Xie, *Adv. Mater.* **25**, 1557 (2013)
26. * "Single domain Bi_2Se_3 films grown on $InP(111)A$ by molecular-beam epitaxy", X. Guo, Z. Xu, H.C. Liu, B. Zhao, X.Q. Dai, H.T. He, J.N. Wang, H. Liu, W.K. Ho, M.H. Xie, *Applied Physics Letters* **102**, 151604 (2013)
27. "Recovery of clean ordered (111) surface of etched silicon", A.M.C. Ng, L. Dong, W.K. Ho, A.B. Djuriscic, M.H. Xie, H.S. Wu, N. Lin, S.Y. Tong, *Applied Surface Science* **282**, 156 (2013)

28. “Disorder-induced linear magnetoresistance in (221) topological insulator Bi_2Se_3 films”, H.T. Ho, H.C. Liu, B.K. Li, X. Guo, Z. Xu, M.H. Xie, J.N. Wang, *Applied Physics Letters* **103**, 031606 (2013)
29. * “Molecular-beam epitaxy of topological insulator Bi_2Se_3 (111) and (221) thin films”, M.H. Xie, X. Guo, Z. Xu, W.K. Ho, *Chinese Physics B* **22**, 068101 (2013)
30. “Triple-period partial misfit dislocations at the InN/GaN(0001) interface: a new dislocation core structure for III-N materials”, L.X. Zhang, W.E. MaMahon, Y. Liu, M.H. Xie, N. Wang, S.B. Zhang, *Surface Science* **606**, 1728 (2012)
31. * “Ordered versus random nucleation of InN islands grown by molecular-beam epitaxy”, H. Zheng, M.H. Xie, Q.K. Xue, *Surface Science* **606**, 120 (2012)
32. * “Superlattices of Bi_2Se_3/In_2Se_3 : Growth characteristics and structural properties”, Z.Y. Wang, X. Guo, H.D. Li, T.L. Wong, N. Wang, M.H. Xie, *Applied Physics Letters* **99**, 023112 (2011)
33. * “Growth of multilayers of $Bi_2Se_3/ZnSe$: Heteroepitaxial interface formation and strain”, H.D. Li, Z.Y. Wang, X. Guo, T.L. Wong, N. Wang, and M.H. Xie, *Applied Physics Letters* **98**, 043104 (1-3) (2011)
34. * “Effect of starting surfaces of GaN on defect formation in epitaxial Co thin films”, *J. Appl. Phys.* **110** (2011)
35. * “Growth characteristics of topological insulator Bi_2Se_3 films on different substrates”, Z.Y. Wang, H.D. Li, X. Guo, W.K. Ho, M.H. Xie, *J. Cryst. Growth* **334**, 96 (2011)
36. “First-Principle Study of Magnetism Induced by Vacancies in Graphene”, X.Q. Dai, J.H. Zhao, M.H. Xie, Y.N. Tang, Y.H. Li, B. Zhao, *Euro. Phys. J. B* **80**, 343 (2011)
37. * “Surface modification for epitaxial growth of single crystalline cobalt thin films with uniaxial magnetic anisotropy on GaN(0001)-1 × 1 surfaces”, H.D. Li, K. He, M.H. Xie, N. Wang, J.F. Jia, Q.K. Xue, *New Journal of Physics* **12**, 073007(1-9) (2010)
38. * “Reactive Reactive interface formation and Co-induced ($\sqrt{7} \times \sqrt{7}$) superstructure on a GaN(0001) pseudo-(1 × 1) substrate surface”, H.D. Li, G.H. Zhong, H.Q. Lin, M.H. Xie, *Physical Review B* **81**, 233302(1-4) (2010)
39. * “The van der Waals epitaxy of Bi_2Se_3 on the vicinal Si(111) surface: an approach for preparing high-quality thin films of a topological insulator”, H.D. Li, Z.Y. Wang, X. Kan, X. Guo, H.T. He, Z. Wang, J.N. Wang, T.L. Wong, N. Wang, and M.H. Xie, *New Journal of Physics* **12**, 103038 (1-11) (2010)
40. * “Molecular-beam epitaxy of AlInN: An effect of source flux and temperature on indium atom incorporation in alloys”, Z.Y. Wang, B.M. Shi, Y. Cai, N. Wang, M.H. Xie, *Journal of Applied Physics* **108**, 033503(1-6) (2010)
41. “Structural, Electronic, and Electrochemical Properties of Cathode Materials Li_2MSiO_4 ($M = Mn, Fe, \text{ and } Co$): Density Functional Calculations”, G.H. Zhong, Y.L. Li, P. Yan, Z. Liu, M.H. Xie, H.Q. Lin, *Journal of Physical Chemistry C* **114**, 3693-3700 (2010)
