CURRICULUM VITAE

SOMASHREE KUNDU

UGC-DAE Consortium for Scientific Research, Kolkata Centre
III/LB-8, Salt Lake, Kolkata Centre, Kolkata – 700098, India
Email: somashree.chem1991@gmail.com
PHONE NO: +91-9007573710, Fax: +91-33-23357008

Personal Details:

Date of Birth: July 26, 1991

Nationality: Indian

Sex: Female

Category: General

Marital Status: Married

Area of Research:

- Synthesis of fluorescent semiconductor nanoparticles (quantum dots) and their conjugates.
- Surface functionalization of the quantum dots (QDs) with various biomolecules and Dendrimer.
- Developing protocols for quantum dots based sensing application.
- Investigation of physico-chemical interaction involved between quantum dots and biomolecules.
- Synthesis of Graphene-QDs hybrid material.

Instrument/ Techniques experienced:

- ✓ Synthesis of QDs has been done by wet chemical route.
- ✓ QDs and their conjugates have been characterized by optical spectroscopy such as Photoluminescence spectroscopy, UV-Vis absorption spectroscopy and FT-IR spectroscopy.
- ✓ Determination of crystal phases of QDs has been done by X-ray diffraction (XRD) measurement.
- ✓ Time-Correlated Single Photon Counting Technique (TCSPC) has been employed in the photoluminescence decay measurement, phosphorescence measurement and anisotropy measurement.
- ✓ Transmission Electron Microscopy (TEM) and Dynamic Light Scattering (DLS) technique have been used for determination of as-synthesized particle size.
- ✓ Conformational changes of protein and peptides have been observed by Circular Dichroism (CD) spectroscopy.
- ✓ Themodynamics of binding of QDs with several biomolecular system was investigated by Isothermal Titration Calorimetry (ITC).
- ✓ Raman Spectroscopy has been employed in characterization of graphene based materials.

Academics:

Degree/Certificate	Institute	University/Board	Year	Marks (in%)
Matriculation (Class X)	Ramnagar Abinash High School(H.S)	W.B.B.S.E	2006	87.25
H.S (Science) (Class XII)	Ramnagar Abinash High School(H.S)	W.B.C.H.S.E	2008	79.40
B.Sc (Honours) (Chemistry)	Netaji Mahavidyalaya, Arambagh	The University Of Burdwan	2011	62.625
M.Sc (Chemistry) Physical Spl.	The University of Burdwan	The University Of Burdwan	2013	81.67
Ph.D (Thesis Submitted)	UGC-DAE Consortium for Scientific Research, Kolkata Centre	University of Calcutta	Awaiting degree	N/A

AWARD:

Qualified **NET-JRF** in **National Eligibility Test (NET)** jointly conducted by CSIR (Council of Scientific and Industrial Research) and UGC (University Grants Commission), Govt. of India held on 23rd December 2012.

Qualified **Graduate Aptitude Test in Engineering (GATE)-2013** was conducted by Indian Institute of Technology, Guwahati, India. Discipline: Chemistry (Percentile -98.2).

Ph.D Thesis Title :

Group II-VI Semiconductor Nanoparticles and Graphene-based Hybrid Materials: Synthesis, Characterization and Physico-chemical Interactions with Biomolecular Systems.

Supervisor: Dr. Abhijit Saha, Centre-Director, UGC-DAE Consortium for Scientific Research, Kolkata Center, III/LB-8, Bidhannagar, Kolkata – 700098, India.

Publications:

1. "Interactions of graphene oxide with luminescent biofunctionalized semiconductor nanoparticles: simultaneous monitoring in a protein–semiconductor coupled system", **S. Kundu**, S. Maiti, D.Ghosh, S. Mondal, C. N. Roy and A. Saha. ***RSC Adv***., 2015, 5, 8991.

2. "Synthesis and spectral measurements of sulphonated graphene: some anomalous observations, S. Maiti, **S. Kundu**, D. Ghosh, S. Mondal, C. N. Roy and A. Saha", ***Phys. Chem. Chem. Phys.***, 2016,18, 6701.

3. "Modulation of catalytic functionality of alkaline phosphatase induced by semiconductor quantum dots: evidence of substrate-mediated protection", D.Ghosh, C. N. Roy, S. Mondal, **S.Kundu**, S. Maiti, P.K.Bag and A. Saha, ***RSC Adv.***, 2016,6, 5024.

4. "SERS Enhancement on the Basis of Temperature-Dependent Chemisorption: Microcalorimetric Evidence", C. N. Roy, D. Ghosh, S.Mondal, **S. Kundu**, S. Maiti and A. Saha. ***ChemPhysChem,*** 2016, 15, 4144.

