Sanchari Chowdhury

Professional Preparation

National Institute of Technology, Durgapur, India, Chemical Engineering, B.E. 2000
Indian Institute of Technology, Roorkee, India, Chemical Engineering, M.Tech. 2002
University of South Florida, Tampa, Chemical Engineering, Ph.D. 2010
Carnegie Mellon University, Pittsburgh, Chemistry, Postdoctoral Res. Assoc. 2010-2012

Appointments

Assistant Professor, Department of Chemical Engineering, New Mexico Institute of Mining and Technology, Socorro, NM (8/2015 to present).
Assistant Professor, Materials Engineering, New Mexico Institute of Mining and Technology, Socorro, NM (8/2015 to present).
Visiting Assistant Professor, Department of Chemical Engineering, New Mexico Institute of Mining and Technology, Socorro, NM (8/2014 to 5/2015).
Postdoctoral Research Associate, Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA (08/2010 to 8/2012).
Research Assistant, Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, FL (1/2006 to 5/2010).
Lecturer, Department of Chemical Engineering, Madhav Institute of Technology & Science, Gwalior, India (08/2002 to 12/2005).

Recent patent and publications:

1. Pan,H; Steiniger,A; Heagy,M.D. and Chowdhury,S. Efficient production of formic acid by simultaneous photoreduction of bicarbonate and oxidation of glycerol on gold-TiO_2 composite under solar light,J. CO_2 Util, 2017, 22,pp 117-123.
2. Pan H, Chowdhury,S. Premachandra, D., Olguin,S. and Heagy,MD. Semiconductor Photocatalysis of Bicarbonate to Solar Fuels: Formate Production from Copper (I) Oxide, ACS Sustainable Chem. Eng., Just Accepted Manuscript
3. Choudhury, P; Ravavarapu, L; Dekle, R; Chowdhury, S "Modulating Electronic and Optical Properties of Monolayer MoS_2 Using Non-Bonded Phthalocyanine Molecules" J. Phys. Chem. C, 2017, 121 , pp 2959–2967,
4. Peteanu, L; Chowdhury, S; Wildeman, Jurjen; Sfeir, M "Exciton-Exciton Annihilation as a Probe of Inter-Chain Interactions in PPV-Oligomer Aggregates" J. Phys. Chem. B, 2017, 121, pp 1707–1714
5. Bhethanabotla,V.R. and Chowdhury,S. "Alloy nanoparticles for metal enhanced luminescence." U.S. Patent No. 9,005,890 (2015)
6. Chowdhury, S; Wu, Z; Jaquins-Gerstl, A.; Liu, S., Dembska, Armitage, B.A.; Jin,R. and Peteanu, L."Wavelength Dependence of the Fluorescence Quenching Efficiency of Nearby Dyes by Gold Nanoclusters and Nanoparticles: The Roles of Spectral Overlap and Particle Size" J Phys Chem C, 115, 20105–20112(2011).
7. Chowdhury, S.; Bhethanabotla, V. R., and Sen, R. “Effect of Ag-Cu Alloy Nanoparticle Composition on Luminescence Enhancement/Quenching.” J Phys Chem C 113 13016-13022 (2009).
8. Chowdhury, S.; Bhethanabotla, V. R. and Sen, R. “Silver-copper alloy nanoparticles for metal enhanced luminescence.” Appl. Phys. Lett. 95 131115-1-3 (2009).
9. Chowdhury, S; Bhethanabotla. V. R. and Sen, R. “Quenching of fluorescence from CdSe/ZnS nanocrystal QDs near copper nanoparticles in aqueous solution" Plasmonics,6,735-740,(2011).

10. Uygun, A., Oksuz, L., Chowdhury, S., Bhethanabotla, V. “Fluorescence study of protein immobilization based on poly(4-hydroxyphenyl thiophene-3-carboxylate) coated electrodes” Mater. Sci. Eng., C, 30 868–872 (2010).

Synergistic Activities

1. Mentoring diverse research group: Presently our research group includes four graduate students and five undergraduate students. Three of these students are under-represented minority (URM) students, and three of them are female students. One of the students is Native American, and two students are Hispanic, and most importantly five are female students.

2. Teaching and training: I have developed a new course focused on fundamental properties of nanomaterials. I teach this class to both graduate and undergraduate students. I have been actively involved in mentoring undergraduate students pursuing interdisciplinary capstone design projects in different departments including Chemical Engineering, Mechanical Engineering, and Biomedical Science. I have worked with several junior designs and senior design teams on different projects such as “Design of photoreactor for the degradation of an organic dye,” “Measuring oxygen diffusion in lipid using fluorescence microscopy” and “Design a plant for the synthesis of photocatalytic semiconductors.”

3. K-12 outreach activities:I have participated as a judge in the NM Science Fair for elementary and middle school students. In the last summer and also this summer I conducted two days nanotechnology workshop for seventh-grade female students. The workshop was a part of the NM Tech Trek camp workshop a program of AAUW. The demographics of the attendees and staff and volunteers mirror the ethnic diversity of the state. In 2017, the largest percentage of the campers were of Hispanic origin, followed by those of non-Hispanic Caucasian descent, 15% Native American and the rest other minority groups.

4. Honors: Distinguished faculty award, Chemical Engineering Department, NMT, 2017, Distinguished graduate achievement award, University of South Florida, Tampa, 2010, Best National Conference Paper Award, Composites & Polycon, Tampa (2007), Academic Honor Scholarship, National Institute of Technology, Durgapur, India

5. Service to the profession:

Served as a reviewer for different journals including Advanced functional materials, Materials Science and Engineering C, Chemical Communication, IEEE Sensors Journal and Renewable energy. Presented numerous talks at the professional level including invited talks at the University of New Mexico and New Mexico State University. Served in organizing a committee of RioGrande Advanced Material Symposium 2016, Albuquerque. Serve as co-chair for AIChE 2017 Annual Meeting, "Nanoelectronic and Photonic Materials" subsection of Materials Engineering and Sciences Division. Members of Material Research Society (MRS) and American Institute of Chemical Engineers (AIChE)