42. * “Synthesis of tungsten oxide comb-like nanostructures”, K.Q. Hong, M.H. Xie, R. Hu, and H.S. Wu, *Journal of Materials Research* **23**, 2657-2661 (2008)
43. * “A study of $Al_{1-x}In_xN$ growth by reflection high-energy electron diffraction-incorporation of cation atoms during molecular-beam epitaxy”, B.M. Shi, Y. Wang, M.H. Xie, H.S. Wu, *Applied Physics Letters* **92**, 101902(1-3) (2008)
44. “Hydrothermal synthesis vs electrodeposition for high specific capacitance nanostructured NiO films”, Y.Y. Xi, D. Li, A.B. Djuricic, M.H. Xie, K.Y.K. Man, W.K. Chan, *Electrochemical and Solid State Letters* **11**, D56-D59 (2008)
45. “The effect of Cu on O adsorption on a ZnO(0001) surface: a first-principles study”, X.Q. Dai, H.J. Yan, J.L. Wang, Y.M. Liu, Z.X. Yang, M.H. Xie, *Journal of Physics-Condensed Matter* **20**, 095002(1-4) (2008)
46. * “Kinetic energy barriers on the GaN(0001) surface: A nucleation study by scanning tunneling microscopy”, H. Zheng, M.H. Xie, H.S. Wu, Q.K. Xue, *Physical Review B* **77**, 045303(1-5) (2008)
47. * “Dislocation network at InN/GaN interface revealed by scanning tunneling microscopy”, Y. Liu, Y. Cai, L.X. Zhang, M.H. Xie, N. Wang, S.B. Zhang, and H.S. Wu, *Applied Physics Letters* **92**, 230917(1-3) (2008)
48. * “Diameter control of tungsten oxide nanowires as grown by thermal evaporation”, K.Q. Hong, M.H. Xie, R. Hu, H.S. Wu, *Nanotechnology* **19**, 085604(1-5) (2008)
49. * “Synthesizing tungsten oxide nanowires by a thermal evaporation method”, K.Q. Hong, M.H. Xie, R. Hu, and H.S. Wu, *Applied Physics Letters* **90**, 173121(1-3) (2007)

50. "Structural properties of oxygen on InN(0001) surface", X.Q. Dai, J.L. Wang, H.J. Yan, X.H. Wu, and M.H. Xie, *Surface Science* **601**, 2161-2165 (2007)
51. "Slow oscillation in the low-temperature optical reflectance spectra of ZnO: Surface space-charge effect", J.Q. Ning, S.J. Xu, S.L. Shi, M.H. Xie, *Applied Physics Letters* **90**, 061109(1-3) (2007)
52. * "Wetting of GaN islands by excess Ga: Origin of different appearances of GaN islands in scanning tunneling microscopy", H. Zheng, M.H. Xie, H.S. Wu, and Q.K. Xue, *Physical Review B* **75**, 205310(1-5) (2007)
53. "Growth of cubic and hexagonal InN nanorods", X.M. Cai, K.Y. Cheung, A.B. Djuriscic, and M.H. Xie, *Materials Letters* **61**, 1563-1566 (2007)
54. "GaN nanowires – influence of the starting material on nanowire growth", A.B. Djuriscic, K.H. Tam, Y.F. Hsu, S.L. Zhang, M.H. Xie, W.K. Chan, *Thin Solid Films*, **516**, 238 (2007)
55. * "Tungsten oxide nanowires synthesized by a catalyst-free method at low temperature", K.Q. Hong, M.H. Xie, H.S. Wu, *Nanotechnology* **17**, 4830-4833 (2006)
56. "Synthesis of potassium tungstate micro-walls by thermal evaporation", K.Q. Hong, M.H. Xie, R. Hu, H.S. Wu, *Journal of Crystal Growth* **295**, 75-78 (2006)
57. "Reverse biased annealing: Effective post treatment tool for polymer/nano-composite solar cells", A.K. Pandey, J.M. Nunzi, H. Wang, C.C. Oey, A.B. Djuriscic, M.H. Xie, Y.H. Leung, K.K.Y. Man, and W.K. Chan, *Organic Electronics* **8**, 396-400 (2007)
