

## Personal details

Dr. Swapna Rekha Panda  
Lecturer  
Department of Chemical Engineering  
National Institute of Technology Hamirpur  
Himachal Pradesh - 177005, India

## Research Interest

Blend Polymeric membranes, Fabrication and Utilization, Clean and green energy using polymeric membranes, Desalination, Industrial effluent treatment, advanced material characterization, Wastewater Separation and Purification.

## Contact Addresses:

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SATPURA, 103, NIT Campus, NIT Hamirpur, Himachal Pradesh-177005, India  
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## Other profile links

1. Google Scholar ID: <https://scholar.google.co.in/citations?user=BTft050AAAAJ&hl=en>
2. LinkedIn ID

## Positions held

1. Lecturer, at National Institute of Technology Hamirpur from 03/08/2015 to Till date.
2. Assistant Professor at Centurion University of Technology and Management, CUTM, ODISHA, 2009-2011.
3. Sr. Lecturer at Centurion University of Technology and Management, CUTM, ODISHA, from 2006-2009.
4. Lecturer at Jagannath Institute of Technology and Management, JITM, Paralakhemundi, Odisha, from 2001-2004.

## Degrees

1. Ph.D. (Chemical Engineering): Indian Institute of Technology, Kharagpur, 2015.
2. M. Tech. (Chemical Engineering): Indian Institute of Technology, Kharagpur, 2006.
3. B. Tech. (Chemical Engineering): Indira Gandhi Institute of Technology, IGIT, Govt. Engg. College of Odisha under Utkal University, 2000.

## Fellowships, Awards & Honours

1. MHRD Scholarship for *Doctoral* Studies from 2011-2015.
2. MHRD fellowship for *Post Graduate* Studies for the year 2004-2006.
3. Received Schlumberger's Faculty for the Future Award-2016-17.

## Teaching Theory Courses:

1. Fluid Flow and Flow Measurement
2. Chemical Technology-I
3. Chemical Technology-II
4. Mass Transfer-I
5. Mass Transfer-II

6. Environmental Engineering
7. Process Engg. Economics and Plant Design
8. Process Equipment Design
9. Mechanical Unit Operations
10. Industrial Stoichiometry
11. Industrial Instrumentation and Control

#### **Laboratory Courses Taken: (Undergraduates- B Tech)**

1. Mass Transfer Laboratory
2. Fluid Mechanics Laboratory
3. Process Equipment Design Laboratory
4. Mechanical Operations Laboratory
5. Chemical Technology Laboratory-I
6. Chemical Technology Laboratory-II
7. Heat Transfer Laboratory
8. Fuel Laboratory

#### **Laboratory Courses Taken: (M. Tech)**

Membrane Separation Laboratory-1

#### **Administration**

1. Head of the Department, Department of Chemical Engineering, CUTM, Paralakhemundi, July 2009- July 2010.
2. Examination Cell Coordinator for the Department of Chemical Engineering, July 2008-July 2010.

#### **Book/Book chapters**

Nil

#### **Expert talks**

Being a resource person, delivered 15 hrs of lecture classes at Centurion university of Technology and management (CUTM) for a DST sponsored course title "Industrial instrumentation and automation" to ITI students for 15 days in the month of December 2008.

**Member of Professional Societies:** Life Member of IChE [LM 32002]  
: AIChE Member [009900179718]

#### **PUBLICATION DETAILS**

##### Patents Filed:

1. 1058/KOL/2014, dated 29/10/2014.
2. 742/KOL/2014: dated 09/07/2014.

##### Papers published in peer reviewed international journals

1. M. Mukherjee, S. R. Panda, S. De, "Adhesion resistant chitosan coated iron oxide polyacrylonitrile mixed matrix membrane for disinfection of surface water" Journal of Chemical Technology and Biotechnology, 2016, JCTB-16-0121-R1, DOI 10.1002/jctb.5019. (SCI Journal Publication).

