

Dr. Sovan Kumar Panda

Assistant Professor

Department of Electronics

Date of joining: 10th April, 2014

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Education Details

- i. Ph.D., Indian Institute of Technology, Kharagpur, 2009
- ii. M.Tech., Jadavpur University, 2005
- iii. M.Sc., Jadavpur University, 2003
- iv. B.Sc., Vidyasagar University, 2001

Professional Experience

- i. INSPIRE Faculty Awardee, Central Glass & Ceramic Research Institute, Kolkata, December, 2012 to April, 2014
- ii. Assistant Professor, Department of Electronics and Communication Engineering, Shiv Nadar University, Uttar Pradesh, India, March, 2012 to December, 2012
- iii. Principal Researcher, School of Advanced Materials Engineering, Kookmin University, Seoul, South Korea, April, 2010-Nov, 2011.
- iv. Research Associate, Energy Research Unit, Indian Association for the Cultivation of Science, Kolkata, India, Sept, 2009-April, 2010 and Dec, 2011-March, 2012.
- v. Lecturer, Department of Electronics and Communication Engineering, Techno India, Salt Lake Campus, Kolkata, West Bengal, India, Feb, 2005-June, 2005.

Research Interests

- i. Nanotechnology
- ii. Energy storage: Li-ion battery
- iii. Energy generation device: Solar cells
- iv. Water splitting by photo-catalytic technique
- v. Nano-electronic devices: p-n junction, Schottky junction, Heterojunction, FETs, LEDs, Sensors etc.

Award/ fellowship & Recognition of Excellence in Research

- University Gold Medal for University first in B.Sc. from Vidyasagar University.
- National Scholarship from Govt. of India (Ministry of Education) for 2002-2003.
- Institute Fellowship for Ph.D., Indian Institute of Technology, Kharagpur, (Awarded by Ministry of Human Resource Development (MHRD), Govt. of India) for 2005-2009.
- Best Poster Award in 18th AGM of the Materials Research Society of India (MRSI), Feb 2007, NPL, New Delhi, India.
- Best Poster Award in 20th AGM of the Materials Research Society of India (MRSI), Feb 2009, SINP, Kolkata, India.
- INSPIRE Faculty Award from DST-New Delhi, 2012

Reviewer of Journals/Member of Professional Bodies

- **Life member** of *Materials Research Society*, India
- **Life member** of *Indian Science Congress*, India
- **Reviewer** of *Applied Physics Letters*, *Thin Solid Films*, *Plasmonics*

Selected Publications

Dr. Panda has published one book chapter (International), 20 peer reviewed journal papers so far.

Book Chapter

S. K. Panda and H. Shin, "Atomic Layer Deposition of Nanostructured Materials", Chapter name: 'Step coverage in ALD', Wiley-VCH, ISBN-13: 978-3-527-32797-3, 2011.

