

Ye Tian

Research/Teaching Assistant/ Ph.D. student

Personal Information

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Research interests

Fiber sensor; Biomedical devices; FEA simulation; Biosensors; Fiber communication; Acoustic sensor; Photoacoustic; Optical design; Ceramic material; MEMS; FIB; Pressure sensor; Temperature sensor; SERS sensor; Micro resonator; Nano/Micro fabrication; Nanoimprint; Photonics and Optoelectronics.

Highlights

- Intense research curiosity and multidisciplinary research experience.
- Strong research background: 25 paper publications; 5 conference presentations; 1 patent disclosure.
- Outstanding Graduate Award; Professional Development Award; NSF Scholarship, and other honors.
- Peer reviewer of journals: Sensor Letters, PIER & JEMWA, Chinese Optics Letters, MDPI, GJRE, etc.

Education

Ph.D.	Expected May 2013	University of Massachusetts Lowell
Major: Electrical & Computer Engineering		GPA: 3.7/4.0
M.S.	2008	Nankai University, CHN
Major: Optics		GPA: 3.6/4.0
B.S.	2005	Nankai University, CHN
Major: Communication Engineering		GPA: 3.0/4.0

Research Experience

2009.01 - Present: Center for Electromagnetic Materials & Optical Systems, UMass Lowell

- Miniature Label-free fiber Biosensing Probes
- Blood pressure medical device packaging and animal testing
- Acoustic/ Pressure optical fiber sensor
- Amplifier circuit designing, building and testing
- FEA simulation of fiber photoacoustic generator for medical imaging
- MEMS design and fabrication for optical sensors
- Nano/Micro fabrication using FIB and Nanoimprint on Polymer Derived Ceramic

2005.09-2008.06: Key Laboratory of Optoelectronic Information Science and Technology, Tianjin, CHN

- Performed optical design and image processing of medical device

University Activity

2010 Fall Championship of UML 8-Ball Tournament

2010 Spring Championship of UML 9-Ball Tournament

2009 Fall Championship of UML 8-Ball Tournament

Research Skills

Equipment: Harvard Clean room (Photolithography, RIE, CVD, Wet bench)
UML (FIB, SEM, AFM, LSCM, UV-Vis, Other general facilities)
Programming Languages: C/C++, Verilog HDL, SQL, HTML
Software Packages: SolidWorks, MATLAB, AutoCAD, Labview, Zemax, RSoft, Cadence, LEdit, Protel, MathCad, VC++, Qt, Comsol, Endnote, OriginLab, Office.

Other Skills

Management: Lab facilities quotation and purchase; lab website design
Communication: Technical meetings with university and industry
Teaching: Assist in teaching new graduate students and undergraduate students
Writing: Professional writing of funding proposals, project reports, conference posters/slides

Presentations

- "An optical biosensor using MEMS-based V-grooves", SPIE Defense, Security, and Sensing, Orlando, FL, USA, April 2011.
- "Simulation on photoacoustic conversion efficiency of optical fiber-based ultrasound generator using different absorbing film materials", SPIE NDE, CA, USA, March 2011.
- "Finite element modeling of an optical fiber photoacoustic generator performance", SPIE NDE, CA, USA, March 2011.
- "Label-free detection of biomolecules using a tapered optical fiber sensor", SPIE Defense, Security, and Sensing, Orlando, FL, USA, April 2010.
- "Label-free rapid detection of biomolecule based on tapered single-mode fiber probe", The Fifth International Workshop on Advanced Smart Materials and Smart Structures Technology, Northeastern University, Boston, MA, USA, July 2009.

Journal Publications

- Xiaotian Zou, Alice Chao, **Ye Tian**, Nan Wu, etc., "An experimental study on the concrete hydration process using Fabry-Perot fiber optic temperature sensors", accepted by Journal of the International Measurement Confederation, 2012.
- **Ye Tian**, Wenhui Wang, Nan Wu, Xiaotian Zou, and Xingwei Wang, "Tapered optical fiber sensor for label-free detection of biomolecules", *Sensors*, 11(4), 3780-3790, 2011.
- **Ye Tian**, Wenhui Wang, Nan Wu, Xiaotian Zou, Charles Guthy and Xingwei Wang, "A miniature fiber optic refractive index sensor built in a MEMS-based microchannel", *Sensors*, 11(1), 1078-1087, 2011.
- Nan Wu, Wenhui Wang, **Ye Tian**, Xiaotian Zou, Michael Maffeo, Christopher Niezrecki, Julie Chen, and Xingwei Wang, "Low-cost rapid miniature optical pressure sensors for blast wave measurements", *Optics Express*, 19(11), 10797-10804, 2011.
- Wenhui Wang, Nan Wu, **Ye Tian**, Christopher Niezrecki, and Xingwei Wang, "Miniature all-silica optical fiber pressure sensor with an ultrathin uniform diaphragm", *Optics Express*, 18(9), 9006-9014, 2010.
- Xiaodong Ma, Haibin Huo, Wenhui Wang, **Ye Tian**, Nan Wu, etc., "Surface-enhanced Raman scattering sensor on an optical fiber probe fabricated by a femtosecond laser", *Sensors*, 10(12), 11064-11071, 2010.
- Wenhui Wang, Nan Wu, **Ye Tian**, etc., "Optical pressure/acoustic sensor with precise Fabry-Perot cavity length control using angle polished fiber", *Optics Express*, 17(19), 16613-16618, 2009.