58. "Observation of a ($\sqrt{3} \times \sqrt{3}$)R30° reconstruction on GaN(0001) by RHEED and LEED", J. Wang, Ricky So, Y. Liu, Huasheng Wu, M.H. Xie, S.Y. Tong, *Surface Science (Letters)* **600**, L169-L174 (2006)
59. * "Mass transport and alloying during InN growth on GaN by molecular-beam epitaxy", Y. Liu, M.H. Xie, H.S. Wu and S.Y. Tong, *Applied Physics Letters* **88**, 221916(1-3) (2006)
60. "Optical properties of highly faceted ZnO rods", A.B. Djuriscic, W.M. Kwok, W.K. Chan, D.L. Philips, Y.H. Leung, M.H. Xie, H.Y. Chen, C.L. Wu and S. Gwo, *Journal of Applied Physics* **99**, 033517(1-4) (2006)
61. "Observation of both second-harmonic and multiphoton-absorption-induced luminescence in ZnO", D.C. Dai, S.J. Xu, S.L. Shi, M.H. Xie, C.M. Che, *IEEE Photonics Technology Letters*, **18**, 1533-1535 (2006)
62. "Titania-nanotube-array-based photovoltaic cells", H. Wang, C.T. Yip, K.Y. Cheung, A.B. Djuriscic, M.H. Xie, Y.H. Leung, W.K. Chan, *Applied Physics Letters* **89**, 023508(1-3) (2006)
63. "Straight and helical InGaN core-shell nanowires with a high In core content", X.M. Cai, Y.H. Leung, K.Y. Cheung, K.H. Tam, A.B. Djuriscic, M.H. Xie, H.Y. Chen, S. Gwo, *Nanotechnology* **17**, 2330-2333 (2006)
64. "GaN nanowires: CVD synthesis and properties", X.M. Cai, A.B. Djuriscic, M.H. Xie, *Thin Solid Films* **515**, 984 (2006)
65. * "Incommensurate metallic surfactant layer on top of InN film", Y. Liu, J. Wang, M.H. Xie, and H. S. Wu, *Surface Review and Letters* **13**, 815-818 (2006)
66. * "Origin of triangular island shape and double step bunching during GaN growth by molecular-beam epitaxy under excess Ga conditions", M.H. Xie, M. Gong, E.K.Y. Pang, H.S. Wu, S.Y. Tong, *Physical Review B* **74**, 085314(1-6) (2006)
67. "Characterization of block copolymers using scanning probe microscopy", A.B. Djuriscic, H. Wang, W.K. Chan, M.H. Xie, *J. Scanning Probe Microscopy* **1**, 21-31 (2006)
68. "Polymer-TiO₂ solar cells: TiO₂ interconnected network for improved cell performance", C.C. Oey, A.B. Djuriscic, H. Wang, K.K.Y. Man, W.K. Chan, M.H. Xie, Y.H. Leung, A. Pandey, J.M. Nunzi, P.C. Chui, *Nanotechnology* **17**, 706-713 (2006)
69. * "Transition between wurtzite and zinc-blende GaN: An effect of deposition condition of molecular-beam epitaxy", B.M. Shi, M.H. Xie, H.S. Wu, N. Wang, S.Y. Tong, *Applied Physics Letters* **89**, 151921(1-3) (2006)
70. "Metal phthalocyanine nanoribbons and nanowires", W.Y. Tong, A.B. Djuriscic, M.H. Xie, A.C.M. Ng, K.Y. Cheung, W.K. Chan, Y.H. Leung, H.W. Lin, S. Gwo, *Journal of Physical Chemistry B* **110**, 17406-17413 (2006)
71. * "A simple method for growing high quantity tungsten-oxide nanoribbons under moist condition", K.Q. Hong, W.C. Yiu, H.S. Wu, J. Gao, and M.H. Xie, *Nanotechnology* **16**, 1608-1611 (2005)

72. "Growth of SiO_x nanowire bunches co-catalysed with Ga and Ni", X.M. Cai, A.B. Djuriscic, M.H. Xie, *Journal of Applied Physics* **98**, 074313(1-5) (2005)
73. "A model for steady-state luminescence of localized state ensemble", Q. Li, S.J. Xu, M.H. Xie, S.Y. Tong, *Europhysics Letters* **71**, 994-1000 (2005)
74. * "Coherent and dislocated three-dimensional islands of $\text{In}_x\text{Ga}_{1-x}\text{N}$ self-assembled on GaN(0001) during molecular-beam epitaxy", Y. Liu, Y.G. Cao, H.S. Wu, M.H. Xie, and S.Y. Tong, *Physical Review B* **71**, 153406(1-4) (2005)
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