Proforma for information to be provided by the Teaching/ Academic/ Research Staff

1. Name: Debanjan Guin, Ph.D.

2. Designation: Assistant Professor

3. Academic Qualifications:

Sr.	Degree	Institution	Year
01	B.Sc.	Burdwan University	2000
02	M.Sc.	Kalyani University	2002
03	Ph.D.	Indian Institute of Chemical Technology (IICT) Hyderabad	2008

4. Area of Specialization: (brief write up, 200 words)

- Target oriented synthesis of functional nanoparticle.
- Naked eye/ photoluminescence detection of biomolecules (glucose, cholesterol), water pollutants (toxic ions).
- Asymmetric catalysis using nanoparticles as catalyst.
- Development of nanoparticles for detection of cancer cells, separation and purification of proteins.
- Development of materials for supercapacitor, solar cell and LED applications.
- Synthesis of functional superparamagnetic nanomaterials for water purification.
- Development of electrochemical sensor for biomolecules.

5. Contact Information:

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6. Projects Undertaken as PI/ Co PI: 04 as PI

- Development of Multifunctional Magnetic Quantum Dots (MQDs) for Biosciences DST fast track project Complete in 2015 (SERB Fast Track).
- Development of Optical Sensor for Metal Ion Detection UGC-project (UGC-Start up) 2015-17.
- Development of Robust and Recyclable 'Dip Catalyst' for Important Organic Transformations (SERB EMR) 2016-2019.
- Surface Modified Magnetic Nanoparticles for waste water treatment (DST Water Technology initiative Programme WTI-2016)2017-2020.

7. Awards/ Recognitions if any:

8. List of 10 major Publications: (in order of importance)

01. Sharma P.; Maurya M.; Choudhary D.; Goswami M.; Kundu I.; Dobhal M. P, Tripathi, C. S. P*.; **Guin, D***., Naked eye detection and separation of Hg^{2+} ions using chitosan capped silver nanoparticles ***Sensor and Actuators B: Chemica****l* (In Press) (2018).

02. Singh, P.; Prabhune, A. A.; Tripathi, C. S. P*.; **Guin, D***., Water-Soluble Photoluminescence *On–Off–On* Probe for Speedy and Selective Detection of Fluoride Ions. ***ACS Sustainable Chemistry & Engineering*** 2017, *5* (1), 982-987.

03. Basu, A.; Suryawanshi, A.; Kumawat, B.; Dandia, A.; **Guin, D***.; Ogale, S. B*., Starch (Tapioca) to carbon dots: an efficient green approach to an *on-off-on* photoluminescence probe for fluoride ion sensing. ***Analyst*** *(Cambridge, U. K.)* **2015,** *140* (6), 1837-1841.

04. Suryawanshi, A.; Biswal, M.; Mhamane, D.; Gokhale, R.; Patil, S.; **Guin, D***.; Ogale, S*., Large scale synthesis of graphene quantum dots (GQDs) from waste biomass and their use as an efficient and selective photoluminescence on-off-on probe for Ag+ ions. ***Nanoscale*** **2014,** *6* (20), 11664-11670.

05. Singh, P.; Prabhune, A. A.; Ogale, S. B.; **Guin, D*.**, Glucose oxidase conjugated H2O2 sensitive CdTe QDs: an effective fluorescence tool for glucose sensing. *J. Mater. Chem. B* **2013,** *1* (47), 6538-6543.

06. Singh, P.; Joshi, K.; **Guin, D***.; Prabhune, A. A*., Chemically conjugated sophorolipids on CdTe QDs: a biocompatible photoluminescence nanocomposite for theranostic applications. *RSC Adv.* **2013,** *3* (44), 22319-22325.

07. Hill, L. J.; Bull, M. M.; Sung, Y.; Simmonds, A. G.; Dirlam, P. T.; Richey, N. E.; DeRosa, S. E.; Shim, I.-B.; **Guin, D.**; Costanzo, P. J.; Pinna, N.; Willinger, M.-G.; Vogel, W.; Char, K.; Pyun, J., Directing the Deposition of Ferromagnetic Cobalt onto Pt-Tipped CdSe@CdS Nanorods: Synthetic and Mechanistic Insights. *ACS Nano* **2012,** *6* (10), 8632-8645.