- Yan Xu, Zhaoqi Wang, **Ye Tian**, “Hybrid refractive/diffractive design of a retina camera based on the eye model”, *Acta Photonica Sinica*, 38(5), 1122-1125, 2009.
- **Ye Tian**, Huaijun Wang, Zhiliang Fang, “The pupil diameter precise measurement based on morphological reconstruction algorithm”, *Journal of Optoelectronics Laser*, 3(19), 409-411, 2008.
- Huaijun Wang, **Ye Tian**, Zhiliang Fang, “Research and optical system design of a pupilometer”, *Acta Photonica Sinica*, 37 (8), 1622-1625, 2008.

Conference Publications (Include those listed in the “Presentations” section)

- Nan Wu, **Ye Tian**, Xiaotian Zou, and Xingwei Wang “Photoacoustic generation using gold nanostructure fabricated by femtosecond laser”, Accepted by ISFA2012.
- Nan Wu, **Ye Tian**, Xiaotian Zou, and Xingwei Wang, “Study of the compact fiber optic photoacoustic ultrasonic transducer”, Accepted by SPIE NDE.
- Xiaotian Zou, Alice Chao, Nan Wu, **Ye Tian**, Tzu-Yang Yu, and Xingwei Wang, “Miniature fiber optic temperature sensor for concrete structural health monitoring”, Accepted by SPIE NDE.
- Nan Wu, Wenhui Wang, **Ye Tian**, Xingwei Wang, “Ultra fast all-optical fiber pressure sensor for blast event evaluation”, Proceedings of SPIE 7753, 77535J, 2011.
- **Ye Tian**, Xiaotian Zou, Xiaodong Ma, Nan Wu, Kai Sun, Xingwei Wang, “An optical biosensor using MEMS-based V-grooves”, Proceedings of SPIE 8024, 802403, 2011.
- Nan Wu, Wenhui Wang, **Ye Tian**, Christopher Niezrecki, Xingwei Wang, “A miniature pressure sensor for blast event evaluation”, Proceedings of SPIE 8029, 80290V, 2011.
- Xiaotian Zou, Nan Wu, **Ye Tian**, Jiacheng Li, etc., “Study of blast event propagation in different materials using a novel ultrafast miniature optical pressure sensor”, Proceedings of SPIE 8028, 802829, 2011.
- Xiaotian Zou, **Ye Tian**, Nan Wu, Kai Sun, Xingwei Wang, “Adaptive sensor fusion algorithm for helmet structural health monitoring”, Proceedings of SPIE 7984, 79841A, 2011.
- Kai Sun, Nan Wu, **Ye Tian**, Xingwei Wang, “Finite element modeling of an optical fiber photoacoustic generator performance”, Proceedings of SPIE 7981, 79811W, 2011.
- Kai Sun, Nan Wu, **Ye Tian**, Xingwei Wang, “Simulation on photoacoustic conversion efficiency of optical fiber-based ultrasound generator using different absorbing film materials”, Proceedings of SPIE 7982, 798213, 2011.
- **Ye Tian**, Wenhui Wang, Armand Chery Jr., Nan Wu, Charles Guthy, and Xingwei Wang, “Label-free detection of biomolecules using a tapered optical fiber sensor”, Proceedings of SPIE 7673, 767307, 2010.
- Wenhui Wang, Nan Wu, **Ye Tian**, Charles Guthy, and Xingwei Wang, “Dynamic test of an acoustic/pressure sensor with precise cavity length control”, Proceedings of SPIE 7677, 76770W, 2010.
- Nan Wu, Wenhui Wang, **Ye Tian**, Charles Guthy and Xingwei Wang, “Theoretical analysis of a novel ultrasound generator on an optical fiber tip”, Proceedings of SPIE 7677, 76770X, 2010.
- Xingwei Wang, Chunyang Liu, Nan Wu, Wenhui Wang, Charles Guthy, **Ye Tian**, etc., “Simulation of a novel ultrasound generator-receiver on a single optical fiber”, Proceedings of SPIE 7677, 76770Y, 2010.
- **Ye Tian**, Wenhui Wang, Alex Rancourt, Nan Wu, and Xingwei Wang, “Label-free rapid detection of biomolecule based on tapered single-mode fiber probe”, The Fifth International Workshop on Advanced Smart Materials and Smart Structures Technology, 2009.