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H-index: 20 <http://www.researcherid.com/rid/A-9768-2012>

Education:

1994-1998 Shanxi University, Department of Electronic Engineering, Shanxi, China
1998-2003 Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Shanghai, China

Degree:

BE 1998 Opto-electronic Engineering, Shanxi University
Ph. D. 2003 Optical Engineering, Chinese Academy of Sciences

Experience:

2003. 8 – 2004.12 Research Associate, Department of Electrical and Electronic Engineering, Hong Kong University of Science and Technology, Kowloon, Hong Kong
2005. 2 – 2006.11 Research Associate, Bindley Bioscience Center, Purdue University, West Lafayette, IN.
2006. 12 – 2007.12 Research Associate, Department of Chemistry, Michigan State University, East Lansing, MI.
2008. 1 – 2009.11 Associate Professor
School of Life Sciences and Biotechnology
Shanghai Jiao-Tong University, Shanghai, China
2009. 12 – now Associate Professor
Department of Biomedical Engineering, College of Engineering
Peking University, Beijing, China

Membership

Optical Society of America (OSA) Senior Member
CLEO Program Committee Member (since 2015)

Services:

I am on the editorial board of several international peer-reviewed journals:

- Scientific Reports (SCI IF=5.5);
- Micron (SCI IF=2);
- Chinese Optics Letters (SCI IF=1.9);
- Microscopy Research and Techniques (SCI IF=1.2);

I am also on the

- Scientific Member board of Focus On Microscopy organization;
- Committee board for the annual Microscopy Innovation Awards, organized by Microscopy Today

I have been serving as a reviewer for the following journals: Nat. Comm., Opt. Lett., Opt. Expr., BOE, JOSAA, Appl. Opt., Sci. Rep., JBO, J. Phys. Chem., Phys Chem Chem Phys, Anal. Chem., etc.

Current Funded Research Projects:

2015. 1 – 2018.12 Principal Investigator, National Science Foundation of China (No. 61475010)
Title: Label-free quantitative confocal phase microscopy
(RMB 800,000)
2013. 10 – 2017.10 Co-Principal Investigator, National Instrumentation Program (No. 2013YQ030651)
Title: Multi-dimensional high resolution biological tissue expression and analysis
instrument
(RMB 7,560,000)
2015. 1 – 2016.12 Joint Principal Investigator, National Science Foundation of China (No. 61428501)
Title: Super-resolution optical microscopy based on upconversion nanoparticle
(RMB 200,000)

Past Research Projects:

2012. 1 – 2015.12 Principal Investigator, National Science Foundation of China (No. 61176078)
Title: Quantum Dots with Giant Stokes Shifts for Super-Resolution Optical Imaging
2010. 1 – 2014.12 National “973”Project (No. 2010CB933901)
Title: Cellular spatiotemporal domain dynamic visualization
2010. 1 – 2014.12 National “973”Project (No. 2010CB933901)
Title: Application of nanotechnology on the gastric cancer early diagnosis and
prevention
2011. 6 – 2012. 6 Coulter Foundation GT-Emory-PKU BME Seed Grant
Title: Sub-diffraction limited imaging of single RNA sensitive probes using STED
microscopy
2009. 1 – 2011.12 Principal Investigator, National Science Foundation of China (No. 60808029)
Title: Confocal Reflectance / Fluorescence Real-time three-dimensional imaging
system for dermatological diagnosis
2010. 6 – 2011. 6 Coulter Foundation GT-Emory-PKU BME Seed Grant
Title: Super-resolution Imaging of Cellular Dynamics with Quantum Dots and STED
2010. 9– 2011. 9 Peking University Medical-Engineering Joint Research Program
Title: The visualization study on the function of NAD(P)H on peroxide generation
system
2008. 9– 2009. 9 Shanghai Pujiang Talent Program (08PJ14062), PI
Title: Dermatological multiphoton imaging system

SCI-Indexed Journal Publications:

[2017]

52. Y. Liu, Y. Lu*, X. Yang, X. Zheng, S. Wen, F. Wang, X. Vidal, T. Zhao, D. Liu, Z. Zhou, C. Ma, J. Zhou, J. Piper, **P. Xi***, and D. Jin*, "Amplified stimulated emission in upconversion nanoparticles for super resolution nanoscopy," *Nature* (2017) doi: 10.1038/nature21366.

