Dr. Sovan Kumar Panda
Assistant Professor
Department of Electronics, Bidhan Chandra College, Rishra, Hooghly, West Bengal, India, 712248
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Date of Joining: 10th April, 2014

Department: Department of Electronics

Category: Unreserved

Educational Details:

Degree	Major	College/University	Year of Passing
Ph.D.	Materials Science	Indian Institute of Technology, Kharagpur, India	2009
M.Tech.	Materials Engineering	Jadavpur University, India	2005
M.Sc	Electronic Science	Jadavpur University, India	2003
B.Sc (Honours.)	Electronics	Vidyasagar University, India	2001

Teaching experience:

1. 10th April, 2014 to Present, **Assistant Professor**, Department of Electronics, Bidhan Chandra College, Rishra, Hooghly, West Bengal. India, 712248

2. 19th March, 2012 to 18th December, 2012, **Assistant Professor**, Department of Electronics and Communication Engineering , Shiv Nadar University, Uttar Pradesh, India, 203207

3. Feb to June, 2005, **Lecturer**, Department of Electronics and Communication Engineering, Techno India, Salt Lake, Kolkata, West Bengal, India, 700091 (AICTE approved engineering college under West Bengal University of Technology, India)

Thesis supervised:

Name of the Degree	Name of the Institution	Title of the thesis	Name of the supervisor (s)	Year
M. Tech (Final year project thesis)	National Institute of Technology, Durgapur	Synthesis of Gold Nanoparticles and Fabrication of Plasmonic Substrate	Dr. R. N. Basu, **Dr. Sovan Kumar Panda,** Dr. Milan Maji	2014
M. Tech (Final year project thesis)	IIEST-Shibpur	$La_xSr_{1-x}Co_{0.98}Ni_{0.02}O_{3-\delta}$ (x = 0.4 to 0.8) - High Performance Cathode Materials for Intermediate Temperature Solid Oxide Fuel Cell Application	Dr. R. N. Basu, **Dr. Sovan Kumar Panda,** Dr. N. R. Bandyopadhyay	2014
M. Sc. (Final year project thesis)	Achharyya Prafulla Chandra College (West Bengal State	Synthesis of Colloidal Silver Nanoparticles by Reducing Aqueous $AgNO_3$ Using	**Dr. Sovan Kumar Panda**	2016

	University)	Green Reducing Agent		
M. Sc. (Final year project thesis)	Achharyya Prafulla Chandra College (West Bengal State University)	Synthesis of Colloidalo Silver Nanoparticles by Citrate Reduction Technique Using Various Energy Sources	**Dr. Sovan Kumar Panda**	2016
M. Sc. (Final Semester project thesis)	West Bengal State University		**Dr. Sovan Kumar Panda,** Dr. Tuhin Subhra Sarkar	2017
M. Sc. (Final Semester project thesis)	West Bengal State University		**Dr. Sovan Kumar Panda,** Dr. Tuhin Subhra Sarkar	2017

M. Tech Term paper supervised: *$La_{0.6}Sr_{0.4}Co_{0.98}Ni_{0.02}O_3$ — A high performance cathode material for inter-mediate temperature Solid Oxide Fuel Cell (IT-SOFC) application.*

Research Experiences:

INSPIRE FACULTY Awardee

Duration: 24th December, 2012 to 23/12/2018.

Title of the project: *"Fabrication of vertically aligned Si nanowire array for Surface Enhanced Raman Scattering (SERS)-based sensors"*

Postdoctoral research I

Duration: September, 2009 to April, 2010 and December, 2011 to March, 2012

Institution: Energy Research Unit, Indian Association for the Cultivation of Science, Kolkata-700032, India

Post doctoral research II

Duration: April, 2010 to November, 2011

Institution: School of Advanced Materials Engineering, Kookmin University, Seoul, South Korea, 136702

Ph.D.

Duration: July, 2005 to Nov, 2009

Institution: Materials Science Centre, Indian Institute of Technology, Kharagpur, India

Thesis title: "*Synthesis of zinc oxide and silicon carbide nanostructures and thin films"*

Research interests:

Electronic Materials
Nanotechnology
Sensors: Gas, Optical, Biological etc.
Energy storage: Li-ion battery

Energy generation device: Solar cells (p-i-n junction), Fuel cells

Water splitting by photo-catalytic technique

Nano-electronic devices: p-n junction, Schottky junction, Heterojunction etc.

Award/ fellowship & Recognition of Excellence in Research:

- **University Gold Medal** for University first in B.Sc from Vidyasagar University, West Bengal, India, 2003
- **National Scholarship** in B.Sc 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 INSA/DST, New Delhi, July, 2012

Others:

- **Life member** of *Materials Research Society*, India
- **Life member** of *Indian Science Congress*, India
- **Reviewer** of *Applied Physics Letters, Thin Solid Film*s, *Plasmonics, Talanta*
- Member of **UG Board of studies** in **Electronics**, University of Calcutta

Research Publications:

Book Chapter

1. **S. K. Panda** and H. Shin, "Atomic Layer Deposition of Nanostructured Materials", Chapter name: 'Step coverage in ALD', Wiley-VCH, ISBN-13: 978-3527327973, 2012
2. **S. K. Panda, "***The Annual Reviews in Plasmonics 2017", Chapter Name: "*Surface enhanced Raman spectroscopy-based bio-molecular detectors", Springer International Publishing, 978-3-030-18834-4, 2019

Peer reviewed journals

1. S K Panda, S Chakraborti, R N Basu, Size and shape dependences of the colloidal silver nanoparticles on the light sources in photo-mediated citrate reduction technique, *Bull. Mater. Sci.* 41 (2018) 1-7.
2. **"**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,* 13 (2018) 1057-1080.
3. "Synthesis of Colloidal Silver Nanoparticles by Reducing Aqueous $AgNO_3$ Using Green Reducing Agents", **S. K. Panda***, S. Sen, S. Roy, A. Moyez, *Mater. Today Proc.*, 5 (2018) 10054-10061.
4. A. Maity, **S. K. Panda**, Colloidal silver nanoparticles prepared by UV-light induced citrate reduction technique for the quantitative detection of uric acid, *AIP Conf. Proceed.* 1942 (1), 050057.
5. "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
6. "Vertically Aligned Si Nanowire Array – A Promising Anode Material for Li-ion Battery", **S. K. Panda**, H. Shin, *Energy Env. Focus*, 6 (2017) 83-87.

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 TiO_2 (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 Overlayer, 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

Invited Talk

S. K. Panda, "Fabrication and Applications of One-dimensional nanostructures", Webinar Internship Course on Emerging Trends in Nanomaterials for Different Device Architectures (ETNDDA-2021), 15th September to 28th November, 2021, Organized by Indian Chemical Society, Kolkata

S. K. Panda, "One-Dimensional Nanostructure Array-Based Anode Material for Li-ion Battery Application"**,** PROGRESS IN MATERIALS SCIENCE AND ENGINEERING, January-2012, IIT-Kharagpur, India, 721302