Curriculum Vitae

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EDUCATIONAL BACKGROUND

Jul 2001 - Mar 2006	**Ph.D.** (Photonics and Nano-photonics) Nanyang Technological University (NTU), Singapore
Oct 1998 - Oct 2000	**M.Eng.** (Microsystems Technology) National University of Singapore (NUS), Singapore
Sep 1994 - Jun 1997	**M. Eng.** (Optical Engineering) Shanghai Institute of Optics & Fine Mechanics (SIOFM) The Chinese Academy of Science, China
Sep 1989 - Jul 1994	**B. Eng.** (Electronic & Mechanical Engineering) University of Science & Technology of China (USTC), China

WORKING EXPERIENCE

Jan 2015 - now	**Associate Professor** Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong
Jan 2009 - Dec 2014	**Assistant Professor** Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong
Sep 2007 - Dec 2008	**Research Associate (Faculty)** Department of Mechanical Engineering, University of Maryland College Park (UMCP), U.S.A.
Aug 2005 - Sept 2007	**Singapore Millennium Fellowship (SMF) Postdoctoral Fellow** School of Electrical and Electronic Engineering, Nanyang Technological University (NTU), Singapore
Oct 2000 - Jul 2005	**Research Associate** School of Electrical and Electronic Engineering, Nanyang Technological University (NTU), Singapore

BOOK CHAPTERS

1. Ning Wang and Xuming Zhang, “Chapter 19. Microfluidic Photocatalysis”, in Optical MEMS, nanophotonics, and their applications, Taylor and Francis, ed. Guangya Zhou and Chengkuo Lee, May 2017.
2. Chapters 5-8, in *Photonic MEMS devices - Design, Fabrication and Control*, Ai-Qun Liu (ed.), Taylor-Francis, 2008.

PATENTS

19 Sep 2017	**Xuming Zhang**, Tenghao Li, and Qingming Chen An optical switch and optical cross-connect device (一种光开关及光交叉互连器件), China Patents of Invention, Application No. 201710851522.6
19 Sep 2017	**Xuming Zhang**, Tenghao Li, and Qingming Chen An optical switch and optical cross-connect device (一种光开关及光交叉互连器件), China Patents for Utility Models, Application No. 201721204407.1
20 Sep 2017	**Xuming Zhang**, Tenghao Li, and Qingming Chen An optical cross-connect device based on liquid crystal electro-optic waveguide (一种基于液晶电光波导的光学交叉互连器件), China Patents of Invention, Application No. 201710855251.1
18 Mar 2015	L. Gao, B. Chen, G. Y. Zhang, **X. M. Zhang** A type of external-cavity laser (一种外腔激光器), China patent no. CN103004039B
27 Mar 2013	L. Gao, B. Chen, G. Y. Zhang, **X. M. Zhang** A type of external-cavity laser (一种外腔激光器), China patent no. CN103004039A
3 Mar 2015	M. Yu, H. Bae, and **X. M. Zhang** Ultra-miniature fiber-optic pressure sensor system and method of fabrication, US Patents 8,966,988 B2
10 Apr 2012	M. Yu, N. Silas, Y. X. Liu and **X. M. Zhang** Ultra-miniature fiber-optic pressure sensor system and method of fabrication, US 61/032,469
3 Aug 2010	A. Q. Liu, X. J. Liang, **X. M. Zhang** and Y. Sun Cell analysis using laser with external cavity, U.S. Patent 7,767,444
7 Sep 2004	A. Q. Liu, **X. M. Zhang**, C. Lu and T. H. Cheng, Optical crossconnect and mirror systems, US patent No. 6,788,843

AWARDS & PRIZES (selected)

28 July 2017	**Best Poster Award**, The 7th International Multidisciplinary Conference on Optofluidics (IMCO2017), 25 – 28 July 2017, Singapore.
1 Jun 2016	**Cheminas Best Poster Awards**, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May – 1 Jun 2016, Hong Kong.
30 Aug 2014	**Best Poster Awards**, The 4th International Conference on Optofluidics, 28 – 30 Aug 2014, Guangzhou, China.
5 Jul 2013	**Best Poster Awards,** The 7th International Conference on Materials for Advanced Technologies (ICMAT 2013), 30 Jun – 5 Jul 2013, Singapore.
13 Dec 2011	**Best Paper Awards**, The 1st International Conference on Optofluidics, 11 – 13 Dec 2011, Xi'an, China

27 Oct 2006	**IES Prestigious Engineering Achievement Awards,** Singapore Engineering Society, Singapore
25 Feb 2006	**Chinese State Awards** for Outstanding Self-financed Students Abroad, Ministry of Education of China
27 Jan 2005	Bronze prize, **Young Inventor Awards 2005**, the Asian Wall Street Journal, Hong Kong
13 Mar 2005	**Gold Prize**, College of Engineering (CoE) Technological Week, Nanyang Technological University, Singapore
08 Mar 2003	**Gold Prize**, College of Engineering (CoE) Technological Week, Nanyang Technological University, Singapore