51. X. Chen, R. Li, Z. Liu, K. Sun, Z. Sun, D. Chen, G. Xu, **P. Xi**, C. Wu, Y. Sun. "Small Photoblinking Semiconductor Polymer Dots for Fluorescence Nanoscopy", **Advanced Materials** (2017).

[2016]

50. K. Zhanghao, L. Chen, X. Yang, M. Wang, Z. Jing, H. Han, M. Q. Zhang, D. Jin*, J. Gao*, **P. Xi***, "Super-resolution with dipole orientation mapping", **Light: Science and Applications** 5, e16166 (2016). [2016 Impact factor: 13.6]

49. Z. Zeng, **P. Xi***, "Advances in three-dimensional super-resolution nanoscopy", **Microscopy Research and Technique**, 79(10):893-898 (2016).

48. X. Yang, K. Zhanghao, H. Wang, Y. Liu, F. Wang, X. Zhang, K. Shi, J. Gao, D. Jin, **P. Xi***, "Versatile application of fluorescent quantum dot labels in super-resolution fluorescence microscopy", **ACS Photonics**, 3(9), 1611–1618 (2016). [2016 Impact factor: 5.404]

47. X. Chen, Z. Zeng, R. Li, B. Xue, **P. Xi***, Y. Sun, Superior performance with sCMOS over EMCCD in super-resolution optical fluctuation imaging. **Journal of Biomedical Optics**, 21(6), 066007 (2016).

46. J. Gao, X. Yang, M. N. Djekidel, Y. Wang, **P. Xi**, M. Q. Zhang, "Developing bioimaging and quantitative methods to study 3D genome." **Quantitative Biology** 4(2) 129-147 (2016).

45. X. Chen, W. Zong, R. Li, Z. Zeng, J. Zhao, **P. Xi**, L. Chen, Y. Sun, "Two-photon light-sheet nanoscopy by fluorescence fluctuation correlation analysis", **Nanoscale** 8, 9982-9987 (2016). [2015 Impact factor:7.394]

44. X. Yang, H. Xie, E. Alonas, Y. Liu, X. Chen, Q. Ren, P. J. Santangelo, **P. Xi***, and D. Jin, "Mirror enhanced axial narrowing super-resolution microscopy", **Light: Science and Applications** 5, e16134 (2016). [2016 Impact factor: 13.6]

43. A. Lal, C. Shan, **P. Xi**, "Structured illumination microscopy image reconstruction algorithm", **IEEE Journal of Selected Topics in Quantum Electronics**, 22(4), 6803414 (2016) [2015 Impact factor: 2.828]

42. X. Chen, M. Wei, M. M. Zheng, J. Zhao, H. Hao, L. Chang, **P. Xi**, Y. Sun, "Study of RNA Polymerase II Clustering inside Live-Cell Nuclei Using Bayesian Nanoscopy", **ACS Nano** 10 (2), pp 2447–2454 (2016) [2015 Impact factor: 12.881]

[2015]

41. W. Yu, Z. Ji, D. Dong, X. Yang, Y. Xiao, Q. Gong **P. Xi***, K. Shi*, "Super-resolution deep imaging with hollow Bessel beam STED microscopy", *Laser Photonics Reviews* (2015) doi: 10.1002/lpor.201500151 [2014 Impact factor: 8.008].

