Curriculum Vitae

Dr. Shekhar Dattatray Shinde

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Objective

- I wish to work at a place that gives prime importance to the fundamental aspects of science, which has a commitment to society and where researchers can grow both scientifically and professionally.

Academic Qualification

Institute	Division	Degree	Duration
University of Bordeaux, Bordeaux, France.	LCPO	Postdoctoral Research Fellow	December 2018 to till the date
Georgetown University, Washington DC, USA	Institute for Soft Matter Synthesis and Metrology	Postdoctoral Research Fellow	January 2017-June 2018
National Chemical Laboratory, Pune, India	Polymer Science and Engineering Division	Ph.D.	April 2012 - March 2017
Modern College of Arts, Science and Commerce, Pune University, Pune, India	Organic Chemistry	Master of Science (M.Sc.)	July 2006 - April 2008
New Arts, Commerce, and Science College, Parner, India.	Chemistry	Bachelor of Science (B.Sc.)	June 2003 -April 2006

Research Interest

- Multimodal sensing polymer transistors for cell and micro-organ monitoring.
- Preparation of dynamic π-conjugated ionic network gels (π-PIN gels) and study of mechanical, thermal and optical properties for their applications in stretchable and flexible organic electronics. (Postdoctoral Research Work).
- Synthesis of functional homo, random and block copolymer materials via different polymerization techniques such as controlled radical polymerization involving ATRP, GRIM, Suzuki, Wittig, redox polymerization by using emulsion/interfacial/dispersion method.
- Study of the non-covalent self-assembly of various donor conjugated polymers with acceptor π- functional materials and their morphological impact on sensor and optoelectronic application.
- Interested in learning the new advance techniques in the area of polymer chemistry and their real life applications.

Research Experience

- Multimodal sensing polymer transistors for cell and micro-organ monitoring (Tenure duration: December 2018 to till the date)
- Recently worked as Post-Doctoral fellow in Georgetown University, Washington DC (Tenure duration: - January 2017 to June 2018).
- Completed Ph.D. work at "National Chemical Laboratory", Pune, Maharashtra, India. (Tenure duration: - April, 2012 to December 2016).
- Worked as Project Assistant in "National Chemical Laboratory", Pune, Maharashtra, India on a project entitled "Development of Perylene Bisimide Based n-type Semiconducting Materials for Optoelectronic Applications" sponsored by Department of Science and Technology (DST), Delhi, India. (Tenure duration: - May 2011 to April 2012).
- Worked as Project Assistant in "Indian Institute of Science, Education and Research", Pune, Maharashtra, India on a project entitled, "Development of Electrically Conducting Polyaniline Nano-Electronics", a project sponsored by Department of Science and Technology (DST), Delhi, India. (Tenure duration: - December 2008 to April, 2011).
- Completed the M.Sc. degree project entitled as "Synthesis, characterization and photo-physical properties of dyes" in Bhabha Atomic Research Centre, Trombay, Mumbai.

Instruments Expertise

- **Experience in handling various instruments as listed below:**
  1) Instron mechanical tester.
  2) Rheometer (Anton Par).
  3) Atomic Force Microscope (NTEGRA Prima).
  4) Scanning Electron Microscope.
  5) Small angle X-ray scattering (SAXS- Bruker Nanostar).
  6) Wide angle X-ray diffractometer (Bruker D8 advance and Rigaku).
  7) Thermal Gravimetric Analyzer (Perkin Elmer STA 6000).
  8) Gel Permeation Chromatography (GPC- Malvern, Agilent and Wyatt).

9) Differential Scanning Calorimeter (DSC-TA Q20).
10) Dynamic Light Scattering (DLS-Malvern Nano-ZS 90).
11) Low Volume Nano ITC (TA).
12) Conductivity meter (Keithley).
13) Cyclic Voltammeter.
14) Viscometer (Scott)
15) MALDI TOF-TOF (MDS SCIEX).
16) UV-vis spectrophotometer (Perkin Elmer Lambda 45, Varion).
17) Fluorescence spectrophotometer and TCSPC set up (Fluorolog).
18) Combi Flash Chromatographic Instrument.
19) UV irradiation set up (DYMAX Blue Wave).
20) GC-MS (Schimadzu GC 2010).
21) Optical Polarized Microscope (Leica DM 2500, Nikon Ti E inverted).
22) ATR-IR (Nicolet 6700 and Bruker Alpha-E).
23) NMR (Bruker 400MHz)

Publications

8) "Synthesis of Functionalized Polythiophene Block and Random Copolymers for Donor-acceptor Self-assembly Approach" **Shekhar Shinde**, A. V. Raaghesh, K. S. Narayan, and S. K. Asha *Journal of Polymer Science, Part A: Polymer Chemistry* **2018**, *56*, 1574–1583.

7) "Dynamic π-Conjugated Polymer Ionic Networks" **Shekhar Shinde**, Jenna L. Sartucci, Dorothy K. Jones, and Nagarjuna Gavvalapalli* *Macromolecules* **2017**, *50* (19), 7577–7583.