HIGHLIGHTS OF RESEARCH ACHIEVEMENTS (in reverse chronological order)

19 January 2017	**Advanced Optical Materials**, back cover Plasmonic black absorbers for enhanced photocurrent of visible-light photocatalysis, vol. 5, no. 1, paper 1600399
6 December 2016	**Sing Tao Daily** PolyU graduates invented photocatalytic wastewater purifier, page F2.
07 Jan 2016	**Lab on a Chip**, inside back cover Optofluidic tunable lenses using laser-induced thermal gradient, vol. 16, no. 1, pp. 104 – 111, 07 Jan 2016.
29 Apr 2016	**Advances in Engineering** Clam-inspired nanoparticle immobilization method using adhesive tape as microchip substrate
14 Aug 2014	**International Innovation** Benjamin Skuse, “Waste not, want not,” no. 148, pp. 66–68.
24 Oct 2012	**SPIE Newsroom** Optofluidic transformation optics for innovative devices. (DOI: 10.1117/2.1201210.004509).
Oct 2012	**Nature Photonics** David Pile, “Photoelectrocatalysis - Improved efficiency,” vol. 6, no. 10, pp. 637.
May 2011	**Nature Photonics** Oliver Graydon, “Microfluidics: Laser-induced bubbles create valves and pumps,” vol. 5, no. 5, pp. 256. www.nature.com/nphoton/
Mar 2011	**Technology Review** Jan-Oliver Löfken, “Mikro-reaktor säubert wasser” (English: Microreactor clean water), pp. 25. http://www.heise.de/
2 Mar 2011	**Agency for Science Technology and Research**, Singapore Michael Segal, “Fiber-optics: Mastering bandwidth,” A*STAR news. http://www.research.a-star.edu.sg
28 Jan 2011	**Medill Reports** Chris Bentley, “Researchers purify water with trapped sunlight.” http://news.medill.northwestern.edu/
10 Jan 2011	**American Institute of Physics (AIP)** Jason Socrates Bardi, “Trapped sunlight cleans water.” http://www.newswise.com/

11 Jan 2011	**The Green Optimistic** Ovidiu Sandru, "Photocatalysis-based water purifier uses sunlight to break down impurities." http://www.greenoptimistic.com/
16 Jan 2011	**Gizmag** Ben Coxworth, "Microfluidics and sunlight combined to purify water." http://www.gizmag.com/
24 Dec 2007	**Applied Physics Letters**, cover page Micromachined optical well structure for thermo-optic switching, vol. 91, no. 26, paper no. 261106.
Oct 2005	**Photonics Spectra** Daniel Burgess, "MEMS structures used to injection-lock miniature laser," pp. 16. http://www.photonics.com/
9 Feb 2004	**Frankfurter Allgemeine Zeitung** Manfred Lindinger, "Laserlicht nach Belieben Ein winziger beweglicher Spiegel beeinfluβt die Wellenlänge" (English translation: Laser light at discretion), pp. 32.
8 Jun 2002	**Fibers.org** Tami Freeman, "Optical attenuators get more from MEMS." http://fibers.org/articles/news/4/7/6/1.
Jun 2002	**Fibre Systems Europe** Tami Freeman, "Low-driving-voltage VOAs exploit MEMES", pp. 11.
Jul 2001	**WDM Solutions** Sunny Bains, "Fully integrated micromachine laser is tunable," pp. 10.

PROFESSIONAL SERVICE

1. Editor board member, Scientific Reports, 2016 – Now.
2. Editor board member, Journal of Lasers, Optics & Photonics, 2015 – Now.
3. Editor board member, Advances in Water Science and Technology, 2014 – Now.
4. Organizing co-chair, The 19th Annual Conference of the Physical Society of Hong Kong (**PSHK2016**), 3 – 4 June 2016, Hong Kong.
5. Member of Local Organizing Committee, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May –1 June 2016, Hong Kong.
6. **Conference chair,** X. M. Zhang and B. O. Guan (eds.), The 3rd International Conference on Optofluidics (**Optofluidics2013**), 15 – 17 Aug 2013, Hong Kong.
7. **Organizing committee,** The 4th International Conference on Optofluidics (**Optofluidics2014**), 28 – 30 Aug 2014, Guangzhou, China.
8. EXCO member & Honorary Treasurer, Physical Society of Hong Kong, Sep 2012 – Jun 2017.
9. Vice President, Physical Society of Hong Kong, Jun 2017– Now.
10. Steering Committee, the International Conferences on Optofluidics, 2013 – Now.
11. Program Committee, Symposium on Design, Test, Integration & Packaging *(DTIP) of MEMS/MOEMS*, 2013 – Now.

