

# Jiao Chen

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New Mexico Highlands University, USA  
701-740-7051, [jiaochen@nmhu.edu](mailto:jiaochen@nmhu.edu)

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## CURRENT POSITION

- Tenure-tracked Assistant Professor at the New Mexico Highlands University

2014-Present

## EDUCATION

- Ph.D in Analytical Chemistry 2014  
University of North Dakota (UND), Grand Forks, ND
- B.E. in Pharmaceutical Engineering 2008  
Zhejiang Chinese Medical University (ZCMU), Hangzhou, P.R. China

## PUBLICATIONS AND BOOKCHAPTER

### Patents:

- **Chen, J.** Zhao, J. X., A Simple, Fast, and Cost-Effective Synthesis Method to Prepare Various Shapes of Silica Nanomaterials. USA provisional patent, 2012, **Pat. No. 9,139, 443**

### Published Journal Articles and Bookchapter:

1. Wu, X.; **Chen, J.**; Wu, M.; Zhao, X.J.; Aptamers: Active Targeting Ligands for Cancer Diagnosis and Therapy, *Theranostics*, **2015**, 5, 322-344 (Chen, J. and Wu, X. are **co-first authors** and contributed equally to this paper)
2. **Chen, J.**; Wu, X.; Fahrudin, N.; Zhao, X., Shape-Tunable Hollow Silica Nanomaterials Based on Soft-templating Method and Their Application as a Drug Carrier, *ACS Appl. Mater. Interfaces*, **2014**, 6, 21921-21930.
3. Liang, S., Zhao, Y., Xu, S., Wu, X., **Chen, J.**, Wu, M., Zhao, J. X. A Silica-Gold-Silica Nanocomposite for Photothermal Therapy in the Near-Infrared Region, *ACS Appl. Mater. Interfaces*, **2015**, 7, 85-93.
4. Zhao, Y.; Ye, Y.; Zhou, X.; **Chen, J.**; Jin, Y.; Hanson, A.; Wu, M.; Zhao, X. J., Photosensitive Fluorescent Dye Contributes to Phototoxicity of Dye-doped Silica Nanoparticles in Cells and Mice, *Theranostics*, **2014**, 4, 445-459.
5. **Chen, J.**; Li, X.; Wu, X.; Pierce, J.T.; Fahrudin. N; Min, W., Zhao, X.J., Au-Silica Nanowire Nanohybrid as a Hyperthermia Agent for Photothermal Therapy in the Near-Infrared Region, *Langumir*, **2014**, 30, 9514-9523.

6. Xu, H.; **Chen, J.**; Birrenkott, J.; Zhao, X.; Takalkar, S.; Baryeh, K.; Liu, G., Gold-Nanoparticle-Decorated Silica Nanorods for Sensitive Visual Detection of Proteins, *Anal. Chem.*, **2014**, 86, 7351-7359. (Chen, J. and Xu, H are **co-first authors** and contributed equally to this paper)
7. Wu, X.; **Chen, J.**; Zhao, X.J.; Ultrasensitive Detection of 3'-5' Exonuclease Enzymatic Activity Using Molecular Beacons, *Analyst*, **2014**, 139, 1081-1087.
8. **Chen. J.**, Fahrudin, N, Zhao, X.J., Development of Gold Nanoparticle-Enhanced Fluorescent Nanocomposites, *Langmuir*, **2013**, 29, 1584-1591.
9. Liang, S.; **Chen, J.**; Pierce, D.; Zhao, X. J., A Turn-on Fluorescent Nanoprobe for Selective Determination of Selenium (IV), *ACS Appl. Mater. Interfaces*, **2013**, 5, 5165-5173.
10. Wu, X.; **Chen, J.**; Zhao, X.J., A Reversible Fluorescent Logic Gate for Sensing Mercury and Iodide Ions Based on Molecular Beacon, *Analyst*, **2013**, 138, 5281-5287.
11. Wu, X.; Tian, F.; Wang, W.; **Chen. J.**; Min, W., Zhao, X.J., Fabrication of Highly Fluorescent Graphene Quantum Dots Using L-Glutamic Acid for in vitro/in vivo imaging and sensing, *J. Mater. Chem. C*, **2013**, 1, 4676 - 4684.
12. **Chen, J.**, Zhao, X.J., Upconversion Nanomaterials: Synthesis, Mechanism, and Applications in Sensing, *Sensor*, **2012**, 12, 2414-2435.
13. Liang, S., John, C. L., Xu, S. P., **Chen, J.**, Jin, Y. H., Yuan, Q., Tan, W.H., Zhao, X.J., Silica-Based Nanoparticles: Design and Properties, **2010**, 9, 229 – 251. (book chapter)

