

Curriculum Vitae

Personal Details

Name: Dr. Sreekanth Mandati
Designation: Project Scientist 'C'
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Center for Solar Energy Materials,
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Academic Qualifications

Ph. D., Materials Science and Metallurgical Engineering, Indian Institute of Technology Hyderabad, 2015
Thesis: Fabrication of CuInSe_2 and Cu(In,Ga)Se_2 Absorber Layers by Pulse- and Pulse-reverse Electrochemical Techniques for Solar Photovoltaic Applications

M. Tech., Materials Science, Indian Institute of Technology Kanpur, India, 2010, **CPI: 10.00/10.00**
Thesis: Growth Mechanism of Carbon Nanotubes within the Cluster Volume to Surface Area Model: Experiments and Simulations

M. Sc., Physics, University of Hyderabad, India, 2008, **CGPA: 9.31/10.00**

B. Sc., Kakatiya University, Warangal, India, 2006, **Percentage: 94.77**

Honors/Awards/Fellowships

2019: Best Presentation Award (Oral) at iSAEST-12 sponsored by ACS Publications

2015: INAE Innovative Student Projects Award – Doctoral Category

2015: Dr. K. V. Rao Scientific Society's Young Scientist Award in Chemistry

2015: Tata's Post-Doctoral Fellowship from Indian Institute of Technology Bombay

2015: Excellence in Research Award at Indian Institute of Technology Hyderabad

2015: Winner of Padarth 3MT in PG category at Indian Institute of Technology, Bombay

2014: Bhaskara Advanced Solar Energy internship from the Department of Science and Technology (DST), Govt. of India, and India-U.S. Science and Technology Forum (IUSSTF)

2012: Best Poster Award at the 3rd EICOON School on Renewable and Clean Energy Sources, Kolkata, India

2010: Senior Research Fellowship from the Department of Science and Technology (DST), Govt. of India

2009: DAAD Fellowship, through the DAAD – IIT Master’s Sandwich Programme-09

2009: Academic Excellence Award from Indian Institute of Technology, Kanpur

2008: 98.67 percentile in all India GATE – Physics

2007: Qualified CSIR examination in Physics conducted by UGC under the CSIR-JRF scheme

2007: UGC Merit Scholarship during M. Sc. at University of Hyderabad

Professional Experience

August, 2016 – present: Project Scientist “C”, ARCI, Hyderabad

April, 2015 – August, 2016: Post-Doctoral Fellow, Tata Centre for Technology and Design, IIT Bombay

September, 2014 – February, 2015: Visiting Research Associate, Department of Chemical Engineering, Purdue University, USA

September, 2010 – August, 2014: Senior Research Fellow, ARCI, Hyderabad and External Ph. D. scholar at IIT, Hyderabad

September, 2009 – May, 2010: DAAD Fellow, TU Dresden, Germany

May, 2007 – July, 2007: Young Scientist Research Programme, RRACT, Indore

Patents

Bulusu V. Sarada, **Sreekanth Mandati** and Shrikant V. Joshi, A novel electrochemical method for manufacturing CIGS thin-films containing nanomesh-like structures, Patent filed, File No: 426/DL/2015, Date: 16th February, 2015

Publications

1. **Sreekanth Mandati**, Suhash R. Dey, Shrikant V. Joshi and Bulusu V. Sarada, Two-dimensional $\text{CuIn}_{1-x}\text{Ga}_x\text{Se}_2$ Nano-flakes by Pulse Electrodeposition for Photovoltaic Applications, *Solar Energy* **181**, 396 (2019).
2. **Sreekanth Mandati**, Suhash R. Dey, Shrikant V. Joshi and Bulusu V. Sarada, $\text{Cu}(\text{In,Ga})\text{Se}_2$ Films with Branched Nanorod Architectures Fabricated by Economic and Environmental-friendly Pulse-reverse Electrodeposition Route, *ACS Sustainable Chemistry and Engineering* **6(11)**, 13787 (2018)
3. **Invited Article: Sreekanth Mandati**, Prashant Misra, Bulusu V Sarada and Tata Narasinga Rao, Copper Chalcopyrites for Solar Energy Applications, *Transactions of Indian Institute of Metals* **72 (2)**, 271 (2019)
4. **Invited Article: Ho Soon Min, Sreekanth Mandati**, Ramkumar Chandran, Archana Mallik, Mohammad Arif Sobhan Bhuiyan, Deepa K G, Deposition of CuInSe_2 thin films by using various methods, *Oriental Journal of Chemistry* **35(1)**, (2019)

