Shruti Hegde

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, Auto CAD, Autodesk Inventor, Matlab, Chemkin, Avagadro, Burai

Publications

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.

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Synthesis, characterization, AC conductivity, and diode properties of polyaniline–CaTiO3 composites, *AS Roy, SG Hegde, A Parveen*, Polymers for advanced technologies.

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

Portable High Surface Area TiO 2 Nanotube Array Sensor for the Detection of Benzene at Room Temperature, *S Hegde, S Mohanty, KE Kelly*.

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

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