#### **Journal Articles under Reviewing:**

14. Takalkar, S.; Xu, H.; **Chen, J.**; Baloda, M.; Gurung, A. S.; Baryeh, K.; Qiu, W.; Zhao, J. X.; Liu, G., Gold Nanoparticles Coated Silica Nanorods for Sensitive Visual Detection of microRNA on Lateral Flow Strip Biosensor, **2015**. (Submitted to *Biosens. Bioelectron.*)

#### **Manuscripts in Preparation:**

15. Jin, Y.; **Chen, J.**; Zhao, X.J.; Synthesis of Multicolored Fluorescent Silica Nanoparticles through Poly-L-Lysine Conjugation, **2015**.
16. Wu, X.; **Chen, J.**; Strating, S.; Zhao, X.J., Label-Free Fluorescent Assay for T4 Polynucleotide Kinase Activity Detection Coupled Exonuclease Reaction and SYBR Green I, **2015**.
17. Jin, Y.; Huan, Y.; Parisien, J.; **Chen, J.**; Wu, M.; Zhao, J.X., Development of Fluorescence Resonance Energy Transfer-based Multicolor Nanoparticles for Simultaneous Determination of Multiple Targets, **2015**.

#### **EDITORIAL BOARD**

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- Guest editor of Sensors & Transducers Journal
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## RESEARCH GRANTS

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- Research Proposal for NSF Partnerships for Research and Education in Materials (\$3.3 M)
  - Award Number: 1523611
- Research Proposal for NSF ND EPSCoR Doctoral Dissertation Assistantship Program **2013**
  - Grant Number: EPS-814442
- Research Proposal for 9<sup>th</sup> US EPA P3 Program **2011**
  - Proposal Number: G11Q40128

## HONORS AND AWARDS

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- NSF Partnerships for Research and Education in Materials (PREM) Grant (\$3.3 M) **2015**
- NMHU Faculty Seed Funding Award **2014**
- Doctoral Dissertation Assistantship (DDA) Award: \$18,000 (**Funded by ND EPSCoR**) **2013**
- Leadership Award Scholarship **2013**
- Lillian Elsinga Outstanding Student Leader Award **2013**
- Travel Award from Graduate School, UND **2013**
- Severson Graduate Research Award **2012**
- 9<sup>th</sup> Environmental Protection Agency (EPA) Annual P3 (People, Prosperity, and the Planet) Awards (**Funded by US EPA**) **2011**
- Denison Graduate Award, First place award for senior graduate student at the recent 103<sup>rd</sup> Annual Meeting of the North Dakota Academy of Sciences **2011**

## MEMBERSHIP

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- Iota Sigma Pi (National Honor Society for Women in Chemistry) **2012 - present**
- The American Chemical Society **2012 - present**

## CONFERENCE PRESENTATIONS

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### International/National/ Regional Conferences

- **Chen, J., \*** Xu, H., Liu, G., Zhao, X., Highly Sensitive, Selective, and Fast Protein Analysis Using Lateral Flow Immunoassay. Pittcon 2014, Chicago, IL, Mar 2 – 6, 2014. (Poster)
- **Chen, J., \*** Li, X., Wu, X., Fahrudin, N., Wu, M., Zhao, X. Au-Modified Silica Nanowires: Synthesis, Characterization, and Application as Hyperthermia Agents for Photothermal Therapy. Pittcon 2013, Philadelphia, PA, Mar 16 – 21, 2013. (Oral)

