

# CURRICULUM VITAE

## Dr. Pradeep Kumar Samantaroy, (OES-I)

Asst. Professor of Chemistry

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### Current Professional Assignment

- Working as Asst. Professor of Chemistry, teaching **Post-Graduate & Under Graduate** CBCS syllabus as prescribed by Sambalpur University & Department of Higher Education, Odisha.

### Professional Experiences

- Aug 2023 onwards Asst. Professor of Chemistry at Govt. College, Sundargarh, Odisha.
- Oct 2016-Aug 2023 Lecturer in Chemistry at Rayagada Autonomous College, Rayagada, Odisha.
- Sep 2015-Sep 2016 Assistant Professor-Chemistry at Gandhi Group of Institutions, Gunupur, Odisha.
- Oct 2013-Jun 2015 Assistant Manager-Technical Support at Harita-NTI Ltd.(TVS group), Chennai.
- Aug 2008-Sep 2013 Research Scholar at Corrosion Science & Technology Group, Indira Gandhi Centre for Atomic Research, Department of Atomic Energy, Kalpakkam, Tamilnadu.
- Aug 2007-Jul 2008 Lecturer-Chemistry in at Gandhi Institute of Engg. & Technology, Gunupur, Odisha.
- Jul 2006 - Jul 2007 Lecturer at Vikas Educational Institution, Vishakhapatnam, Andhra Pradesh.

### Educational Qualifications

- 2008-2014: Doctor of Philosophy (Chemistry - Physical/Applied chemistry)  
Homi Bhabha National Institute, IGCAR Campus, Kalpakkam
- 2003-2005: Master of Science (Chemistry - Analytical Chemistry)  
➤ First division – 62.4 %, Berhampur University, Berhampur
- 1999-2002: Bachelor of Science (Mathematics, Physics and Chemistry Hons)  
First division with Distinction – 65.1 %, Berhampur University, Berhampur

### Ph.D. Thesis

Title of thesis: **Corrosion behaviour of materials for nuclear high level waste storage application**

Weblink to thesis: [http://www.hbni.ac.in/students/dsp\\_ths.html?nm=chem/CHEM02200804008.pdf](http://www.hbni.ac.in/students/dsp_ths.html?nm=chem/CHEM02200804008.pdf)

Shodhganga Ref: <https://shodhganga.inflibnet.ac.in/handle/10603/37684>

Supervisor: Prof. (Dr.) U. Kamachi Mudali  
Vice Chancellor  
Homi Bhabha National Institute

### Students Guided (PhD Level)

- Mrs. Sunita Kumari Mishra, “Pterocarpous marsupium and Diospyros melanoxyton as Green Corrosion Inhibitors for Protection of Automotive Components in saline media” thesis to be submitted in 2024 at Veer Surendra Sai University of Technology, Burla, Odisha.

