

# Curriculum Vitae

i) Name: **Xuming ZHANG**

ii) Academic qualifications:

B.Eng., Mechanical Engineering, University of Science & Technology of China (USTC), 1994.

M.Eng., Optical Engineering, Shanghai Institute of Optics & Fine Mechanics (SIOFM), Chinese Academy of Sciences (CAS), 1997.

M.Eng., Mechanical Engineering, National University of Singapore (NUS), Singapore, 2000.

Ph.D., Electrical & Electronic Engineering, Nanyang Technological University (NTU), Singapore, 2006.

iii) Previous academic positions held (with dates): *N.A.*

iv) Present academic position:

Assistant Professor, Hong Kong Polytechnic University, 02 Jan 2009 – 31 Dec 2014

Associate Professor, Hong Kong Polytechnic University, 01 Jan 2015 – now

v) Previous relevant research work:

Optofluidics; microfluidics; photocatalysis; biochips; biomimetics.

vi) Publication records:

## Section A - Five most representative publications in recent five years

[1] Q.M. Chen, X.L. Tong, Y.J. Zhu, C.C. Tsoi, Y.W. Jia, Z.H. Li and X.M. Zhang\*, “Aberration-free aspherical in-plane tunable liquid lenses by regulating local curvatures,” *Lab Chip* 20(5), 2020. (7th of 7 authors, corresponding author)

[2] Y.J. Zhu, Q.M. Chen, L.Y. Shao, Y.W. Jia and X.M. Zhang\*, “Microfluidic immobilized enzyme reactors for continuous biocatalysis,” *React. Chem. Eng.* 5(1), 2020 (**Front cover**). (5th of 5 authors, corresponding author)

[3] Y.J. Zhu, Z.Y. Huang, Q.M. Chen, Q. Wu, X.W. Huang, P-K So, L.Y. Shao, Z.P. Yao, Y.W. Jia, Z.H. Li, W.X. Yu, Y. Yang, A.Q. Jian, S.B. Sang, W.D. Zhang and X.M. Zhang\*, “Continuous artificial synthesis of glucose precursor using enzyme-immobilized microfluidic reactors,” *Nat. Commun.* 10(4049), 2019. (16th of 16 authors, corresponding author)

[4] F. R. Tan, N. Wang, D. Y. Lei, W. X. Yu and X. M. Zhang\*, “Plasmonic black absorbers for enhanced photocurrent of visible-light photocatalysis,” *Adv. Opt. Mater.* 5(1) 1600399, 2017. (**Back cover**). (5th of 5 authors, corresponding author)

[5] Q. M. Chen, A. Q. Jian, Z. H. Li\*, and X. M. Zhang\*, “Optofluidic tunable lenses using laser-induced thermal gradient,” *Lab Chip* 16(1) 104 – 111, 2016. (**Inside back cover**). (4th of 4 authors, corresponding author)

## Section B - Five representative publications beyond the recent five-year period.

[1] N. Wang, X. M. Zhang\*, B. L. Chen, W. Z. Song, N. Y. Chan, and H. L. W. Chan, “Microfluidic photoelectrocatalytic reactors for water purification with integrated visible-light source,” *Lab Chip* 12(20) 3983–3990, 2012.

- [2] Y. Yang, A. Q. Liu, L. K. Chin, X. M. Zhang, D. P. Tsai, C. L. Lin, C. Lu, G. P. Wang and N. I. Zheludev, "Optofluidic waveguide as a transformation optics device for lightwave bending and manipulation," *Nat. Commun.* 3, 651, 2012.
- [3] K. Zhang, A. Q. Jian, X. M. Zhang\*, Y. Wang, Z. H. Li, and H-Y Tam, "Laser-induced thermal bubbles for microfluidic applications," *Lab Chip* 11(7) 1389-1395, 2011.
- [4] L. Lei, N. Wang, X. M. Zhang\*, Q. D. Tai, D. P. Tsai and Helen L.W. Chan, "Optofluidic planar reactors for photocatalytic water treatment using solar energy," *Biomicrofluid.* 4(4) 043004, 2010.
- [5] W. M. Zhu, X. M. Zhang, H. Cai, T. Jonathan, and T. Bourouina, "A micromachined optical double well for thermo-optic switching via resonant tunneling effect," *Appl. Phys. Lett.* 92(25) 251101, 2008.

vii) Others - Prize and awards

- [1] *Best Paper Award*, IMCO2017 conference, 25 – 28 July 2017, Singapore.
- [2] *Cheminas Best Poster Awards*, ISMM2016 conference, 30 May–1 Jun 2016, Hong Kong.
- [3] *Best Paper Award*, Optofluidics 2014 conference, 28 - 30 Aug 2014, Guangzhou, China.
- [4] *Prestigious Engineering Achievement Awards*, Institute of Engineers, Singapore, 2006.
- [5] *Chinese State Awards for Excellent Self-Financed Students Abroad*, Ministry of Education, China, 2006.
- [6] *Young Inventor Awards*, Asian Wall Street Journal, Hong Kong, 2005.
- [7] *Singapore Millennium Foundation (SMF) Postdoctoral Fellowship*, Singapore, 2005.

viii) Patents (selected)

- [1] M. Yu, H. Bae, and X. M. Zhang, *Ultra-miniature fiber-optic pressure sensor system and method of fabrication*, **US patent 8,151,648**, 10 April 2012.
- [2] A. Q. Liu, X. J. Liang, X. M. Zhang and Y. Sun, *Cell analysis using laser with external cavity*, **US patent 7,767,444**, 3 August 2010.
- [3] A. Q. Liu, V. M. Murukeshan, X. M. Zhang, and C. Lu, *Optical crossconnect and mirror system*, **Singapore patent 95,730**, 31 March 2006.
- [4] A. Q. Liu, V. M. Murukeshan, X. M. Zhang, and C. Lu, *Optical crossconnect and mirror systems*, **US patent 6,788,843**, 7 September 2004.

ix) Book chapters

- [1] X. M. Zhang, Chapters 5-8, in "*Photonic MEMS devices - Design, Fabrication and Control*," Ai Qun Liu (ed.), Taylor-Francis, 2008.
- [2] N. Wang and X. M. Zhang, Chapter 19. Microfluidic Photocatalysis, in "*Optical MEMS, Nanophotonics, and Their Applications*," Taylor and Francis, Guangya Zhou and Chengkuo Lee (ed.), in press.

x) Theses supervised (selected)

- [1] Qingming Chen, Ph.D. student, 05 Sep 2014 – 04 Sep 2017 (thesis submitted), thesis title: "*Optofluidic tunable lenses for in-plane light manipulation.*"
- [2] Tenghao Li, Hong Kong PhD Fellowship, 2 Jul 2014 – 1 Jul 2017 (thesis submitted), thesis title "*Liquid-crystal-based planar waveguide devices for optical interconnects.*"
- [3] Furui Tan, Ph.D. student (graduated), 24 Aug 2012 – 13 Aug 2015, thesis title "*Broadband plasmonic absorbers for sunlight photocatalysis.*"