LIST OF PUBLICATIONS

Journal papers (in reverse chronological order)

1. Qingming Chen, Tenghao Li, Zhaohui Li, Jinlin Long and Xuming Zhang*, Optofluidic tunable lenses for in-plane light manipulation, Micromachines, vol. 9, no. 3, paper no. 97, 26 Feb 2018.
2. Tenghao Li, Qingming Chen, Weixing Yu, And Xuming Zhang*, Planar polarization-routing optical cross-connects using nematic liquid crystal waveguides, Optics Express, vol. 26, no. 1, pp. 402–418, 8 Jan 2018.
3. Xiaowen Huang, Jianchun Wang, Tenghao Li, Jianmei Wang, Min Xu, Weixing Yu, Abdel El Abed, and Xuming Zhang*, Review on optofluidic microreactors for artificial photosynthesis, Beilstein Journal of Nanotechnology, vol. 9, pp. 30–41, 04 January 2018.
4. Shenghuang Lin, Yang Liu, Zhixin Hu, Wei Lu, Chun Hin Mak, Longhui Zeng, Jiong Zhao, Yanyong Li, Feng Yan, Yuen Hong Tsang, Xuming Zhang, Shu Ping Lau, Tunable active edge sites in PtSe2 films towards hydrogen evolution reaction, **Nano Energy**, vol. 42, pp. 26-33, December 2017.
5. Xiaoqiang Zhu, Li. Liang, Yunfeng Zuo, Xuming Zhang and Yi Yang*, Tunable visible cloaking using the natural liquid diffusion, **Laser & Photonics Reviews**, vol. 11, no. 6, paper no. 1700066, November 2017.
6. Hai L. Liu, Xiao Q. Zhu, Li Liang, Xuming Zhang, and Yi Yang, Tunable transformation optical waveguide bends in liquid, **Optica**, vol. 4, no. 8, pp. 839-846, 25 July 2017.
7. Xiaowen Huang, Huimin Hao, Yang Liu, Yujiao Zhu and Xuming Zhang*, Rapid screening of graphitic carbon nitrides for photocatalytic cofactor regeneration using a drop reactor, **Micromachines**, vol. 8, no. 6, paper 175, 2 June 2017.
8. Furui Tan, Ning Wang, Dang Yuan Lei, Weixing Yu and Xuming Zhang*, Plasmonic black absorbers for enhanced photocurrent of visible-light photocatalysis, **Advanced Optical Materials**, vol. 5, no. 1, paper 1600399, 19 January 2017. (Back cover)
9. Ning Wang*, Furui Tan, Chi Chung Tsoi and Xuming Zhang*, Photoelectrocatalytic microreactor for seawater decontamination with negligible chlorine generation, **Microsystem Technologies**, vol. 1-6, 21 November 2016.
10. You-Ling Chen, Wei-Liang Jin, Yun-Feng Xiao, and Xuming Zhang*, Charge measurement of a single dielectric nanoparticle with a high-Q optical microresonator, **Physical Review Applied**, vol. 6, paper no. 044021, 28 October 2016.
11. Furui Tan, Tenghao Li, Ning Wang, Sin Ki Lai, Chi Chung Tsoi, Weixing Yu, Xuming Zhang*, Rough gold films as broadband absorbers for plasmonic enhancement of TiO2 photocurrent over 400 – 800 nm, **Scientific Reports**, vol. 6, paper no. 33049, 9 Sep 2016.
12. Ning Wang, Furui Tan, Yu Zhao, Chi Chung Tsoi, Xudong Fan, Weixing Yu & Xuming Zhang*, Optofluidic UV-Vis spectrophotometer for online monitoring of photocatalytic reactions, **Scientific Reports**, vol. 6, paper no. 28928, 29 Jun 2016.

13. Xiaowen Huang, Jian Liu, Qingjing Yang, Yang Liu, Yujiao Zhu, Tenghao Li, Yuen Hong Tsang, and Xuming Zhang, Microfluidic chip-based one-step fabrication of artificial photosystem I for photocatalytic cofactor regeneration, **RSC Advances**, vol. 6, no. 104, pp. 101974 – 101980, 2016.

14. Yong Yuan, Tuan Guo, Xuhui Qiu, Jiahuan Tang, Yunyun Huang, Li Zhuang, Shungui Zhou, Zhaohui Li, Bai-Ou Guan, Xuming Zhang, and Jacques Albert, Electrochemical surface plasmon resonance fiber-optic sensor: in situ detection of electroactive biofilms, **Analytical Chemistry**, vol. 88, no. 15, pp. 7609–7616. 23 May 2016.

