
Rui Wang

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SUMMARY

I am currently a Professor at the School of Biological Science and Medical Engineering at Southeast University, with extensive postdoctoral experience at Arizona State University and Texas A&M University. My research primarily focuses on analytical chemistry, fluorescence imaging, and Raman spectroscopy. To date, I have published over 30 peer-reviewed papers, including *Nat. Commun.*, *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Anal. Chem.*, *Biomaterials*, etc.

My Google Scholar profile: <https://scholar.google.com/citations?user=8-huZkoAAAAJ&hl=zh-CN>

RESEARCH INTERESTS

- Analytical Chemistry
- Fluorescence Imaging
- Raman Spectroscopy
- Surface Plasmon Resonance
- Drug Delivery
- Nanomaterials
- Mesoporous Materials
- Upconversion Nanoparticles

EXPERIENCE

_ 10/2021 - Current **Southeast University** – China

Professor

- State Key Laboratory of Digital Medical Engineering, School of Biological Science and Medical Engineering

03/2020 - 06/2021 **Arizona State University** – United States

Postdoctoral Research Associate

- Biodesign Institute
- Supervisor: Nongjian Tao & Shaopeng Wang

11/2017 - 03/2020 **Texas A&M University** – United States

Postdoctoral Research Associate

- Department of Biochemistry & Biophysics
- Supervisor: Dmitry Kurovski

EDUCATION

_ 06/2017

Fudan University Shanghai, China

Ph.D.: Inorganic Chemistry

- Supervisor: Fan Zhang

06/2012

East China University of Science and Technology Shanghai, China
Bachelor: Chemical Engineering

ACADEMIC ACTIVITY

2021-2023, Guest Editor, Biosensors

SELECTED PUBLICATIONS

1. **Rui Wang**, Lei Zhou, Gaolin Liang*, et al. Spatially Quantitative Imaging of Enzyme Activity in a Living Cell. *J. Am. Chem. Soc.* 2024, *146*, 34870-34877.
2. Yu Deng, Gaolin Liang*, **Rui Wang***, et al. “Turn-on” NIR-II fluorescence of a dually quenched probe for sensitive imaging of cathepsin B in vivo. *Chem. Commun.* 2025, *61*, 544-547.
3. Liangxi Zhu, Gaolin Liang*, **Rui Wang***, et al. Acid and phosphatase-triggered release and trapping of a prodrug on cancer cell enhance its chemotherapy. *Biomaterials* 2025, DOI: 10.1016/j.biomaterials.2025.123254.
4. Zhe He, **Rui Wang***, Dmitry Kurouski*, et al. Imaging spatial plasmon mode of nanocavity formed by Au tip and Au nanorod lattice in tip-enhanced Raman spectroscopy. *J. Appl. Phys.* 2024, *135*, 193110.
5. Xinyi Hu, **Rui Wang***, Gaolin Liang*, et al. Enhanced Photoacoustic Imaging of Urokinase-Type Plasminogen Activator Activity in Tumors. *Anal. Chem.* 2023, *95*, 14511-14515.
6. Yu Deng, **Rui Wang***, Gaolin Liang*, et al. A chemiluminescent probe for imaging peroxynitrite in inflammatory cells and tissues. *Anal. Chem.* 2023, *95*, 6496-6500.
7. Xiang Shi, **Rui Wang***, Gaolin Liang*, et al. Highly lipophilic coumarin fluorophore with excimer-monomer transition property for lipid droplet imaging. *Chin. Chem. Lett.* 2023, *34*, 107613.
8. **Rui Wang**, Zhe He, Dmitry Kurouski* Near-field and photocatalytic properties of mono-and bimetallic nanostructures monitored by nanocavity surface-enhanced Raman scattering. *Nano Res.* 2023, *16*, 1545-1551.
9. **Rui Wang**, Jiapei Jiang, Pengfei Zhang*, Shaopeng Wang*, et al. Rapid Regulation of Local Temperature and Transient Receptor Potential Vanilloid 1 Ion Channels with Wide-Field Plasmonic Thermal Microscopy. *Anal. Chem.* 2022, *94*, 14503-14508. (Cover Article)
10. **Rui Wang**, Zhe He, Dmitry Kurouski*, et al. Gap-mode tip-enhanced Raman scattering on Au nanoplates of varied thickness. *J. Phys. Chem. Lett.* 2020, *11*, 3815-3820.
11. Zhandong Li#, **Rui Wang#**, Dmitry Kurouski* Nanoscale photocatalytic activity of gold and gold-palladium nanostructures revealed by tip-enhanced raman spectroscopy. *J. Phys. Chem. Lett.* 2020, *11*, 5531-5537.