5. "A comparative evaluation of the activity modulation of flavo and non-flavo enzymes induced by graphene oxide",S.Maiti, **S. Kundu**, C. N. Roy, D. Ghosh, T. K. Das and A.Saha, ***J. Mater. Chem. B***, 2017,**5**, 2601.

6. "Aqueous Synthesis of Protein Encapsulated ZnSe Quantum Dots and Physical Significance of Semiconductor Induced Cu(II) Ion Sensing,"**S. Kundu**, S. Maiti, D. Ghosh, T. K. Das, C. N. Roy and A. Saha, ***ChemPhysChem,*** 2017, 18, 2533.

7. "Exploiting Biomimetic and Luminescence Properties of Multivalent Dendrimer-Semiconductor Nanohybrid Material in Ultra-Low Level Determination of Folic Acid."**S. Kundu,** S. Maiti, T. K. Das, D. Ghosh, C. N. Roy and A. Saha. ***Analyst,***2017,142, 2491.

8. "Synthesis of Excitation Independent Highly Luminescent Graphene Quantum Dots through Perchloric Acid Oxidation," S. Maiti, **S. Kundu**, C. N. Roy, T. K. Das, and A. Saha, ***Langmuir,***2017, 33, 14634.

9. "Interaction of Flavonols with Human Serum Albumin: A biophysical study showing structure activity relationship and enhancement when coated on silver nanoparticles," P. Das, S. K. Chaudhari, A. Das, **S. Kundu**, C. Saha,***J. Biomol. StructDyn***, 2018,DOI: 10.1080/07391102.2018.1462732.

10. "Modulating In Vitro Photodynamic Activities of Copper (II) Complexes," D. Musib, Md K. Raza, **S.Kundu**, M.Roy."***Eur. J. Inorg. Chem***. 2018, **2018**, 2011.

Papers presented in Conference/Symposium:

1. Synthesis of Biofunctional ZnSe Nanoparticles and its Possible Role in Photocatalytic Degradation of Organic Pollutants. **S. Kundu**, S.Maiti, D.Ghosh, S. Mondal and A. Saha, National Symposium on Radiation and Photochemistry (NSRP-2015), March 9–11, 2015, Indian Institute of Technology (IIT) Kanpur, Uttar Pradesh, India.

2. Syntthesis of protein encapsulated ZnSe quantum dots and a comparative evaluation on efficacy of Cu(II) Ion sensing of Group II-

VI semiconductor, **S. Kundu**, S. Maiti, D.Ghosh, S. Mondal and A. Saha, International Conference on Advanced Nanomaterials and Nanotechnology (ICANN 2015) , December 8-11, 2015,Indian Institute of Technology (IIT) Guwahati, Guwahati, Assam, India.

3. Interactions of Graphene Oxide with Protein-Semiconductor Combined Nanoparticle System, **S. Kundu**, S. Maiti, D. Ghosh, S. Mondal, C.N. Roy and A. Saha.Trombay Symposium on Radiation and Photochemistry (TSRP-2016), 5-9th January, 2016,Bhaba Atomic Research Centre (BARC), Mumbai, India.

4. Dendrimer Encapsulated CdS quantum dots as Fluorescence Probes for the Detection of Folic acid, **S. Kundu**, S. Maiti, S. Mondal, and A. Saha, National Thematic Workshop on Advances in Nanostructured Materals Applications and Perspectives (ANMAP- 2016), June 1-2, 2016, Kaziranga University, Assam.

5. Synthesis of Fluorescent Biotin-PAMAM Dendrimer-QDs Conjugate and its Complexation Study With Avidin, **S. Kundu**, S. Maiti, T. K. Das, S. Karmakar and A. Saha. Trombay Symposium on Radiation and Photochemistry (TSRP-2018), January 3-7, 2018, Bhaba Atomic Research Centre (BARC), Mumbai, India.

References

Referee 1

Dr. Abhijit Saha
UGC-DAE Consortium for Scientific Research, Kolkata Center,
III/LB-8, Bidhannagar, Saltlake,
Kolkata – 700098, India.
E-mail: abhijit@alpha.iuc.res.in.
Ph.: +91-33-23351866
Fax: +91-33-23357008

Referee 2

Prof. Subhash Chandra Bhattacharya
Department of Physical Chemistry,
Jadavpur University,
Jadavpur, Kolkata - 700032, India.
E-mail: sbjuchem@yahoo.com
Phone:+919433064219
Phone: +919239323044

Referee 3

Prof. PabitraChattopadhaya
Department of Chemistry,
The University of Burdwan,
Burdwan - 713104.
West Bengal, India.
E-mail :pabitracc@yahoo.com.
Phone : 0342-2558339,
Phone : +91 9434473741