15. Qingming Chen, Aoqun Jian, Zhaohui Li*, and Xuming Zhang*, Optofluidic tunable lenses using laser-induced thermal gradient, **Lab on a Chip**, vol. 16, no. 1, pp. 104 – 111, 07 Jan 2016. (***Inside back cover***).

16. Wuxia Liao, Ning Wang, Taisheng Wang, Jia Xu, Xudong Han, Zhenyu Liu, Xuming Zhang*, and Weixing Yu*, Biomimetic microchannels of planar reactors for optimized photocatalytic efficiency of water purification, **Biomicrofluidics**, vol. 10, paper no. 014123, Jan 2016.

17. Xiaowen Huang, Yujiao Zhu, Xuming Zhang*, Zhiyong Bao, Dang Yuan Lei, Weixing Yu, Jiyan Dai, Yu Wang, Clam-inspired nanoparticle immobilization method using adhesive tape as microchip substrate, **Sensors and Actuators B Chemical**, vol. 222, pp. 106 – 111, Jan 2016 (http://dx.doi.org/10.1016/j.snb.2015.08.069).

18. Tenghao Li, Qingming Chen, Yunfeng Xiao and Xuming Zhang*, Variable optical delay line using discrete harmonic oscillation in waveguide lattices, **Journal of Lightwave Technology**, vol. 33, no. 24, pp. 5095 – 5102, 15 Dec 2015.

19. S. Cao, T. S. Wang, J. L. Zhao, F. R. Tan, X. M. Zhang, W. X. Yu*, Hierarchic random nanosphere model for broadband solar energy absorbers, Optical Materials Express, vol. 5, no. 12, 5 November 2015.

20. Y. Bao, X. W. Yi, Z. H. Li*, Q. M. Chen, J. P. Li, X. D. Fan and X. M. Zhang*, A digitally generated ultrafine optical frequency comb for spectral measurements with 0.01-pm resolution and 0.7-μs response time, **Light: Science& Applications**, vol. 4, paper no. e300, 19 June 2015.

21. F. R. Wang, G. Q. Zhang, Z. Zhao, H. Q. Tan, W. X. Yu, X. M. Zhang and Z. C. Sun, TiO_2 nanosheet array thin film for self-cleaning coating, **RSC Advances**, vol. 5, no. 13, pp. 9861 – 9864, 06 Jan 2015.

22. N. Wang, F. R. Tan, L. Wan, M. C. Wu and X. M. Zhang*, Microfluidic reactors for visible-light photocatalytic water purification assisted with thermolysis, **Biomicrofluidics**, vol. 8, no. 5, pp. 054122, 24 October 2014.

23. S. Y. Cao, C. S. Chen*, T. G. Liu, Y. H. Tsang*, X. M. Zhang, W. W. Yu, and W. W. Chen, Synthesis of reduced graphene oxide/α-$Bi_2Mo_3O_{12}$@β-Bi_2O_3 heterojunctions by organic electrolytes assisted UV-excited method, **Chemical Engineering Journal**, vol. 257, pp. 309–316, 2014.

24. S. Y. Cao, W. X. Yu, T. S. Wang, H. H. Shen, X. D. Han, W. B. Xu, and X. M. Zhang, Meta-microwindmill structure with multiple absorption peaks for the detection of ketamine and amphetamine type stimulants in terahertz domain, **Optical Materials Express**, vol. 4, no. 9, pp. 1876 – 1884, 1 September 2014.

25. C. Y. Tang, X. M. Zhang, Y. Chai, L. Hui, L. L. Tao, and Y. H. Tsang*, Controllable parabolic lensed liquid-core optical fiber by using electrostatic force, **Optics Express**, vol. 22, no. 17, pp. 20948 – 20953, 25 August 2014.

26. A. Q. Jian, L. L. Deng, S. B. Sang, Q. Q. Duan, X. M. Zhang, W. D. Zhang, Surface plasmon resonance sensor based on an angled optical fiber, **IEEE Sensors Journal**, vol. 14, no. 9, pp. 3229 – 3235, September 2014.

27. C. Y. Tang, G. X. Bai, K. L. Jim, X. M. Zhang, K. H. Fung, Y. Chai, Y. H. Tsang, J. Q. Yao, and D. G. Xu, Lensed water-core teflon-amorphous fluoroplastics optical fiber, **Journal of Lightwave Technology**, vol. 32, no. 8, pp.1538 – 1542, 15 April 2014.

28. N. Wang, X. M. Zhang*, Y. Wang, W. X. Yu and Helen L. W. Chan, Microfluidic reactors for photocatalytic water purification, **Lab on a Chip**, vol. 14, no. 6, pp. 1074 – 1082, 21 March 2014.