2. S. R. Panda, S. De, Preparation, Characterization of Polyacrylonitrile/Polyurethane blend membranes, *RSC Advances*, 5(30) (2015) 23599-23612. (RSC Publication).
3. S. R. Panda, S. De, "Preparation, characterization and performance of ZnCl<sub>2</sub> incorporated Polysulfone (PSF)/polyethylene glycol (PEG) blend low pressure nanofiltration membrane, *Desalination*, 347 (2014) 52-65. (Elsevier Publication).
4. S. R. Panda, N. Bhandaru, R. Mukherjee and S. De, Ultrafiltration of Oily Waste Water: Contribution of Surface Roughness in Membrane Properties and Fouling Characteristics of Polyacrylonitrile Membranes, *The Canadian Journal of Chemical Engineering* 93 (11), 2015, 2031-2042. (Oldest Journal, Elsevier Publication).
5. S. R. Panda, S. De, Two stage nanofiltration for treatment of textile effluent, *Environmental Journal of Chemical Engineering*, 3(3), (2015) 1678-1690. (Elsevier Publication).
6. S. R. Panda, S. De, "Effects of polyacrylonitrile homopolymer molecular weight, concentration and role of polyethylene glycol as additive on the cast membranes" *Polymer engineering and science*, 54 (10) (2014) 2375-2391. (Wiley Publication).
7. S. R. Panda, M. Mukherjee, S. De, Preparation, characterization and humic acid removal capacity of chitosan coated iron-oxide- polyacrylonitrile mixed matrix membrane, *Journal of Water Process Engineering*, 6 (2015) 93-104. (Elsevier Publication).
8. S. R. Panda, S. De, Role of Polyethylene glycol with different solvents for tailor made polysulfone membranes, *Journal of polymer research*, 20 (2013) 179. (Springer Publication).
9. S. Dinda, A. V. Patwardhan, S. R. Panda and N. C. Pradhan, Kinetics of reactive absorption of carbon dioxide with solutions of aniline in carbon tetrachloride and chloroform, *Chemical Engineering Journal*, 136 (2008) 8. (Elsevier Publication).

Publications in International/National/ conferences:

1. Sanyam Jain, Swapna R. Panda, Tapas Palai, Pramod H. Borse, "Computational analysis of state for ammonia by polymath", Presented at SCHEMCON, BVRIT, 10-11 September 2016, Hyderabad.
2. Abhirai Singh, Bobby Kumar, Basant K. Sahoo, Swapna Rekha Panda, "Coal testing: its implications in steel industry", paper accepted for presentation at 69<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering towards sustainable development, Chennai, India from 27-29 December (2016).
3. Vaibhav Jaju, Bhavesh Ku. Bhardwaj, Shubham Gupta, Swapna Rekha Panda, "Comparative analysis blended coking coals: Blast furnace Steel making" paper accepted for presentation at 69<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering towards sustainable development, Chennai, India from 27-29 December (2016).
4. Rajinder Singh, Abhay Kumar, B. C. Meikap, Swapna Rekha Panda, "Preparation of inventory of point, line and area source of pollution at Champa district (Chhattisgarh)", paper accepted for presentation at 69<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering towards sustainable development, Chennai, India from 27-29 December (2016).
5. Anupam Dhiman, B. C. Meikap, Swapna Rekha Panda, "Analysis of physiochemical characteristics of soil using X-ray Fluorescence," paper accepted for POSTER presentation at 69<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering towards sustainable development, Chennai, India from 27-29 December (2016).