5. Divya B, **Sreekanth Mandati**, Ramachandraiah A, Bulusu V. Sarada, Room Temperature Pulse Electrodeposition of CdS Thin Films for Application in Solar Cells and Photoelectrochemical cells, *ECS Journal of Solid State Science and Technology* 7(8), P440 (2018)
6. **Sreekanth Mandati**, Fabrication of CuInSe₂ and Cu(In,Ga)Se₂ Absorber Layers by Pulse- and Pulse-reverse Electrochemical Techniques for Solar Photovoltaic Applications, *Physical Review D* 82 (3), 1 (2015).
7. **Sreekanth Mandati**, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Photoelectrochemistry of Cu(In,Ga)Se₂ Thin-Films Fabricated by A Novel Sequential Pulsed Electrodeposition Technique, *Journal of Power Sources* 273, 149 (2015).
8. **Sreekanth Mandati**, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Enhanced Photoelectrochemical Performance of Cu(In,Ga)Se₂/CdS Heterojunction Fabricated Using Low-Cost Methods, *Electronic Materials Letters* 11, 618 (2015).
9. **Sreekanth Mandati**, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, CuIn_{1-x}Ga_xSe₂ Thin-Film Absorber Layers for Solar Photovoltaics Fabricated by Two-stage Pulsed Current Electrodeposition, *Materials Letters* 118, 158 (2014).
10. **Sreekanth Mandati**, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Pulsed Electrodeposition of CuInSe₂ Thin Films with Novel Morphology for Solar Cell Applications, *Journal of The Electrochemical Society* 160 (4), D173 (2013).
11. **Sreekanth Mandati**, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Improved PEC performance of CIGS Thin-Films Deposited by Pulsed Electrodeposition, *Journal of Renewable and Sustainable Energy* 5, 031602 (2013).
12. **Sreekanth Mandati**, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Pulse Electrodeposition and Characterization of CIGS thin-films for Solar Cells Applications, *proceedings at Fifth ISEAC ELAC*, 558 – 561 (2013).
13. **Sreekanth Mandati**, Jens Kunstmann, Felix Börrnet, Ronny Schoenfelder, Mark Rümmeli, Kamal K. Kar and Gianauelio Cuniberti, Understanding the growth mechanism of carbon nanotubes via the “cluster volume to surface area” model, *Bulletin of American Physical Society* 55, (2010).

Book Chapter

Sreekanth Mandati, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Pulsed Electrochemical Deposition of CuInSe₂ and Cu(In,Ga)Se₂ Semiconductor Thin Films, *Semiconductors - Electrochemical Growth and Characterization*. ISBN no: 978-953-51-5589-8, 109-132, (2018).

Selected Presentations

1. Sreekanth Mandati, Prashant Misra, Divya Boosagulla, Tata Narasinga Rao and B. V. Sarada, CIGS thin films solar cells on flexible substrates by pulse electrodeposition, International Symposium on Advances in Electrochemical Science and Technology (iSAEST-12), CECRI, at Chennai, India.
2. Delivered a guest lecture titled “Physics Concepts and Advances in Solar Cells” at PVKN Govt. College, Chittoor, on 26th December, 2016

3. Sreekanth Mandati, Raman spectroscopy mapping of Cu(In,Ga)Se₂ solar absorber layers, Thermo Scientific DXR Raman Symposium – 2014, West Lafayette, USA
4. Sreekanth Mandati, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Fabrication of Stoichiometric CIGS thin-films by Pulse Reverse Electrodeposition, IUMRS – International Conference in Asia – 2013, Bangalore, India
5. Sreekanth Mandati, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Pulse Electrodeposition and Characterization of CIGS Thin-films for Solar Cell Applications, ISEAC Electroanalytical Chemistry (ELAC) – 2013, Hyderabad, India
6. Sreekanth Mandati, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Improved Photoelectrochemical Performance of CIGS Thin-Films Fabricated by Pulsed Electrodeposition, International Conference on Solar Energy Photovoltaic (ICSEP) – 2012, Bhubaneswar, India
7. Sreekanth Mandati, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Preparation of CuInSe₂ (CIS) thin films by Pulse Electrodeposition for Solar Cell applications, 3rd EICOON School on Renewable and Clean Energy Sources – 2012, Kolkata, India
8. Sreekanth Mandati, Bulusu V. Sarada, Suhash R. Dey and Shrikant V. Joshi, Electrochemical Synthesis and Characterization of CuInSe₂ thin films for Solar Cell applications, International Conference on Nano Science And Technology (ICONSAT) – 2012, Hyderabad, India
9. Sreekanth Mandati, Jens Kunstmann, Felix Börrnet, Ronny Schoenfelder, Mark Rümmeli, Kamal K. Kar and Gianauelio Cuniberti, The growth mechanism of carbon nanotubes within the “cluster volume to surface area” model, CECAM Workshop – 2010, Dresden, Germany
10. Sreekanth Mandati, Jens Kunstmann, Felix Börrnet, Ronny Schoenfelder, Mark Rümmeli, Kamal K. Kar and Gianauelio Cuniberti, Understanding the growth mechanism of single walled carbon nanotubes via the “cluster volume to surface area” model, German Physical Society (DPG) – 2010, Regensburg, Germany

Professional Training Through Workshops

- Participated in “Workshop on Electron Microscopy-2018” held at JNARDDC, Nagpur, 2018
- Attended a workshop on “Solar Resource Assessment” held at IIT Bombay, 2016
- Attended a 3-day workshop on “PV Module Reliability in Hot Climates”, held at IIT Bombay, 2015
- Participated in the Solar Energy Research Institute for India and United States (SERIUS) consortium meeting, Hyderabad, 2015
- Participated in the 3rd EICOON School on Renewable and Clean Energy Sources, Kolkata, 2012
- Attended a five-day school on “Surface Engineering: Technologies, Research and Applications” organized by T. R. Anantharaman Education and Research Foundation, at ARCI, Hyderabad, 2012
- Attended a workshop on “Frontiers of Excellence in Photovoltaic Science and Technology (FEPSAT)” which was held at IIT Bombay, 2012
- Participated in the NatFOE (National Frontiers On Engineering) workshop conducted at IIT Hyderabad, 2011
- Participated in the Low Temperature Workshop conducted at University of Hyderabad, 2008