29. S. Y. Cao, W. X. Yu, L. T. Zhang, C. Wang, X. M. Zhang, and Y. Q. Fu, Broadband efficient light absorbing in the visible regime by a metananoring array, **Annalen der Physik**, vol. 526, no. 1–2, pp. 112–117, January 2014.

30. A. Q. Jian, and X. M. Zhang, Resonant optical tunneling effect: Recent progress in modeling and applications, **IEEE Journal of Selected Topics in Quantum Electronics**, vol. 19, no. 3, paper no. 9000310, May/June 2013 (invited review).

31. G. X. Bai, Y. H. Tsang, K. L. Jim, and X. M. Zhang, UV-curable liquid-core fiber lenses with controllable focal length, **Optics Express**, vol. 21, no. 5, pp. 5505–5510, 27 Feb 2013.

32. X. M. Zhang, Y. L. Chen, R-S Liu and D. P. Tsai, Plasmonic Photocatalysis, **Reports on Progress in Physics**, vol. 76, paper no. 046401, 2013 (invited review, 41 pages).

33. Z. F. Chen, Z. H. Yong, C. W. Leung, X. M. Zhang, Y. H. Chen, H. L. W. Chan, Y. Wang, Time-variant 1D photonic crystals using flowing microdroplets, **Optics Express**, vol. 20, no. 22, paper no. 24330, 22 Oct 2012.

34. C. Pang, M. Yu, X. M. Zhang, A.K. Gupta, and K.M. Bryden, Multifunctional optical MEMS sensor platform with heterogeneous fiber optic Fabry–Pérot sensors for wireless sensor networks, **Sensors and Actuators A: Physical**, vol. 188, pp. 471–480, December 2012.

35. N. Wang, M. Feng, Z. Q. Feng, M. Y. Lam, L. Gao, B. Chen, A. Q. Liu, Y. H. Tsang and X. M. Zhang, Narrow-linewidth tunable lasers with retro-reflective external cavity, **IEEE Photonics Technology Letters**, vol. 24, no. 18, pp. 1591 – 1593, 15 September 2012.

36. N. Wang, X. M. Zhang, B. L. Chen, W. Z. Song, N. Y. Chan, and Helen L. W. Chan, Microfluidic photoelectrocatalytic reactors for water purification with integrated visible-light source, **Lab on a Chip**, vol. 12, no. 20, pp. 3983–3990, 2012.

37. A. Q. Jian, K. Zhang, Y. Wang, S. P. Lau, Y. H. Tsang, X. M. Zhang, Microfluidic flow direction control using continuous-wave laser, **Sensors and Actuators A: Physical**, vol. 188, no. 1, pp. 329–334, 2012.

38. Y. Yang, A.Q. Liu, L.K. Chin, X.M. Zhang, D.P. Tsai, C.L. Lin, C. Lu, G.P. Wang & N.I. Zheludev, Optofluidic waveguide as a transformation optics device for lightwave bending and manipulation, **Nature Communications**, vol. 3, paper no. 651, 31 January 2012.

39. Y. H. Fu, A. Q. Liu, W. M. Zhu, X. M. Zhang, D. P. Tsai, J. B. Zhang, T. Mei, J. F. Tao, H. C. Guo, X. H. Zhang, J. H. Teng, N. I. Zheludev, G. Q. Lo, and D. L. Kwong, A micromachined reconfigurable metamaterial via reconfiguration of asymmetric split-ring resonators, **Advanced Functional Materials**, vol. 21, no. 18, pp. 3589–3594, 2011.

40. A. Q. Jian, X. M. Zhang, W. M. Zhu, and A. Q. Liu, Liquid refractive index sensors using resonant optical tunneling effect for ultra-high sensitivity, **Sensors and Actuators A Physical**, vol. 169, no. 2, pp. 347-351, 2011.

41. N. Wang, L. Lei, X. M. Zhang, Y. H. Tsang, Y. Chen, and Helen L.W. Chan, A comparative study of preparation methods of nanoporous TiO_2 films for microfluidic photocatalysis, **Microelectronic Engineering**, vol. 88, no. 6, pp. 2797–2799, 2011.