- **Chen, J., \*** Wu, X., Fahrurddin, N., Zhao, X. Synthesis and Characterization of Hollow Silica Tadpole-Like Nanomaterials. Pittcon 2013, Philadelphia, PA, Mar 16 – 21, 2013. (Oral)
- **Chen, J., \*** Wu, X., Fahrurddin, N., Zhao, X. Development of a Novel and Facile Method for Synthesizing Hollow Silica Nanoparticles. Pittcon 2013, Philadelphia, PA, Mar 16 – 21, 2013. (Poster)
- Wu, X., **Chen, J.,** Zhao, X. Ultrasensitive Detection of 3'-5' Exonuclease Enzymatic Activity Using Molecular Beacon. Pittcon 2013, Philadelphia, PA, Mar 16 – 21, 2013. (Poster)
- Wu, X., **Chen, J.,** Zhao, X. A Fluorescent Logic Gate Based on Molecular Beacon for the Sensing of Mercury and Iodide. Pittcon 2013, Philadelphia, PA, Mar 16 – 21, 2013. (Oral)
- Wu, X., Strating, S., **Chen, J.,** Zhao, J. Label-Free Fluorescent Assay for T4 Polynucleotide Kinase Activity Detection Coupled Exonuclease Reaction and SYBR Green I. Pittcon 2013, Philadelphia, PA, Mar 16 – 21, 2013. (Poster)
- **Chen, J.,\*** Zhao, X. J., Au-modified Silica Nanowires: Synthesis and Application as Hyperthermia Agents for Photothermal Therapy. The Graduate School 2013 Scholarly Forum, Grand Forks, ND March 5th, 2013 (Oral)
- **Chen, J.,\*** Fahrurddin, N.; Wu, X., Wu, M., Zhao, X. Synthesis, Characterization, and Applications of Hollow Silica Nanoparticles. EPSCoR 2012 State Conference, Grand Forks, ND. September 18, 2012 (Poster).
- **Chen, J.,\*** Fahrurddin, N.; Wu, X., Zhao, X. Development of A Novel Mercury Biosensor. Pittcon 2012, Orlando, FL. Mar 11 – 15, 2012 (Poster)
- **Chen, J.,\*** Zhao, X. Hg<sup>2+</sup> Detection via Rolling Circle Amplification. In North Dakota Academy of Science, Belcourt, ND, 2011 (Oral)
- **Chen, J.,\*** Jin, Y.; Fahrurddin, N.; Zhao, X. Gold Nanoparticle-enhanced Fluorescent nanocomposites. Pittcon 2011, Atlanta, GA, Mar 13 – 18, 2011 (Oral)
- **Chen, J., \*** Jin, Y.; Zhao, Synthesis of Metal-enhanced Fluorescent Nanocomposites. In North Dakota Academy of Science, Minot, ND, 2010 (Oral)
- **Chen, J., \*** Jin, Y.; Zhao, X. Development of Metal-enhanced Fluorescent Nanocomposites. In UND Graduate Scholarly Forum, Grand Forks, ND, 2010 (Oral)

- **Chen, J.,\*** Jin, Y.; Zhao, X. Development of Gold Nanoparticle-enhanced Fluorescent Nanocomposites. Pittcon 2010, Orlando, FL. Feb 28 – Mar 5, 2010 (Poster)
- **Chen, J., \*** Jin, Y., Zhao, X. J., Synthesis of Metal-enhanced Fluorescent Nanocomposites. ND EPSCoR Meeting, Minot, ND April 23rd, 2010 (Oral)
- **Chen, J.,\*** Zhao, X. J., Development of Metal-enhanced Fluorescent Nanocomposites. The Graduate School 2010 Scholarly Forum, Grand Forks, ND March 9th, 2010 (Oral)
- **Chen, J.,\*** Jin, Y., Zhao, J. X., Development of Metal-enhanced Fluorescent Nanocomposites for Studying the Effects of Metallic Nanostructures on Properties of Fluorescent Molecules. Pittcon 2009, Chicago, IL, March 8-13, 2009 (Poster).