6. Neha Goyal, B. C. Meikap, Swapna Rekha Panda, "Assessment of ground & surface water quality in and around champa-janjgir, C.G, India", paper accepted for POSTER presentation at 69<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering towards sustainable development, Chennai, India from 27-29 December (2016).
7. Swapna Rekha Panda, Munmun Mukherjee, Sirshendu De, "Adsorptive removal of humic acids and microbes by polyacrylonitrile-chitosan composite membrane" presented at the proceedings of the International conference, AIChE, Nov 16-21, 2014, Atlanta, USA.
8. Swapna Rekha Panda, Sirshendu De, "Performance study of ZnCl<sub>2</sub> incorporated Polysulfone (PSF)/Polyethyleneglycol (PEG) blend low pressure nanofiltration membranes, presented at the proceedings of the International workshop under NEW INDIGO 2014 scheme, on "Hybrid membrane based separation processes for treatment of industrial wastewater", IIT, Kharagpur, from 01-02 April (2014).
9. Swapna Rekha Panda, Sirshendu De, "Casting and characterization of hydrophilically modified polysulfone UF membrane: Effect of solvent, presented at the International conference on Frontiers in chemical engineering, ICFCE-2013, NIT, Rourkela, India from 09-12 December (2013).
10. Swapna Rekha Panda, Sirshendu De, "Casting and characterization of hybrid polymeric membranes applied for waste water ultrafiltration, presented at the National conference, S.K.C.G. College, on 12<sup>th</sup> Aug (2013) Paralakhemundi, India.
11. Swapna Rekha Panda, Sirshendu De, Presented a Poster titled "Effects of polymer molecular weight, concentration and role of polyethylene glycol on antifouling characteristics of Polyacrylonitrile homopolymer membranes, at research Scholar's day IIT, Kharagpur, Department of Chemical Engineering on 24<sup>th</sup> June (2013).
12. Barun Kumar Thakur, Swapna Rekha Panda, Sirshendu De, "Chemically surface treatment of polysulfone UF hollow fiber membranes for removal of congoed dye at low pressure for water reclamation", published at 64<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering in synergistic growth, Bangalore, India from 27-29 December (2011) p.-89.
13. Swapna Rekha Panda, Barun Kumar Thakur, Sirshendu De, "Characterization and modification of PAN support membranes", presented at 64<sup>th</sup> Annual session of IChE CHEMCON, Chemical Engineering in synergistic growth, Bangalore, India from 27-29 December (2011) p.-90.
14. P.Pattnaik, M.K. Patro, Swapna Rekha Panda, "Alternative fuels: Reversing the effect of global warming with renewable energy", presented at the national conference on Advances in environmental engineering (AEE 2010), Pravara Rural engineering college, Loni, Maharashtra, India from 10-12 March (2010) p.-18.
15. Srikanta Dinda, Swapna Rekha Panda, Vaibhav V. Goud, Anand V. Patwardhan, and Narayan C. Pradhan, "Some aspects of CO<sub>2</sub> absorption in aromatic monoamines dissolved in non-aqueous solvents", presented at 59<sup>th</sup> Annual session IChE CHEMCON, Bharuch, India from 27-30 December (2006) p.-194.
16. Swapna Rekha Panda, "Chemical composition and antibacterial effect of five essential oils", presented at 63<sup>rd</sup> Annual session of IChE CHEMCON, Annamalainagar, India from 27-30 December (2010) p.-25.
17. Swapna Rekha Panda, "Utilization of copper devices for purifying drinking water", published at 63<sup>rd</sup> Annual session of IChE CHEMCON, Annamalainagar, India from 27-30 December (2010) p.-180.
18. Swapna Rekha Panda, "Biosorption of fluoride from aqueous solution using ULVA FASCIATA marine algae", published at 63<sup>rd</sup> Annual session of IChE CHEMCON, Annamalainagar, India from 27-30 December (2010) p.-260.

### **Work Experience in R&D Organisation's Project**

- Project Title: Preparation, characterization and performance of functionalized membrane with improved anti-fouling properties BRNS, Department of Atomic Energy (DAE), MUMBAI Govt. of India Organisation, under the scheme no. 2012/21/03-BRNS, Dt. 25-07-2012.

### **Work Experience in Consultancy Project**

- Worked on treating Microbial disinfection of surface water using membrane Technology from a research grant from SRIC, IIT Kharagpur, under the scheme no. IIT/SRIC/CHE/SMU/2014-15/40, dated 17-04-2014 and Chair Professorship, from Indian National Academy, Prof. S. De.
- Project Title: Scale up of Chloride Removal by Tailor Made Ion Selective Membrane. Funded By: TATA Steel Limited, under Supervision of Prof. S. De, Head, Department of Chemical Engineering, IIT, Kharagpur.

### **Selection committee member**

1. Faculty selection Committee of Chemical Engineering Department, at CUTM, Paralakhemundi, Odisha from July 2009- July 2010.
2. Non-Teaching staff selection Committee of Chemical Engineering Department, at CUTM, Paralakhemundi, Odisha from July 2009- July 2010.

### **Courses organized/committee member**

1. Active member as Joint Secretary for the National Conference on "National conference on Chemical Engg. Sciences and Technology" NCEST-2017 to be organized by Department of Chemical Engineering at NIT Hamirpur during March 25-26, 2017.
2. As Organizing member for the workshop on Industry Institute Interaction Programme being organized by Department of Chemical Engineering at NIT Hamirpur during October 21-22, 2016.
3. As a course coordinator for the workshop on "National Workshop on Lubricant Technology" in collaboration with Indian Petroleum University, Dehradun" being organized by Department of Chemical Engineering JITM, Odisha on 23<sup>rd</sup> February, 2010.
4. As Organizing member for the workshop on "Powder Technology in Modern Steel Making" being organized by Department of Chemical Engineering JITM, Odisha on 19<sup>th</sup> December 2008.