40. X. Zhang, X. Chen, Z. Zeng, M. Zhang, Y. Sun, **P. Xi***, J. Peng*, and P. Xu*, "Development of a reversibly switchable protein for super-resolution optical fluctuation imaging", **ACS Nano**, 9(3) 2659-2667 (2015). [2014 Impact factor: 12.033]

39. X. Chen, Z. Zeng, H. Wang, and **P. Xi***, "Three dimensional multimodal sub-diffraction imaging with spinning-disk confocal microscopy using blinking/fluctuation probes," **Nano Research**, doi: 10.1007/s12274-015-0736-8 (2015). [2014 Impact factor 7.08]

38. Z. Zeng, X. Chen, H. Wang, N. Huang, C. Shan, H. Zhang, J. Teng, **P. Xi***, "Fast Super-Resolution Imaging with Ultra-High Labeling Density Achieved by Joint Tagging Super-Resolution Optical Fluctuation Imaging," **Scientific Reports** 5, 8359 (2015). [2014 Impact factor 5.408]

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37. H. Wang, H. Sun, H. Wei, **P. Xi**, S. Nie, Q. Ren, "Biocompatible hyaluronic acid polymer-coated quantum dots for CD44+ cancer cell-targeted imaging", **Journal of Nanoparticle Research**, 2014, 16(10): 1-13. [2014 Impact factor 2.278]
36. P. Lv, Y. Xue, H. Liu, Y. Shi, **P. Xi**, H. Lin, H. Duan, "Symmetric and Asymmetric Meniscus Collapse in Wetting Transition", **Langmuir**, (2014). DOI: 10.1021/la503465q. [2014 Impact factor 4.384]
35. X. Chen and **P. Xi***, "Hundred-thousand light holes push nanoscopy to go parallel," *Microscopy Research and Technique*, 78(1), 8-10, 2014.
34. C. Dai, S. Fan, X. Chai, Y. Li, Q. Ren, **P. Xi***, and C. Zhou*, Dual channel SD-OCT system based on 3×3 fiber coupler for extended imaging range, **Applied Optics** 53(24) 5375-5379, (2014).
33. N. Liu, C. Dai, Y. Tang, **P. Xi***, "Virtual-OCT: A simulated optical coherence tomography instrument", **Journal of Innovative Optical Health Sciences**, 8(1) 1450030, (2014).
32. X. Yang, Y.-K. Tzeng, Z. Zhu, Z. Huang, X. Chen, Y. Liu, H.-C. Chang, L. Huang, W.-D. Li, and P. Xi*, "Sub-diffraction imaging of nitrogen-vacancy centers in diamond by stimulated emission depletion and structured illumination," **RSC Advances** 4, 11305–11310, (2014). [SCI IF 3.708]
31. H. Xie, D. Jin, J. Yu, T. Peng, Y. Ding, C. Zhou, **P. Xi***, "Schlieren confocal microscopy for phase-relief imaging", **Opt. Lett.**, 39(5), 1238-1241, (2014).
30. Y. Lu, J. Zhao, R. Zhang, Y. Liu, D. Liu, E. M. Goldys, X. Yang, **P. Xi**, A. Sunna, J. Lu, Y. Shi, R. C. Leif, Y. Huo, J. Shen, J. A. Piper, J. P. Robinson, and D. Jin, "Tunable lifetime multiplexing using luminescent nanocrystals," **Nature Photonics** 8, 32-36 (2014). (SCI IF = 27.254)

[2013]

29. J. Zhao, D. Jin, E. P. Schartner, Y. Lu, Y. Liu, A. V. Zvyagin, L. Zhang, J. M. Dawes, **P. Xi**, J. A. Piper, E. M. Goldys, and T. M. Monroe, "Single nanocrystal sensitivity achieved by enhanced upconversion" **Nature Nanotechnology** 8(10), 729-734 (2013) doi:10.1038/nnano.2013.171. (SCI IF=31.170)
28. H. Xie, Y. Liu, P. J. Santangelo, D. Jin, and **P. Xi***, "Analytical description of high-aperture STED resolution with 0-2π vortex phase modulation," **JOSA A** 30, 1640-1645 (2013).
27. Y. Ding, Y. Zhang, T. Peng, Y. Lu, D. Jin, Y. Liu, J. Han*, **P. Xi***, "Observation of mesenteric microcirculatory disturbance in rat by laser oblique scanning optical microscopy", **Scientific Reports** 3:1762, 2013 (DOI: 10.1038/srep01762)

