Dr. Anu George

Curriculum Vitae

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EDUCATION

Doctor of Philosophy (Ph.D.), Chemistry
IISER Thiruvananthapuram, Kerala, India 2013 - 2018

Master of Science (M.Sc.), Chemistry
Stella Maris College, Chennai, India 2009 - 2011

Bachelor of Science (B.Sc.), Chemistry
Sacred Heart College, Thevara, Kerala, India 2006 - 2009

RESEARCH EXPERIENCE

IISER Thiruvananthapuram, India from January 2013 – September 2018 (PhD work)

- Synthesis of metal nanoparticle/nanoclusters (with size less than 10 nm), plasmonic property studies, luminescence based solid state device sensing applications, structural studies using mass spectrometry and catalytic applications.

Indian Institute of Technology Madras, India from November 2010 – April 2011 (Project)

- Synthesis of freestanding composite film of gold nanocluster for the selective sensing of Cu^{2+} ions in aqueous medium. The specific sensing of Cu^{2+} is understood by XPS analysis. The stability of the composite, sensitivity to lower concentration, applicability across all anions and absence of other metal ion induced changes make this system useful for practical applications.

Indian Institute of Technology Madras, India from May 2010 – July 2010 (Summer Internship)

- Performed an investigation of gold quantum cluster-beta-cyclodextrin gel: Inclusion complexes of gold cluster with cyclodextrin were synthesized by core etching of larger particles and were simultaneously trapped inside the cyclodextrin cavity. At a particular concentration, these clusters exist in the form of gel which shows red luminescence on UV irradiation.

TEACHING EXPERIENCE

Lecturer in the department of Chemistry from August 2012 – December 2012 (MES College of Engineering)

- Worked as Lecturer in the department of chemistry for all the first year students in (Computer Science, Mechanical, Civil and Electronics and Communication) departments.

Postgraduate Supervision (Since 2014)

- Co-supervised four postgraduate students in the synthesis and characterization of nanoparticles and nanoclusters.

Undergraduate Supervision (Since 2013)

- Teaching assistantship for three undergraduate batches for the course of inorganic chemistry and laboratory practicals in inorganic and physical chemistry.
- Co-supervised six undergraduate students in the synthesis and characterization of nanoparticles and nanoclusters.

PUBLICATIONS

1. A. George, M. P. Maman, K. Bhattacharyya, S. D. Chakraborty, S. Anjusree, B. C. Das, D. Senapati, A. Datta and S. Mandal Aggregation-induced non-emissive-to-emissive switching of molecular platinum clusters *Nanoscale*, **2019**, *11*, 5914.
2. A. George, A. Sundar, A. S. Nair, M. P. Maman, B. Pathak, N. Ramanan, S. Mandal, Identification of intermediate $Au_{22}(SR)_4(SR')_{14}$ cluster on ligand induced transformation of $Au_{25}(SR)_{18}$ nanocluster, **2019** (Manuscript under revision)
3. A. George, D. Selvan, S. Mandal, Catalytic reduction of toxic nitroarenes in aqueous medium using worm-like rhodium nanoparticles. *ChemistrySelect* **2017**, *2*, 9718.
4. A. George, G. Harikrishnan, S. Mandal, Surfactant free platinum nanocluster as fluorescent probe for the selective detection of Fe (III) ions in aqueous medium. *Sensors and Actuators, B: Chemical*, **2017**, *243*, 332.
5. A. George, K. S. Asha, A. C. Reber, S. R. Biltek, A. F. Pedicini, A. Sen, S. N. Khanna, S. Mandal, Atom precise platinum-thiol crowns. *Nanoscale* **2015**, *7*, 19448. (Selected as back cover page of the journal)
6. A. George, H. K. Choudhary, B. Satpati, S. Mandal, Synthesis, Characterization and optical properties of ligand protected indium nanoparticles. *Phys. Chem. Chem. Phys.* **2015**, *17*, 7109. (Selected as back cover page of the journal)
7. A. George, E. S. Shibu, S. M. Maliyekkal, M. S. Bootharaju, T. Pradeep, Luminescent, freestanding composite films of Au15 for specific metal ion sensing. *ACS Appl. Mater. Interfaces* **2012**, *4*, 639.
8. K. S. Asha, P. R. Kavyasree, A. George, S. Mandal, The role of solvents in framework dimensionality and their effect on band gap energy. *Dalton Transactions* **2015**, *44*, 1009.

Book Chapter

9. Anu George and Sukhendu Mandal. **2014**. "Atom Precise Metal Nanocluster. In. Prabhakar Misra. ed. Applied Spectroscopy and the Science of Nanomaterials." Springer

PAPER PRESENTATIONS

- International Conference on Nanoscience and Technology (2016) IISER Pune. (Poster Presentation)
- International Symposium on Clusters, Cluster-Assemblies and Nanomaterials (2015), Thiruvananthapuram. (Poster Presentation and a part of students organizing committee)
- Second International Conference on Mass Spectrometry (2015), M. G. University, Kerala. (Poster Presentation)
- International Conference on Structural Chemistry of Molecules and Materials (2014), CRNN, Kolkata. (Poster Presentation)
- Awareness programme on Nuclear Technology (2010) Indira Gandhi centre for atomic research, Kalpakkam.

PROFFESIONAL SKILLS

- Working experience with Matrix Assisted Laser Desorption Ionisation Mass spectrometry (MALDI-MS).
- Fluorescence spectroscopy (especially quantum yield measurements, temperature dependent fluorescence, solid state fluorescence, sensing studies *etc*.)

- UV Vis absorption spectroscopy
- Time Correlated Single Photon Counting Spectroscopy (TCS-PC).
- Infrared Spectroscopy
- Thermo gravimetric analysis
- Data interpretation of Transmission electron microscopy, Scanning electron microscopy, X-ray photon spectroscopy, Powder X-ray diffraction.

AWARDS

- Awarded UGC Junior/Senior Research Fellowship including eligibility for Lectureship in the national eligibility test (NET) examination conducted by University Grants Commission (UGC & CSIR).

PERSONAL DETAILS

Date of birth	: 13th April 1988
Citizenship	: Indian
Gender	: Female
Marital status	: Married
Religion	: Christian
Languages Known	: English, Malayalam (mother tongue) & Tamil

Permanent Address

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Perumanoor P.O.
Kochi-682015, Kerala, India.