6) "Temperature Sensitive Emission Color Tuning and White Light Emission in Segmented OPV Polymer: Perylene Bisimide Supramolecular Complex" **Shekhar Shinde** and S. K. Asha* *Macromolecules* **2016**, *49* (21), 8134–8145.

5) "Self-assembly Directed Template Photopolymerization of Perylenebisimide-poly (4- vinylpyridine): Nano organization" **Shekhar Shinde**, S. K. Asha*, *Polymer* **2015,** *65*, 115-123.

4) "Covalent versus Non-Covalent Approaches in the Design of Donor-Acceptor Oligomeric and Polymeric Materials for Photovoltaic Applications" Nagesh B. Kolhe, **Shekhar Shinde**, B. Saibal, and S. K. Asha* *Organic Photonics and Photovoltaics* **2015**, *3*, 71-100.

3) "New Amphiphilic Sulfonic Acid Dopant-cum-Templates for Diverse Conducting Polyaniline Nanomaterials" **Shekhar Shinde**, M. Jayakannan*, *J. Appl. Polym. Sci.* **2012**, *127* (3), 1781-1793.

2) "Probing the Molecular Interactions at Conducting Polyaniline Nanomaterial Surface via Pyrene Dopant-cum-Fluorophore" **Shekhar Shinde**, M. Jayakannan*, *J. Phys. Chem. C* **2010**, *114*, 15491–15498.

1) "Flexible and Self-Healable Dynamic π-Conjugated Polymer Ionic Networks" **Shekhar Shinde** and Nagarjuna Gavvalapalli* (***Under preparation***).

Patent

- Asha Syamakumari, Rekha Narayan, **Shekhar Shinde** and Saibal Bhaumik; "Comb-Coil Supramolecular Cross linked Polymer" World Intellectual Property Organization, WO2013128475 (A1) -2013-09-06.

Computer and Software Knowledge

- GATAN software used to process TEM images.
- Familiar with TOPAS and EVA software for XRD pattern indexing.
- SPARTAN molecular modeling software.
- Lifetime analysis software DAS6 Analysis,
- NMR analysis software like MestReNova, Delta software, ACDLABS 12.0, molecule drawing software such as ChemDraw Ultra 11.0, ISIS draw 2.5, graph plotting software Origin Pro. 8.
- Frequent user of search engines like SciFinder Scholar, Scopus and Web of Science for literature survey.
- Completed certified course in computer programming (C, Visual basic and database).
- Completed certified course in computer hardware with internet, networking and multimedia.

Conference and Symposia

- **Poster Presentation in** "Georgetown/India Initiative Workshop" **held at Georgetown University, Washington DC on August 2017.**
- **Poster Presentation in** "ACS 254th National Meeting" **in Washington DC on August 2017.**
- **Poster Presentation in** "National Science Day Celebration 2015" **held at NCL, Pune on February 2015.**
- **Poster presentation in** "International Symposium on Polymer Science and Technology (MACRO-2015)" **held at IACS, Kolkata on January 2015.**
- **Poster presentation in** "Indo-French Workshop on Organic Photovoltaics for Solar Energy Conversion" **which was sponsored by** CEFIPRA **held in NCL, Pune on October 2014.**
- **Poster presentation in** "3rd FAPS Polymer Congress and MACRO-2013" **held at IISc, Bangalore on December 2013.**
- **Poster and oral presentation in** "2nd TAPSUN Conference" **held at CSIR-CLRI, Chennai on September 2013.**
- **Poster Presentation in** "National Science Day Celebration 2013" **held at NCL, Pune on February 2013.**
- **Participated in** "National Workshop on Polymer Solar Cells" **(NWPSC-2012) held at IISER, Pune on April 2012.**
- **Participated in** "ACS on Campus" **event at NCL, Pune on 2012.**
- **Poster presentation in** "National Conference on Advances in Polymer Science & Nanotechnology: Design and Structure" **(PSNDS-11) held at The Maharaja Sayajirao Uiversity of Baroda, Baroda on December 2011.**
- **Poster presentation in** "National Review and Coordination Meeting of NANO Mission Council" **(NSNT 2011) held at IIT, Delhi on February 2011.**

- **Oral presentation in** "11th International MACRO 2010" **Conference on Frontier of Polymers & Advanced Materials held at IIT, Delhi on December 2010.**

Awards and Fellowships

- **Senior Research Fellowship-2012:** From the Council of Scientific and Industrial Research (CSIR), New Delhi (April 2012 – March 2015).
- Best poster award in **"National Science Day Celebration 2015"** held NCL, Pune on February 2015.
- Best poster award in **"2nd TAPSUN Conference"** held at CSIR-CLRI, Chennai on September 2013.
- Best poster award in **"National Conference on Advances in Polymer Science & Nanotechnology: Design and Structure"** (PSNDS-11) held at The Maharaja Sayajirao Uiversity of Baroda, Baroda on December 2011.
- Best poster award in **"Dr. T. R. Ingle Poster Competition"** held in S. P. College, Pune on February 2008.

Personal Details

- **Date of Birth:** 18th December 1985
- **Sex:** Male
- **Nationality:** Indian
- **Marital Status:** Unmarried
- **Language Known:** English, Hindi and Marathi.

References

1) Dr. Asha S. K.
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