[2012]

26. Y. Lu, **P. Xi**, J. A. Piper, Y., and D. Jin, "Time-Gated Orthogonal Scanning Automated Microscopy (OSAM) for High-speed Cell Detection and Analysis", **Scientific Reports** 2: 837 (2012) doi:10.1038/srep00837.
25. Y. Liu, Y. Ding, E. Alonas, W. Zhao, P. J. Santangelo, D. Jin, J. A. Piper, J. Teng, Q. Ren, **P. Xi***, "Achieving λ/10 Resolution CW STED Nanoscopy with a Ti:Sapphire Oscillator", **PLoS ONE** 7(6) e40003, 2012 (DOI: 10.1371/journal.pone.0040003). [Impact Factor 4.41]
24. Y. Ding, H. Xie, T. Peng, Y. Lu, D. Jin, J. Teng, Q. Ren, **P. Xi***, "Laser Oblique Scanning Optical Microscopy (LOSOM) for Phase Relief Imaging" **Optics Express**, 20 (13), 14100-14108 (2012). [Impact Factor 3.75]
23. T. Peng, H. Xie, Y. Ding, W. Wang, Z. Li, D. Jin, Y. Tang, Q. Ren, **P. Xi***, "CRAFT: multimodality confocal skin imaging for early cancer diagnosis.", **Journal of Biophotonics** 5(5-6), 469-476 (2012) (SCI IF=4.24).

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22. H. Wang, X. Xu, X. Li, **P. Xi***, Q. Ren, “Systematic design of a cross-polarized dermoscope for visual inspection and digital imaging”, **IEEE Instrumentation and Measurement Magazine**, 14(6)26-31 (2011).

21. Y. Ding, **P. Xi***, Q. Ren, “Hacking the optical diffraction limit: Review on recent developments of fluorescence nanoscopy”, **Chinese Science Bulletin**, 56(18) 1857-1876 (2011).

20. **P. Xi**, K. Mei, T. Braeuler, C. Zhou, Q. Ren, “Evaluation of Spectrometric Parameters in Spectral-Domain Optical Coherence Tomography”, **Applied Optics** 50(3), 366-372 (2011).

[2010]

19. W. Wang, Y. Liu, **P. Xi***, Q. Ren, “Origin and effect of high-order dispersion in ultrashort pulse multiphoton microscopy in 10 femtosecond regime”, **Applied Optics** 49(35), 6703-6709 (2010). Cover paper.

18. S. Chen, X. Feng, Y. Li, C. Zhou, **P. Xi***, Q. Ren, “Software controlling algorithms for the system performance optimization of confocal laser scanning microscope”, **Biomedical Signal Processing and Control**, 5(3) 223-228 (2010).

17. Z. Li, P. Huang, X. Zhang, J. Lin, S. Yang, B. Liu, F. Gao, P. Xi, Q. Ren and D. Cui, “RGD-Conjugated Dendrimer-Modified Gold Nanorods for in Vivo Tumor Targeting and Photothermal Therapy”, **Molecular Pharmaceutics**, 7(1) 94-104 (2010). [SCI IF=5.408, Cited: 16].

16. Z. Li, P. Huang, X. Zhang, J. Lin, R. He, B. Liu, X. Zhang, S. Yang, P. Xi, X. Zhang, Q. Ren and D. Cui, “Arginine-Glycine-Aspartic Acid-Conjugated Dendrimer-Modified QuantumDots for Targeting and Imaging Melanoma”, **Journal of Nanoscience and Nanotechnology**, 10(8), 4859-4867 (2010)

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15. Y. Shang, Z. Wang, Y. Pang, **P. Xi***, Q. Ren*, “The role of mast cells in non-ablative laser resurfacing with 1,320 nm neodymium:yttrium–aluminium–garnet laser”, **Lasers in Medical Science** 25(3) 371-377 (2009).

