

Shruti Hegde

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Department of Chemical Engineering, University of Utah

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Education

Expected 05/2020 Ph.D.

University of Utah

Salt Lake City, UT

- Low-cost Particulate Matter and Volatile Organic Compound Sensors for Indoor and Outdoor Air Quality Monitoring.
- Advisor: Kerry E. Kelly

06/2013

B.S.

Dayananda Sagar College of Engineering

Bangalore, India

- Design Studies of an Alkaline Electrolyzer for Aerospace Applications.
- Advisor: G. Jagadeesh (IISC Bangalore)

Research Experience

8/16–Present Graduate Research Assistant

University of Utah

Salt Lake City, UT

- Developing low-cost nanotube sensors for monitoring fenceline VOC concentration characterizing indoor and outdoor PM levels using a network of sensors.

9/13–6/15

Research Assistant

Indian Institute of Science

Bangalore, India

- Generation of free-standing conducting nanofibers of PEDOT: PSS by electrospinning. Optimization of RF-magnetron sputtering of ITO for flexible photo-voltaic application.

2/13–6/13

Undergraduate Researcher

Indian Institute of Science

Bangalore, India

- Built a new alkaline electrolyze system for hydrogen generation in laboratory confinement that is simple, efficient and safe.

Technical Skills

Synthesis

- Nanotubes via electrochemical synthesis, Nanofibers via electrospinning

Characterization/clean-room techniques

- SEM, AFM, XRD, Profilometer, Spectroscopic Ellipsometry, Contact Angle, Cyclic Voltammetry, Photolithography

Spectroscopic/purification techniques

- FT-IR, UV-Vis, Column chromatography, TLC

Computer skills

- OriginPro, AutoCAD, Autodesk Inventor, Matlab, Chemkin, Avagadro, Burai

Publications

2020

Indoor Household Particulate Matter Measurements Using a Network of Low-cost Sensors S Hegde, KT Min, J Moore, P Lundrigan, N

Patwari, S Collingwood, ...

Aerosol and Air Quality Research

2017

Portable High Surface Area TiO₂ Nanotube Array Sensor for the Detection of Benzene at Room Temperature S Hegde, S Mohanty, KE

Kelly

Meeting Abstracts

2014

Synthesis, characterization, AC conductivity, and diode properties of polyaniline–CaTiO₃ composites AS Roy, SG Hegde, A Parveen

Polymers for advanced technologies

2014

Fabrication of free-standing PEDOT: PSS nanofiber mats using electrospinning KK Khanum, S Hegde, PC Ramamurthy

Presentations

Research Talks

- 05/2017 Portable High Surface Area TiO₂ Nanotube Array Sensor for the Detection of Benzene at Room Temperature 231st Electrochemical Society (ECS) Meeting
New Orleans, LA
- 06/2018 Household Indoor Particulate Matter Measurement Using a Network of Low-Cost Sensors International Network of Environmental Forensics (INEF) 2018
Salt Lake City, UT
- Student Presenter Award 5th Place
- 10/2018 Household Indoor Particulate Matter Measurement Using a Network of Low-Cost Sensors 35th Annual Utah Conference on Safety & Industrial Hygiene
Salt Lake City, UT

Posters

- 2/17 Portable TiO₂ Nanotube Sensor for the Detection of Benzene at Room Temperature Global Change & Sustainability Center Symposium 2017
Salt Lake City, UT
- 3/17 Portable TiO₂ Nanotube Sensor for the Detection of Benzene at Room Temperature Air Quality: Science for Solutions 2017
Salt Lake City, UT
- 3/18 Indoor Particulate Matter Measurement Using a Network of Low-Cost Sensors Global Change & Sustainability Center Symposium 2018
Salt Lake City, UT
- 4/18 Indoor Particulate Matter Measurement Using a Network of Low-Cost Sensors Air Quality: Science for Solutions 2018
Salt Lake City, UT

Teaching Experience

- 08/2017-12/2017 Chemical Engineering Tutor
- Course Taught: Thermodynamics II
 - Guest lectures on thermodynamic cycles and energy systems