# Souvik Ghosh

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*Education*

**Doctor of Philosophy (Ph.D) in Chemical Engineering** **2011 –**
Department of Chemical and Biomolecular Engineering
Case Western Reserve University

**Master of Technology (M.Tech.) in Materials Science and Engineering** **2009 – 2011**
Materials Science Center
Indian Institute of Technology, Kharagpur, India

**Master of Science (M.S.) in Physics** **2007 – 2009**
Department of Physics
Bose Institute and St. Xavier's college, Kolkata, India

**Bachelor of Science (B.S.) in Physics with Honors** **2004 – 2007**
Department of Physics
St. Xavier's college, Kolkata, India

**Diploma in Software Technology** **2004 – 2006**
CMC limited, Kolkata, India

*Research Experience*

**Graduate Research Assistant** **2012 –**
Sankaran Lab, Department of Chemical and Biomolecular Engineering
Case Western School of Engineering, Cleveland, Ohio

**Research Assistant** **2010 – 2011**
Jacob Lab, Materials Science Center
Indian Institute of Technology, Kharagpur, India

**Research Assistant** **2008 – 2009**
Center for Astroparticle Physics and Space Science
Bose Institute, Calcutta, India

*Teaching Experience*

**Teaching Assistant** **2012 – 2013**
Department of Chemical and Biomolecular Engineering
Case Western Reserve University, Cleveland, Ohio

*Publications*

1. **S. Ghosh**, R. Yang, M. Kaumeyer, C. Zorman, S. Rowan, P. X-L Feng, & R. M. Sankaran (2014). Fabrication of Electrically Conductive Metal Patterns at the Surface of Polymer Films by Microplasma-Based Direct Writing. *ACS Appl. Mater. & Interfaces*, **6**, 3099.

2. **S. Ghosh**, B. Bishop, I. Morrison, R. Akolkar, D. Scherson, & R. M. Sankaran (2015). Generation of a direct-current, atmospheric-pressure microplasma at the surface of a liquid water microjet for continuous plasma-liquid processing *J. Vac. Sci. Technol. A*, **33**,021312.

3. **S. Ghosh**, T. Liu, M. Bilici, J. Cole, I-Min Huang, D. Staack, D. Mariotti & R. M. Sankaran (2015). Atmospheric-pressure dielectric barrier discharge with capillary injection for gas-phase nanoparticle synthesis *J. Phys. D: Applied Phys.*, *Accepted, in press.*

4. **S. Ghosh**, L. Yu, R. Yang, R. Akolkar, C. Zorman, P. X-L Feng, & R. M. Sankaran (2015). Controlled patterns of microplasma-reduced silver nanoparticles engraved on the surface of flexible films, (*In preparation*).

*Conference Presentations*

1. **S. Ghosh**, R. Yang, A. Barnes, C.A. Zorman, P. X.-L. Feng, & R.M. Sankaran. *Single step conversion of metal/polymer films to flexible, electrically conductive patterns by a scanning atmospheric-pressure microplasma process.* Oral presentation at AVS 61st symposium, Baltimore, MD(2014).

2. B. Bishop, **S. Ghosh**, I. Morrison, D. Scherson, R. Akolkar, & R.M. Sankaran. *A continuous plasma-liquid interface formed by a laminar flow liquid water jet and atmospheric-pressure microplasma.* Poster presentation AVS 61st symposium, Baltimore, MD(2014).

3. **S. Ghosh**, R. Yang, C.A. Zorman, P. X.-L. Feng, & R.M. Sankaran.*Reactions between plasma discharges and polymer films containing metal precursors.* Oral presentation at the annual meeting of the Electrostatics Society of America, (2014) University of Notre-dame, IN.

4. **S. Ghosh**, & R.M. Sankaran. *Elucidating the role of gas-phase electrons in the plasma reduction of metal ions for fabrication of metal nanoparticles embedded in polymer films* Poster presentation at AVS Ohio chapter meeting, University of Dayton, (2013).

*Awards and Honors*

**AVS PSTD travel award** for AVS 60th and 61st symposia. **2013, 2014**

**AVS Ohio chapter** meeting, University of Dayton, Best Student Poster. **2013**

**Electrostatics Society of America** conference, 2nd Best Student Presenter. **2014**

**Electrostatics Society of America** conference, Best Student Presenter. **2013**

*Professional activities*

**Reviewer:**

- ACS Applied Materials and Interfaces
- Materials Science and Engineering B

**Professional affiliations:**

- American Vacuum Society
- Electrostatics Society of America

**Short courses**

1. Short course on organic electronics at the Indian Institute of Technology, Kanpur, India (2010).
2. Winter school on astroparticle physics, organized by Bose Institute and Tata Institute of Fundamental Research, Darjeeling, India (2007).
3. Summer School in theoretical condensed matter physics at Harish Chandra Research Institute, India (2007).

*Technical Skills*

1. **Computational Skills**

- **Languages**: C, C++, C#, Fortran 90, Visual Basic
- **Software**: Origin, LabView, Matlab, Fluent
- **Web Design**: HTML, CSS, VB Script
- **Graphics Editors**: Autodesk 3Ds Max, Autocad, Solidworks, Adobe Creative Suite

2. **Hardware Development**

- Custom hardware development skills using open-source platforms like Arduino and Raspberry Pi