08. **Guin, D.**; Manorama, S. V.; Latha, J. N. L.; Singh, S., Photoreduction of Silver on Bare and Colloidal TiO2 Nanoparticles/Nanotubes: Synthesis, Characterization, and Tested for Antibacterial Outcome. *J. Phys. Chem. C* **2007,** *111* (36), 13393-13397.

09. **Guin, D.**; Baruwati, B.; Manorama, S. V., Pd on amine-terminated ferrite nanoparticles: a complete magnetically recoverable facile catalyst for hydrogenation reactions. *Org Lett* **2007,** *9* (7), 1419-21.

10. Baruwati, B.; **Guin, D.**; Manorama, S. V., Pd on Surface-Modified NiFe2O4 Nanoparticles: A Magnetically Recoverable Catalyst for Suzuki and Heck Reactions. *Org. Lett.* **2007,** *9* (26), 5377-5380.

9. Additional Information/ Achievements:

- Jan 2014- Nov 2017: UGC-Assistant Professor under UGC-FRP Department of Chemistry, University of Rajasthan, India
- Aug 2012-Jan 2014: DST Fast Track Fellow, Biochemistry Division, National Chemical Laboratory (NCL), Pune, India
- Sept 2010-Aug 2011: Postdoctoral Research Associate, Department of Chemistry, Cologne University, Germany
- Jan 2010-Sept 2010: Postdoctoral Research Associate, Department of Organic and Macromolecular Chemistry, Heinrich-Heine University, Dusseldorf, Germany
- June 2008-Oct 2009: Postdoctoral Research Associate. Department of Chemistry, University of Arizona, Tucson, Arizona, USA

10. Full List of Publications:

22. Research patent: Novel assay for detection of Fluoride Ions. Patent No. US9,651.491B2 date 16.05.2017.

21. Sharma P.; Maurya M.; Choudhary D.; Goswami M.; Kundu I.; Dobhal M. P, Tripathi, C. S. P*.; **Guin, D***., Naked eye detection and separation of Hg^{2+} ions using chitosan capped silver nanoparticles ***Sensor and Actuators B: Chemica***l (In Press) (2018).

20. Mourya M.; Choudhary D.; Basak A. K.; Tripathi C. S. P* and **Guin D*.,** Ag nanoparticles embedded filter paper: an efficient dip catalyst for aromatic nitrophenol reduction, intramolecular cascade reaction, and methyl orange degradation ***Chemistry Select*** - Wiley VCH 3(10), 2882-2887(2018)

19. Singh, P.; Prabhune, A. A.; Tripathi, C. S. P*.; **Guin, D***., Water-Soluble Photoluminescence *On–Off–On* Probe for Speedy and Selective Detection of Fluoride Ions. ***ACS Sustainable Chemistry & Engineering*** 2017, *5* (1), 982-987.

18. Sharma, H.; Mourya, M.; **Guin, D.**; Joshi, Y. C.; Dobhal, M. P.; Basak, A. K., Diisopropyl azodicarboxylate mediated selective dehydrogenation of 2-amino-3-cyano 4H-chromenes. ***Tetrahedron Letters*** **2017**.

17. Sharma, H.; Mourya, M.; Soni, L. K.; **Guin, D.**; Joshi, Y. C.; Dobhal, M. P.; Basak, A. K., Iodine mediated synthesis of coumarins from chromenes. ***Tetrahedron Letters*** **2015,** *56* (51), 7100-7104.

16. Basu, A.; Suryawanshi, A.; Kumawat, B.; Dandia, A.; **Guin, D***.; Ogale, S. B*., Starch (Tapioca) to carbon dots: an efficient green approach to an *on-off-on* photoluminescence probe for fluoride ion sensing. ***Analyst*** *(Cambridge, U. K.)* **2015,** *140* (6), 1837-1841.

15. Suryawanshi, A.; Biswal, M.; Mhamane, D.; Gokhale, R.; Patil, S.; **Guin, D***.; Ogale, S*., Large scale synthesis of graphene quantum dots (GQDs) from waste biomass and their use as an efficient and selective photoluminescence on-off-on probe for Ag+ ions. ***Nanoscale*** **2014,** *6* (20), 11664-11670.