42. W. M. Zhu, A. Q. Liu, X. M. Zhang, D. P. Tsai, T. Bourouina, J. H. Teng, X. H. Zhang, H. C. Guo, H. Tanoto, T. Mei, G. Q. Lo, and D. L. Kwong, Switchable magnetic metamaterials using micromachining processes, **Advanced Materials**, vol. 23, no. 15, pp. 1792–1796, 19 April 2011.
43. S. T. F. Lee, K. H. Lam, X. M. Zhang and H. L. W. Chan, High-frequency ultrasonic transducer based on lead-free BSZT piezoceramics, **Ultrasonics**, vol. 51, no. 7, pp. 811-814, Oct 2011.
44. S.T.F. Lee, Kwok Ho Lam, Lei Lei, X.M. Zhang, and H.L.W. Chan, An integrated microfluidic chip with 40 MHz lead-free transducer for fluid analysis, **Review of Scientific Instruments**, vol. 82, no. 2, paper no. 024903, 25 Feb 2011.
45. 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 on a Chip**, vol. 11, no. 7, pp. 1389-1395, 17 Feb 2011.
46. A. Q. Jian, X. M. Zhang, W. M. Zhu, and A. Q. Liu, Liquid refractive index sensors using resonant optical tunneling effect for ultra-high sensitivity, **Sensors and Actuators A Physical** (in press).
47. 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, **Biomicrofluidics**, vol. 4, no. 4, paper no. 043004, 2010.
48. A. Q. Jian, X. M. Zhang, W. M. Zhu, and M. Yu, Optofluidic refractometer using resonant optical tunneling effect, **Biomicrofluidics**, vol. 4, no. 4, paper no. 043008, 2010.
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51. Y. F. Yu, Y. H. Fu, X. M. Zhang, A. Q. Liu, T. Bourouina, T. Mei, Z. X. Shen, and D. P. Tsai, Pure angular momentum generator using a ring resonator, **Optics Express** , vol. 18, no. 21, pp. 21651-21662, 11 October 2010.
52. H. Cai, X. M. Zhang, A. Q. Liu, B. Liu, M. B. Yu, G. Q. Lo and D. L. Kwong, Discretely tunable micromachined injection-locked lasers, **Journal of Micromechanics and Microengineering**, vol. 20, no. 8, paper no. 085018, 2010.
53. J. Q. Yu, Y. Yang, A. Q. Liu, L. K. Chin and X. M. Zhang, Microfluidic droplet grating for reconfigurable optical diffraction, **Optics Letters**, vol. 35, no. 11, pp. 1890-1892, 2010.
54. H. Bae, X. M. Zhang, H. Liu and M. Yu, Miniature surface-mountable Fabry-Pérot pressure sensor constructed with a 45-degree angled fiber, **Optics Letters**, vol. 35, no. 10, pp. 1701-1703, 2010.
55. X. M. Zhang, Y. X. Liu, H. Bai, C. Pang and M. Yu, Phase modulation with micromachined resonant mirrors for low-coherence fiber-tip pressure sensors, **Optics Express**, vol. 17, no. 26, pp. 23965–23974, 2009.
56. E. H. Khoo, A. Q. Liu, X. M. Zhang, E. P. Li, J. Li, D. Pinjala and B. S. Luk'yanchuk, Exact step-coupling theory for mode-coupling behavior in geometrical variation photonic crystal waveguides, **Physical Review B**, vol. 80, no. 3, paper no. 035101, 2009.
57. H. J. Liu, M. Yu, and X. M. Zhang, Biomimetic optical directional microphone with structurally coupled diaphragms, **Applied Physics Letters**, vol. 93, no. 24, paper no. 243902, 2008.

58. S. Nesson, M. Yu, X. M. Zhang, and A. H. Hsieh, Miniature fiber-optic pressure sensor with composite polymer-metal diaphragm for intradiscal pressure measurements, **Journal of Biomedical Optics**, vol. 13, no. 4, paper no. 044040, 2008.

59. W. M. Zhu, X. M. Zhang, A. Q. Liu, H. Cai, T. Jonathan, and T. Bourouina, A micromachined optical double well for thermo-optic switching via resonant tunneling effect, **Applied Physics Letters**, vol. 92, no. 25, paper no. 251101, 2008.

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64. W. M. Zhu, X. M. Zhang, T. Zhong, A. Q. Liu and M. Yu, Micromachined optical well structure for thermo-optic switching, **Applied Physics Letters**, vol. 91, no. 26, paper no. 261106, 24 December 2007 (cover page).

65. L. K. Chin, and A. Q. Liu, C. S. Lim, X. M. Zhang, J. H. Ng, J. Z. Hao, and S. Takahashi, Differential single living cell refractometry using grating resonant cavity with optical trap, **Applied Physics Letters**, vol. 91, no. 24, paper no. 243901, 12 December 2007.

66. X. M. Zhang, A. Q. Liu, H. Cai, A. B. Yu and C. Lu, Retro-axial VOA using parabolic mirror pair, **IEEE Photonics Technology Letters**, vol. 19, no. 9, pp. 692-694, 1 May 2007.

67. X. M. Zhang and A. Q. Liu, A real pivot structure for MEMS tunable lasers, **IEEE Journal of Microelectromechanical Systems**, vol. 16, no. 2, pp. 269-278, April 2007.

