Fluorescence of single copper proteins : dynamic disorder and enhancement by a gold nanorod

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Publications

1. **Pradhan, B.**, Khatua, S., Gupta, A., Aartsma, T., Canters, G., Orrit, M. *Gold-Nanorod-Enhanced Fluorescence Correlation Spectroscopy of Fluorophores with High Quantum Yield in Lipid Bilayers.*, J. Phys. Chem C, **120**, 25996-26003 (2016).

2. Zhang, W., Caldarola, M., **Pradhan, B.**, Orrit, M. *Gold Nanorod Enhanced Fluorescence Enables Single-Molecule Electrochemistry of Methylene Blue.*, Angew. Chem. Int. Ed., **56**, 1-5 (2017).

3. Caldarola, M., **Pradhan, B.**, Orrit, M. *Quantifying fluorescence enhancement for slowly diffusing single molecules in plasmonic near fields.* (Manuscript accepted in The Journal of Chemical Physics).

4. **Pradhan, B.**, Xueyan, M., Orrit, M. *Transient binding on a gold nanorod.* (Manuscript in preparation).

5. **Pradhan, B.**, Van Mulken, S., Ghosh, S., Miao, X., Canters, G., Orrit, M. *Dynamic heterogeneity in single electron-transfer proteins.* (Manuscript in preparation).

Curriculum Vitae

I was born on 15th July 1991 in Odisha, India. In 2011, I obtained my bachelor degree from Utkal University (Odisha) with Physics and Chemistry as major subjects. Then I moved to the Indian Institute of Technology, Mumbai where I completed my MSc in Chemistry in August 2013. During my masters, I investigated the microscopic arrangement of lipid molecules in micelles of different shapes with the help of ultrafast fluorescence techniques. From November 2013 to January 2014, I worked as a guest researcher at Leiden University in the group of Prof. Michel Orrit and Prof. Gerard Canters. During this short stay, I learned how to synthesize proteins from cells and label them with fluorescent markers. In February 2014, I started my PhD under the supervision of Prof. Michel Orrit and Prof. Gerard Canters. During my PhD I studied fluorescence enhancement by a gold nanorod and single-molecule dynamics of electron-transfer proteins. I supervised three undergraduate students and assisted a course on Molecular Physics for undergraduates.

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