14. M. Jiang, C. Zhou, W. Wang, **P. Xi**, Q. Ren, “Comparative analysis of Zernike aberrations generation with deformable mirrors for ocular adaptive optics”, **J. Modern Optics**, 56(16) 1741-1746 (2009).

13. **P. Xi**, Y. Andegeko, D. Pestov, V. V. Lozovoy, M. Dantus, “Two-photon imaging using adaptive phase compensated ultrashort laser pulses”, **Journal of Biomedical Optics** 14(1) 014002, (2009) [SCI IF=3.08, Cited: 16].

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12. **P. Xi**, Y. Andegeko, L. R. Weisel, V. V. Lozovoy, M. Dantus, “Greater signal, increased depth, and less photobleaching in two-photon microscopy with 10 femtosecond pulses”, **Optics Communications** 281(4), 1841-1849 (2008). [SCI IF=1.314, Cited: 31]

11. **P. Xi**, B. Rajwa, J. Jones, J. P. Robinson, “[The design and construction of a cost-efficient confocal microscope](#)”, **American J. Physics**, 75(3), 203-207 (2007). [SCI IF=0.889, Cited: 1]

10. Y. Wu, **P. Xi**, J. Qu, et al., “Depth-resolved fluorescence spectroscopy of normal and dysplastic cervical tissue,” **Optics Express**, 13 (2), 382-388 (2005) [SCI IF=3.709, Cited: 22]

9. Y. Wu, **P. Xi**, J. Y. Qu, T. Cheung, and M. Yu, “Depth-resolved fluorescence spectroscopy reveals layered structure of tissue,” **Opt. Express** 12(14), 3218-3223, 2004. [SCI IF=3.709, Cited: 23]

8. E. Dai, **P. Xi**, C. Zhou, L. Liu, “Multifunctional double-layered diffractive optical element”, **Opt. Lett.**, 28(17), 1513-1515, 2003. [SCI IF=3.711, Cited: 16]

7. **P. Xi**, C. Zhou, E. Dai, L. Liu, “Generation of near field hexagonal array illumination”, **Opt. Lett.**, 27(4), 228-230, 2002. [SCI IF=3.711, Cited: 29]

6. **P. Xi**, C. Zhou, E. Dai, L. Liu, “A novel method for ultrashort laser pulse-width measurement based on self-diffractive effect”, **Opt. Express**, 10(20), 1099-1104, 2002. [SCI IF=3.709, Cited: 12]

5. P. Xi, C. Zhou, S. Zhao, L. Liu, "Phase contrast hexagonal array illumination", **Opt. Comm.**, 192(3~6) 193-197, 2001. [SCI IF=1.314, Cited: 3]
4. C. Zhou, P. Xi, S. Zhao, L. Liu, "Simple equations for pi-phase-modulated Talbot illuminator", **Microwave & Optical Technology Letters**, 29(1), 49-52, (2001). [SCI IF=0.631]
3. S. Zhao, C. Zhou, P. Xi, H. Wang, L. Liu "Number of phase levels in a two-dimensional separable Talbot array illuminator", **J. Opt. Soc. Am. A**, 2001, 18(1): 103~107 [SCI IF=1.776, Cited: 2]
2. C. Zhou, H. Wang, S. Zhao, P. Xi, L. Liu, "Number of Phase Levels of a Talbot Array Illuminator", **Appl. Opt.**, 40(5), 607-613, 2001. [SCI IF=1.701, Cited: 14]
1. H. Wang, C. Zhou, S. Zhao, P. Xi, and L. Liu, "The temporal Fresnel diffractive field of a grating illuminated by an ultrashort pulsed-laser beam", **J. Opt. A: Pure Appl. Opt.** 3, 159-163 (2001). [SCI IF=1.752, Cited: 9]