12. **Rui Wang**, Jingbai Li, Dmitry Kurouski*, et al. Direct experimental evidence of hot carrier-driven chemical processes in tip-enhanced Raman spectroscopy (TERS). *J. Phys. Chem. C* 2020, *124*, 2238-2244.
13. **Rui Wang**, Dmitry Kurouski*, et al. Use of Raman spectroscopy and size-exclusion chromatography coupled with HDX-MS spectroscopy for studying conformational changes of small proteins in solution. *J. Pharm. Biomed. Anal.* 2020, *189*, 113399.
14. Mengyao Zhao#, **Rui Wang**#, Fan Zhang*, et al. Precise in vivo inflammation imaging using in situ responsive cross-linking of glutathione-modified ultra-small NIR-II lanthanide nanoparticles. *Angew. Chem. Int. Ed.* 2019, *131*, 2072-2076.
15. **Rui Wang**, Dmitry Kurouski* Thermal reshaping of gold microplates: three possible routes and their transformation mechanisms. *ACS Appl. Mater. Interfaces* 2019, *11*, 41813-41820.
16. **Rui Wang**, Dmitry Kurouski* Elucidation of tip-broadening effect in tip-enhanced Raman spectroscopy (TERS): A cause of artifacts or potential for 3D TERS. *J. Phys. Chem. C* 2018, *122*, 24334-24340.
17. **Rui Wang**, Lei Zhou, Fan Zhang*, et al. In vivo gastrointestinal drug-release monitoring through second near-infrared window fluorescent bioimaging with orally delivered microcarriers. *Nat. Commun.* 2017, *8*, 14702.
18. **Rui Wang**, Xiaomin Li, Fan Zhang*, et al. Epitaxial Seeded Growth of Rare-Earth Nanocrystals with Efficient 800 nm Near-Infrared to 1525 nm Short-Wavelength Infrared Downconversion Photoluminescence for In Vivo Bioimaging. *Angew. Chem. Int. Ed.* 2014, *53*, 12086-12090. (Cover Article)
19. **Rui Wang**, Fan Zhang* NIR luminescent nanomaterials for biomedical imaging. *J. Mater. Chem. B* 2014, *2*, 2422 -2443.
20. Xiaomin Li#, **Rui Wang**#, Fan Zhang*, Dongyuan Zhao*, et al. Nd³⁺Sensitized Up/Down Converting Dual-Mode Nanomaterials for Efficient In-vitro and In-vivo Bioimaging Excited at 800 nm. *Sci. Rep.* 2014, *3*, 3536.
21. **Rui Wang**, Fan Zhang* Near-infrared Nanomaterials. Royal Society of Chemistry 2016. (Chapter 1)
22. **Rui Wang**, Fan Zhang*, et al. Photon Upconversion Nanomaterials, Springer 2015. (Chapter 1, 6, 11)
23. Lei Zhou, **Rui Wang**, Dongyuan Zhao, Fan Zhang*, et al. Single-band upconversion nanoprobe for multiplexed simultaneous in situ molecular mapping of cancer biomarkers. *Nat. Commun.* 2015, *6*, 6938.
24. Xiaomin Li, **Rui Wang**, Fan Zhang*, and Dongyuan Zhao* Engineering homogeneous doping in single nanoparticle to enhance upconversion efficiency. *Nano Lett.* 2014, *14*, 3634-3639.

25. Isaac Esparza, **Rui Wang**, Dmitry Kurouski* Surface-enhanced Raman analysis of underlaying colorants on redyed hair. *Anal. Chem.* 2019, *91*, 7313-7318.
26. Charles Farber, **Rui Wang**, Robert Chemelewski, John Mullet, Dmitry Kurouski* Nanoscale structural organization of plant epicuticular wax probed by atomic force microscope infrared spectroscopy. *Anal. Chem.* 2019, *91*, 2472-2479.
27. Lei Zhou, Yong Fan, **Rui Wang**, Xiaomin Li, Lingling Fan, Fan Zhang* High-capacity upconversion wavelength and lifetime binary encoding for multiplexed biodetection. *Angew. Chem. Int. Ed.* 2018, *57*, 12824-12829.
28. Yong Fan, Peiyuan Wang, Yiqing Lu*, **Rui Wang**, Lei Zhou, Xianlin Zheng, Xiaomin Li, James A. Piper, Fan Zhang*, et al. Lifetime-engineered NIR-II nanoparticles unlock multiplexed in vivo imaging. *Nat. Nanotechnol.* 2018, *13*, 941-946.