68. T. Zhong, X. M. Zhang, A. Q. Liu, J. Li, C. Lu, And D. Y. Tang, Thermal-optic switch by total-internal reflection of micromachined silicon prism, **IEEE Journal of Selected Topics in Quantum Electronics**, vol. 13, no. 2, pp. 348-358, March-April 2007.

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Invited Talks (Selected)

1. Xuming Zhang, Optofluidics for artificial photosynthesis, The 7th International Multidisciplinary Conference on Optofluidics (**IMCO2017**), 25 – 28 July 2017, Singapore, paper sciforum-011785 (invited talk).
2. Furui Tan, Ning Wang, Yang Liu and Xuming Zhang, Plasmonic black absorbers for photocurrent enhancement under visible light, The 38th Progress in Electromagnetics Research Symposium (**PIERS2017**), 22 – 25 May 2017, St Petersburg, Russia, 2A1.2.
3. Xuming Zhang, Yujiao Zhu, Yang Liu, Huan Lin and Xiaowen Huang, Optofluidics for artificial photosynthesis of glucose using sunlight, The 38th Progress in Electromagnetics Research Symposium (**PIERS2017**), 22 – 25 May 2017, St Petersburg, Russia, 2P5.7.
4. Xuming Zhang, Optofluidic photocatalysis driving up the conversion of solar energy into chemical energy, The 6th International Multidisciplinary Conference on Optofluidics (**Optofluidics2016**), 24 – 27 July 2016, Beijing, China.
5. X. M. Zhang, Microfluidics for artificial photosynthesis of glucose using sunlight, The 5th International Conference on Optofluidics (**Optofluidics2015**), 26 – 29 July 2015, Taipei, Taiwan.
6. X. M. Zhang, Microfluidics for photocatalysis: Planar microreactors for water purification using sunlight, International Conference on Energy, Materials and Photonics 2015 (**EMP15**), 4 – 6 July 2015, paper no. P35, Shenzhen, China.
7. X. M. Zhang, Photosynthesis of carbohydrate using microfluidic platform, The 18th Annual Conference of The Physical Society of Hong Kong (**PSHK**), 13 June 2015, Hong Kong, paper B09.
8. X. M. Zhang, Microfluidics for photocatalytic water purification: now and beyond, Lab-on-a-Chip Asia – Microfluidics and Point Of Care Diagnostics (**Lab-on-a-Chip Asia 2014**), 20 – 21 November 2014, Singapore.
9. X. M. Zhang, Optofluidics for Water Purification: Origin, Status & Perspectives, The 4th International Conference on Optofluidics (**Optofluidics 2014**), 28 – 30 August 2014, Guangzhou, China, paper I34.

10. X. M. Zhang, Optofluidics: New Paradigm for Micro/Nano Optics & Photonics, Workshop on Microfluidics@HK (Anderson Shum), 3 June 2014, the University of Hong Kong, Hong Kong.
11. X. M. Zhang, Microfluidic reactors for photocatalytic water purification, International Conference on Optoelectronic Technology and Applications (**IPTA2014**), 13 – 15 May 2014, Beijing, China.
12. X. M. Zhang, Optofluidics: New Paradigm for Micro/Nano Optics & Photonics, NSFC Micro/Nanophotonics Discipline Development Strategy Seminar (國家自然科學基金委員會"微納光子學"學科發展戰略研討會), 23 – 26 October 2013, Suzhou, China.
13. X. M. Zhang, Resonant optical tunneling effect and its applications, The 9th Asia-Pacific Conference on Near-field Optics (**APNFO2013**), 3 – 6 July 2013, Singapore.
14. X. M. Zhang, Optofluidic microreactors for photocatalytic water purification, The International Conference on Optofluidics (**Optofluidics 2012**), 13 – 15 Sept 2012, Suzhou, China, paper no. FA3.
15. A. Q. Jian, M. Yu and X. M. Zhang, Resonant optical tunneling effect for sensing applications, The 6th International Conference on Nanophotonics (**ICNP 2012**), 27 – 30 May 2012, Beijing, China, pp. 27.
16. X. M. Zhang, Microfluidics for solar-powered photocatalysis, International Conference on Materials for Advanced Technologies (**ICMAT 2011**), 26 June – 1 July 2011, Singapore.