14. Hod, M.; Dobbrow, C.; Vaidyanathan, M.; **Guin, D.**; Belkoura, L.; Strey, R.; Gottlieb, M.; Schmidt, A. M., Controlling the self-assembly of magnetic nanoparticles by competing dipolar and isotropic particle interactions. *J. Colloid Interface Sci.* **2014,** *436*, 83-89.

13. Gawli, Y.; Badadhe, S.; Basu, A.; **Guin, D.**; Shelke, M. V.; Ogale, S., Evaluation of n-type ternary metal oxide NiMn2O4 nanomaterial for humidity sensing. *Sens. Actuators, B* **2014,** *191*, 837-843.

12. Singh, P.; Prabhune, A. A.; Ogale, S. B.; **Guin, D*.**, Glucose oxidase conjugated H2O2 sensitive CdTe QDs: an effective fluorescence tool for glucose sensing. *J. Mater. Chem. B* **2013,** *1* (47), 6538-6543.

11. Singh, P.; Joshi, K.; **Guin, D***.; Prabhune, A. A*., Chemically conjugated sophorolipids on CdTe QDs: a biocompatible photoluminescence nanocomposite for theranostic applications. *RSC Adv.* **2013,** *3* (44), 22319-22325.

10. Hill, L. J.; Bull, M. M.; Sung, Y.; Simmonds, A. G.; Dirlam, P. T.; Richey, N. E.; DeRosa, S. E.; Shim, I.-B.; **Guin, D.**; Costanzo, P. J.; Pinna, N.; Willinger, M.-G.; Vogel, W.; Char, K.; Pyun, J., Directing the Deposition of Ferromagnetic Cobalt onto Pt-Tipped CdSe@CdS Nanorods: Synthetic and Mechanistic Insights. *ACS Nano* **2012,** *6* (10), 8632-8645.

09. Sher Shah, M. S. A.; **Guin, D.**; Manorama, S. V., Pd @ PEG-PU polymer networks: A convenient catalyst for hydrogenation and Suzuki coupling reactions. *Mater. Chem. Phys.* **2010,** *124* (1), 664-669.

08. **Guin, D.**; Korth, B. D.; Pyun, J., Synthesis, functionalization and assembly of magnetic polymer-nanoparticle composites. *Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.)* **2009,** *50* (2), 354.

07. **Guin, D.**; Manorama, S. V., Room temperature synthesis of monodispersed iron oxide nanoparticles. *Mater. Lett.* **2008,** *62* (17-18), 3139-3142.

06. **Guin, D.**; Manorama, S. V.; Latha, J. N. L.; Singh, S., Photoreduction of Silver on Bare and Colloidal TiO2 Nanoparticles/Nanotubes: Synthesis, Characterization, and Tested for Antibacterial Outcome. *J. Phys. Chem. C* **2007,** *111* (36), 13393-13397.

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04. Baruwati, B.; **Guin, D.**; Manorama, S. V., Pd on Surface-Modified NiFe2O4 Nanoparticles: A Magnetically Recoverable Catalyst for Suzuki and Heck Reactions. *Org. Lett.* **2007,** *9* (26), 5377-5380.

03. **Guin, D.**; Manorama, S. V.; Radha, S.; Nigam, A. K., One-pot size and shape controlled synthesis of DMSO capped iron oxide nanoparticles. *Bull. Mater. Sci.* **2006,** *29* (6), 617-621.

02. **Guin, D.**; Baruwati, B.; Manorama, S. V., A simple chemical synthesis of nanocrystalline AFe2O4 (A=Fe, Ni, Zn): An efficient catalyst for selective oxidation of styrene. *J. Mol. Catal. A: Chem.* **2005,** *242* (1-2), 26-31.

01. Reddy, K. M.; **Guin, D.**; Manorama, S. V.; Reddy, A. R., Selective synthesis of nanosized TiO2 by hydrothermal route: Characterization, structure property relation, and photochemical application. *J. Mater. Res.* **2004,** *19* (9), 2567-2575

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