Book and book chapter:

Peng Xi, Yujia Liu and Qiushi Ren (2011). Scanning and Image Reconstruction Techniques in Confocal Laser Scanning Microscopy, Laser Scanning, Theory and Applications, Chau-Chang Wang (Ed.), ISBN: 978-953-307-205-0, InTech, Available from:

<http://www.intechopen.com/articles/show/title/scanning-and-image-reconstruction-techniques-in-confocal-laser-scanning-microscopy>

Peng Xi (ed), **Optical devices in communication and computation**, ISBN 978-953-51-0763-7, InTech, 2012
<http://www.intechopen.com/books/optical-devices-in-communication-and-computation>

Peng Xi (ed), **Optical Nanoscopy and Novel Microscopy Techniques**, CRC Press, ISBN 9781466586291, 2014.

<https://www.crcpress.com/Optical-Nanoscopy-and-Novel-Microscopy-Techniques/Xi/9781466586291>

Invited talks:

1. IEEE OGC 2015 (Shenzhen, China)
2. IS2TOM 2015 (Harbin, China)
3. Light Youth Forum 2015 (Changchun, China)
4. Asia Communication and Photonics Conference 2014 (Shanghai, China).
5. 12th International Conference on Photonics and Imaging in Biology and Medicine (PIBM, Wuhan, China)
6. PIERS 2014 (Guangzhou, China)
7. OSA Advances in Optoelectronics and Micro/nano-optics (AOM) 2014 (Xi'an, China)
8. SPIE Photonics Asia 2014 (Beijing, China)
9. Asia Communication and Photonics Conference 2013 (Beijing, China).
10. SPIE International Symposium on Photoelectronic Detection and Imaging 2013 (Beijing, China).
11. SPIE Ultrafast Imaging and Spectroscopy 2013 (San Diego, USA)
12. OSA POEM N3 conference 2013 (Wuhan, China).
13. OSA NTM 2013 (Hawaii, USA).
14. OSA OPTIC 2012 (Taiwan, China).
15. International Symposium on Cosmetic Developments, 2011, Shenyang, China
16. International Conference on Biomedical Photonic Microscopy Techniques (IBMPMT) 2010

Patents:

1. S. Leavesley, J. P. Robinson, **P. Xi**, “Endoscopic imaging device”, **US Patent** US20090012369A1.
2. S. Leavesley, J. P. Robinson, **P. Xi**, “Endoscopic imaging device”, **US Patent** US877864B2.
3. Y. Ding, H. Xie, P. Xi, “A Laser scanning phase microscopy method and system”, **Patent#** ZL201210338703.6 (Invent patent, in Chinese)
4. X. Yang, P. Xi, H. Li, “Real time tuning confocal microscopy system”, **Patent#** ZL201310134339.6 (Invent patent, in Chinese)
5. P. Xi, Q. Ren, X. Huang, J. Wan, Multi-modality confocal microscopy method and system, **Patent#** ZL200810202398.1 (Invent patent, in Chinese)
6. P. Xi, Q. Ren, X. Huang, J. Wan, Multi-modality confocal microscopy system, **Patent#** ZL200820155014.0 (Application patent, in Chinese)
7. C. Zhou, **P. Xi**, L. Liu, Ultrashort laser pulse time interval measuring method, **Patent#** ZL01113051.2 (Invent patent, in Chinese)
8. C. Zhou, **P. Xi**, L. Liu, hexagonal phase array illumination method, **Patent#** ZL01126097.X (Invent patent, in Chinese)
9. C. Zhou, L. Liu, **P. Xi**, Phase plates for beam scanner, **Patent#** ZL01113052.0 (Invent patent, in Chinese)
10. C. Zhou, L. Liu, P. Xi, Phase plates fabricated with binary optics technology, **Patent#** ZL01246764.2 (Application patent, in Chinese)