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## Plasmonic enhancement of single-molecule fluorescence under one- and two-photon excitation

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# Curriculum Vitae

I was born on 3st March 1983 in Fujian Province, China. I got my BSc degree in Theoretical Physics at Lanzhou University (Lanzhou, China) in 2006. I started my master project at Peking University (Beijing, China) under the supervision of Prof. Dr. Ruopeng Wang. I obtained the Master degree of Science with the title of 'Study of a Dielectric-Loaded Plasmonic Lens' in 2011. I then joined the research group of Prof. Dr. Weihai Ni as a research assistant at Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO). In September 2017, I started my PhD in the group of Prof. Dr. Michel Orrit at Leiden University. During my PhD, I worked on plasmon-mediated single-molecule fluorescence enhancement under one- and two-photon excitation.



# List of Publications

21. **X. Lu**, D. Punj, M. Orrit, *Two-photon excited single-molecule fluorescence enhanced by gold nanorod dimers*, *In preparation*.
20. **X. Lu**, D. Punj, M. Orrit, *Controlled synthesis of gold nanorod dimers with end-to-end configurations*, *In preparation*.
19. **X. Lu**, G. Ye, D. Punj, R. C. Chiechi, M. Orrit, *Quantum yield limits for the detection of single-molecule fluorescence enhancement by a gold nanorod*, *ACS Photonics* **7**, 2498 (2020).
18. **X. Lu**, W. Ye, W. You, H. Xie, Z. Hang, Y. Lai, W. Ni, *Collective resonance in helical superstructures of gold nanorods*, *Physical Review B* **101**, 045431,(2020).
17. F. Zhao, X. Wang, Y. Zhang, **X. Lu**, H. Xie, B. Xu, W. Ye, W. Ni, *In situ monitoring of silver adsorption on assembled gold nanorods by surface-enhanced Raman scattering*, *Nanotechnology* **31**, 295601 (2020)
16. W. Zhang, M. Caldarola, **X. Lu**, M. Orrit, *Plasmonic Enhancement of Two-Photon-Excited Luminescence of Single Quantum Dots by Individual Gold Nanorod*, *ACS Photonics* **5**, 2960 (2018).
15. W. Zhang, M. Caldarola, **X. Lu**, B. Pradhan, M. Orrit, *Plasmonic enhancement of a near-infrared fluorophore using DNA transient binding*, *Physical Chemistry Chemical Physics* **20**, 20468 (2017).
14. Z. Yang, Z. Li, **X. Lu**, F. He, X. Zhu, Y. Ma, R. He, F. Gao, W. Ni, Y. Yi, *Controllable biosynthesis and properties of gold nanoplates using yeast extract*, *Nano-micro letters* **9**, 1 (2017).
13. P. Xu, **X. Lu**, J. Zhao, Y. Li, S. Chen, J. Xue, W. Ou, S. Han, Y. Ding, W. Ni, *Metal Adsorbate-Induced Plasmon Damping in Gold Nanorods: The Difference Between Metals*, *Nano* **11**, 1650099 (2016).
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11. C. Shen, X. Lan, **X. Lu**, T. A. Meyer, W. Ni, Y. Ke, Q. Wang, *Site-specific surface functionalization of gold nanorods using DNA origami clamps*, *Journal of the American Chemical Society* **138**, 1764 (2016).
10. J. Zhao, P. Xu, Y. Li, J. Wu, J. Xue, Q. Zhu, **X. Lu**, W. Ni, *Direct coating of mesoporous titania on CTAB-capped gold nanorods*, *Nanoscale* **8**, 5417(2016).
9. Z. Chen, X. Lan, Y. C. Chiu, **X. Lu**, W. Ni, H. Gao, Q. Wang, *Strong chiroptical activities in gold nanorod dimers assembled using DNA origami templates*, *ACS Photonics* **2**, 392 (2015).
8. X. Lan, **X. Lu**, C. Shen, Y. Ke, W. Ni, Q. Wang, *Au nanorod helical superstructures with designed chirality*, *Journal of the American Chemical Society* **137**, 457 (2015).

7. C. Shen, X. Lan, **X. Lu**, W. Ni, Q. Wang, *Tuning the structural asymmetries of three-dimensional gold nanorod assemblies*, Chemical Communications **51**, 13627 (2015).
6. J. Wu, **X. Lu**, Q. Zhu, J. Zhao, Q. Shen, L. Zhan, W. Ni, *Angle-resolved plasmonic properties of single gold nanorod dimers*, Nano-micro letters **6**, 372 (2014).
5. G. Dai, **X. Lu**, Z. Chen, C. Meng, W. Ni, Q. Wang, *DNA origami-directed, discrete three-dimensional plasmonic tetrahedron nanoarchitectures with tailored optical chirality*, ACS applied materials & interfaces **6**, 5388 (2014).
4. J. Niu, D. Wang, H. Qin, X. Xiong, P. Tan, Y. g Li, R. Liu, **X. Lu**, J. Wu, T. Zhang, W. Ni, J. Jin, *Novel polymer-free iridescent lamellar hydrogel for two-dimensional confined growth of ultrathin gold membranes*, Nature communications **5**, 1 (2014).
3. **X. Lu**, J. Wu, Q. Zhu, J. Zhao, Q. Wang, L. Zhan, W. Ni, *Circular dichroism from single plasmonic nanostructures with extrinsic chirality*, Nanoscale **6**, 14244 (2014).
2. X. Lan, Z. Chen, **X. Lu**, G. Dai, W. Ni, Q. Wang, *DNA-directed gold nanodimers with tailored ensemble surface-enhanced Raman scattering properties*, ACS applied materials & interfaces **5**, 10423 (2013).
1. X. Lan, Z. Chen, G. Dai, **X. Lu**, W. Ni, Q. Wang, *Bifacial DNA origami-directed discrete, three-dimensional, anisotropic plasmonic nanoarchitectures with tailored optical chirality*, Journal of the American Chemical Society **135**, 11441 (2013).

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