Conferences (selected)

1. Pui Hong Yeung, Chi Chung Tsoi, Ning Wang and Xuming Zhang*, Photocatalytic water purification by using nanomaterial and solar reactor, The 7th International Multidisciplinary Conference on Optofluidics (**IMCO2017**), 25 – 28 July 2017, Singapore, paper sciforum-011422.
2. Chi Chung Tsoi, Pui Hong Yeung and Xuming Zhang*, Solar reactor for photocatalytic water purification, The 7th International Multidisciplinary Conference on Optofluidics (**IMCO2017**), 25 – 28 July 2017, Singapore, paper sciforum-012821. (**Best Poster Award**)
3. Tenghao Li and Xuming Zhang, Optical buffer in waveguide lattices using discrete harmonic oscillation effect, The 38th Progress in Electromagnetics Research Symposium (**PIERS2017**), 22 – 25 May 2017, St Petersburg, Russia, 2A1.2 (invited talk).
4. Furui Tan, Ning Wang, Yang Liu and Xuming Zhang, Rough gold films as plasmonic black absorbers for visible photocatalysis, The International Symposium on Plasmonics and Nano-photonics (**iSPN2017**), 28-30 April 2017, Dalian, China, paper Oral-77.
5. Xuming Zhang, Yujiao Zhu and Xiaowen Huang, Microfluidic reactors for artificial photosynthesis of glucose, International Conference on Artificial Photosynthesis (**ICARP2017**), 2-5 March 2017, Kyoto, Japan, paper P05-01.
6. Tenghao Li, Qingming Chen and Xuming Zhang*, Tunable Optical Delay Line Using Quadratic-Coupled Waveguide Lattices, International Conference on Optical MEMS and Nanophotonics (**OMN2016**), 31 Jul – 04 Aug 2016, Singapore, paper Po2.3.

7. Yujiao Zhu*, Xiaowen Huang, and Xuming Zhang, Microfluidic reactors with immobilized enzymes for glucose generation, The 6th International Multidisciplinary Conference on Optofluidics (**Optofluidics2016**), 24 – 27 July 2016, Beijing, China.
8. Tenghao Li, Qingming Chen and Xuming Zhang*, Variable Optical Delay Line using Discrete Harmonic Oscillation in Waveguide Lattices, Conference on Lasers and Electro-Optics (**CLEO2016**), 7 – 9 Jun 2016, San Jose, CA, USA.
9. Qingming Chen and Xuming Zhang*, Optofluidic tunable lens using laser-induced thermal gradient, Conference on Lasers and Electro-Optics (**CLEO2016**), 7 – 9 Jun 2016, San Jose, CA, USA.
10. Yujiao Zhu, Xiaowen Huang, and Xuming Zhang*, Artificial photosynthesis on a chip: Enzymatic synthesis of glucose precursor with rubisco immobilized, The 19th Annual Conference of the Physical Society of Hong Kong (**PSHK2016**), 3 – 4 June 2016, Hong Kong.
11. Chi Chung Tsoi and Xuming Zhang*, Photocatalytic Ozonation for Sea Water Treatment, The 19th Annual Conference of the Physical Society of Hong Kong (**PSHK2016**), 3–4 June 2016, Hong Kong.
12. Ning Wang, Furui Tan, Chi Chung Tsoi and Xuming Zhang, Microfluidic reactors for photocatalytic conversion of solar energy into chemical energy, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May – 1 June 2016, Hong Kong.
13. Tenghao Li and Xuming Zhang, Waveguide lattices based optical buffer using discrete harmonic oscillation effect, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May –1 June 2016, Hong Kong.
14. Qingming Chen and Xuming Zhang, Optofluidic tunable lens using laser-induced thermal gradient, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May –1 June 2016, Hong Kong.
15. Yujiao Zhu, Xiaowen Huang, and Xuming Zhang, Artificial photosynthesis for carbohydrates generation with immobilized enzyme on gold nanoparticles patterned microfluidic reactors, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May –1 June 2016, Hong Kong. ***(Cheminas Best Poster Awards)***
16. Ning Wang, Furui Tan, Chi Chung Tsoiab and Xuming Zhang, Integrated optofluidic device with on-chip UV-Vis spectrophotometer for online monitoring of photocatalytic reactions, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May –1 June 2016, Hong Kong.
17. Xiaowen Huang, Qingjing Yang, Yang Liu, Yujiao Zhu, Tenghao Li and Xuming Zhang, One-pot fabrication of artificial photosystem I in the microfluidic device, The 8th International Symposium on Microchemistry and Microsystems (**ISMM2016**), 30 May – 1 June 2016, Hong Kong.
18. Furui Tan, Ning Wang, Xuming Zhang*, Plasmonic black absorbers for solar photocurrent enhancement, Young Giants of Nanoscience 2016, May 29 – 2 June 2016, Hong Kong, paper P-020.

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35. F. R. Tan, N. Wang, X. M. Zhang, Bubble microreactors for photocatalytic water treatment, The 3rd International Conference on Optofluidics (**Optofluidics2013**), 15 – 17 Aug 2013, Hong Kong, paper P22, pp. 113 – 114.

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