Journal Articles

1. "Fabrication of Vertically Aligned Silicon Nanowire Array for Surface Enhanced Raman Spectroscopy-Based Bio-molecular Sensors, S. Chakraborti, R. N. Basu*, **S. K. Panda***, *Plasmonics*, (2018) 13, 1057-1080, ISSN: 1557-1955
2. "Size and shape dependences of the colloidal silver nanoparticles on the light sources in photo-mediated citrate reduction technique", *Bull. Mater. Sci.*, 2018, **S. K. Panda**, S. Chakraborti, R. N. Basu, 41 (2018) 90, ISSN: 0250-4707
3. "Vertically Aligned Si Nanowire Array – A Promising Anode Material for Li-ion Battery", **S. K. Panda**, H. Shin, *Energy Env. Focus*, 2017, 6, 83-87. ISSN: 2326-3040.
4. "Synthesis of Colloidal Silver Nanoparticles by Reducing Aqueous AgNO₃ Using Green Reducing Agents", **S. K. Panda***, S. Sen, S. Roy, A. Moyez, *Mater. Today Proc.*, 2018, 5, 10054-10061. ISSN: 2214-7853.
5. "Colloidal Silver Nanoparticles Prepared by UV-light Induced Citrate Reduction Technique for the Quantitative Detection of Uric Acid", S. K. Panda, A. Maity, AIP Conference Proceedings, 1942, 050057.
6. "Electrochemical performance of amorphous and anatase TiO₂ nanotube array-based anodes fabricated by atomic layer deposition", **S. K. Panda** and H. Shin, *Mater. Res. Innov.*, 19 (2015) S5-695
7. "Reversible phase transformation of titania (anatase) nanotubes upon electrochemical lithium-intercalation observed by *ex situ* transmission electron microscopy ", **S. K. Panda**, , S. Lee, W-S. Yoon, H. Shin, *J. Power Source*. 249 (2014) 59
8. "Schottky Nanocontact on Single Crystalline ZnO nanorod Using Conducting Atomic Force Microscopy", **S. K. Panda**, S. B. Sant, C. Jacob, H. Shin, *J. Nanoparticle. Res.* 15 (2013) 1361
9. "Nanoscale Size Effect of TiO₂ (anatase) Nanotubes with Uniform Wall Thickness as High Performance Anode for Li-ion Secondary Battery", **S. K. Panda**, Y. Yoon, H.-S. Jung, W.-S. Yoon, and H. Shin, *J. Power. Source.*, 204 (2012) 162
10. "Preparation of Transparent ZnO Thin Film and its Application in UV Sensor Device", **S. K. Panda**, C. Jacob, *Solid State Electron.* 73 (2012), 44
11. "Synthesis of Step-Shaped Bismuth Nanowires – An Approach Towards the Fabrication of Self-Homojunction", **S. K. Panda**, D. Han, H. Yoo, H. Shin, H. Park, J. Xu, *Electrochem. Solid State Lett.*, 14 (2011) E21
12. "Synthesis of β -SiC Core-Sheath Nanowires by CVD Technique Using Ni as Catalyst", **S. K. Panda**, J. Sengupta, C. Jacob, *J. Nanosci. Nanotechnol.* 10 (2010) 3046
13. "Surface Enhanced Raman Scattering and Photoluminescence Properties of Catalytic Grown ZnO Nanostructures", **S. K. Panda** and C. Jacob, *Appl. Phys. A*. 96, 4, (2009) 805 (Rapid communication)
14. "Thickness Dependent Growth of Needle-Like and Flower-like ZnO Nanostructures", **S. K. Panda**, N. Singh, S. Pal and C. Jacob, *J. Mater. Sci.- Mater. Electron.*, 20 (2009) 771
15. "Patterned Silicon Wafer for Selective β -SiC Nanowire Growth", **S. K. Panda**, C. Jacob, *Adv. Mater. Res.* 67 (2009) 77
16. "ZnO Nanorod Growth with Silver Catalyst - Effect of Annealing", **S. K. Panda** and C. Jacob, *Physica E*, 41 (2009) 792
17. "A Comparative Study of the Synthesis of Carbon Nanotubes Using Ni and Fe as Catalyst", J. Sengupta, **S. K. Panda** and C. Jacob, *Adv. Mater. Res.* 67 (2009) 89
18. "Carbon Nanotubes Synthesis from Propane Decomposition on a Pre-treated Ni Over layer, J. Sengupta, **S. K. Panda**, C. Jacob, *Bull. Mater.Sci.*, 32 (2009) 135 (**Cover page article**)

19. "Catalytic Synthesis of ZnO Nanorods on Patterned Silicon Wafer -An Optimum Material for Gas Sensor", **S. K. Panda** and C. Jacob, *Bull. Mater. Sci.* 32 (2009) 493 (**Cover page article**)
20. "Growth and Luminescence Properties of Large-Scale Zinc Oxide Nanotetrapods", **S. K. Panda**, N. Singh, J. Hooda, C. Jacob, *Cryst. Res. Technol.*, 43 (2008) 751.

Project Handled:

INSPIRE FACULTY Project from DST-New Delhi, Tenure: Dec, 2012 - Dec, 2018, Fund: 35 lakh (@7lakh/year for 5 years), Status: **Completed.**