### Students Guided (PG Level)

- Lopamudra Maharana, PG project, “Analysis of ground water quality: A case study of Rayagada and Kolnora block” during July 2020.
- Aditya Sahu, PG Project, “Monitoring of sulphur dioxide, nitrogen dioxide, PM10 and PM2.5 present in ambient air of residential area of Rayagada” during July 2020.
- Saron Sananayak, PG project, “A study on estimation of nitrogen, sulphur and some micronutrients in the fertilizers received at district Agriculture office, Rayagada” during July 2020.
- P. Ipsita, PG Project, “Ground water quality testing of Rayagada and Kashipur block”, during July 2020.
- B. Lavanya, PG Project, “A study on estimation of phosphorus, potassium and some micronutrients in the Fertilizers received at district agricultural office, Rayagada” during July 2020.
- Asmita Jena, PG Project, “pulping technology in pulp & paper industry” during July 2021
- Shaik Badiruddin, PG Project, “pulp bleaching process in paper industry” during July 2021
- Sibani Hota, PG Project, “A study on estimation of nitrogen and some micronutrients in the fertilizers received at fertilizer quality control laboratory under chief district agriculture office, Rayagada” during July 2021
- Anjali Panigrahi, PG Project, “Study on the Bark of Pterocarpus Marsupium as Green Corrosion Inhibitor for the Protection of Mild Steel”, during June 2022
- Sekhar Suman Panda, PG Project, “Study on Diospyros melanoxyton leaf as Green Corrosion Inhibitor for the Protection of Mild Steel” during June 2022
- Rajesh Kumar Swain, PG Project, “Study on Diospyros Melanoxyton Bark as Green Corrosion Inhibitor for the Protection of Mild Steel” during June 2022
- Ipsa Mishra, PG Project, “Study on Pterocarpus marsupium Leaf as Green Corrosion Inhibitor for the Protection of Mild Steel” during June 2022
- Subhrakeshi Das, PG Project, “ECF bleaching process and principle in pulp and paper making process” during June 2022
- Jyotirmayee Das, “Study on Diospyros melanoxyton leaf as Green Corrosion Inhibitor for the Protection of Mild Steel” in 2023
- Susri Subhrani Mishra, Study of corrosion inhibition properties of Diospyrous melanoxyton’s bark for protection of mild steel in saline media” in 2023
- Ashutosh Pradhan, “Study on Pterocarpus marsupium Leaf as Green Corrosion Inhibitor for the Protection of Mild Steel” in 2023
- Rasmitha Mallika, Study on “Dillenia Indica Fruit” as a Green Corrosion Inhibitor for the Protection of Mild Steel in Saline Media” in 2023
- Sthitha Prangya Majhi, Study on ‘Dillenia Indica’ Leaf as Green Corrosion Inhibitor for the Protection of Mild Steel” in 2023
- Niranjana Naik, Study on Pterocarpus Marsupium Bark as Green Corrosion Inhibitor for the Protection of Mild Steel” in 2023
- Sapna Sahu, “Phytochemical Studies of Diospyros melanoxyton leaf and bark” in 2024
- Bichitrananda Dhal, Phytochemical study of Pterocarpus marsupium Leaf and Bark” in 2024

## Fellowships

- Department of Atomic Energy-JRF in 2008
- Department of Atomic Energy-SRF in 2010
- International Travel Fellowship to attend conference at Taiwan, awarded by Department of Science & Technology, Government of India in 2012

## Experimental and Analytical Skills

- Corrosion study using potentiodynamic polarization and electrochemical impedance spectroscopy techniques
- Intergranular corrosion study using Huey Test
- Characterization of passive film by X-ray Photoelectron Spectroscopy
- Microstructural characterization by optical and Scanning Electron Microscope
- Development of rust preventives and corrosion inhibitors for industrial application
- Study of green corrosion inhibitors
- Testing of industrial components for corrosion study in salt spray chamber, humidity chamber etc.

## Instruments Handled

- Scanning Electron Microscopy
- Potentiostat (for corrosion testing)
- Optical microscopy
- UV-Visible spectrometer
- pH meter, Conductance meter, Potentiometer
- Photocolorimeter
- BOD & COD instrument
- Salt spray chamber
- Humidity chamber
- Viscometer
- Flash point test apparatus

## Publications in International Referred Journals

1. P. K. Samantaroy, S. Girija, R. Paul, U. Kamachi Mudali, Baldev Raj: Corrosion behavior of Alloy 690 and 693 in simulated nuclear high level waste medium, Journal of Nuclear Materials, Vol. 418, Issue: 1-3 (2011) p: 27-37.  
**Impact factor: 2.106, ISSN: 0022-3115**
2. P. K. Samantaroy, S. Girija, U. Kamachi Mudali: Effect of heat treatment on corrosion behavior of Alloy 690 and 693 in simulated high level waste medium, Corrosion, Vol. 68, Issue: 4, (2012) p: 046001-1 to 046001-13.  
**Impact factor: 2.908, ISSN: 0010-9312**
3. P. K. Samantaroy, S. Girija, N. G. Krishna, U. Kamachi Mudali, Corrosion behavior of Alloy 600 in simulated high level waste medium, Journal of Materials Engineering and Performance, Vol. 22, (2013) p: 1041-1053.  
**Impact factor: 0.981, ISSN: 1059-9495**

4. P. K. Samantaroy, S. Girija, R. Kaul, U. Kamachi Mudali, Enhancement of corrosion resistance of nickel based superalloys by laser surface melting, Surface Engineering, Vol: 29 (2013) p: 522-530.  
**Impact factor: 1.51, ISSN: 0267-0844**
5. P. K. Samantaroy, Girija Suresh, U. Kamachi Mudali, Effect of heat treatment on pitting corrosion resistance of nickel based superalloys in acidic chloride medium”, International Journal of Material Science, Vol: 3 (2013) p: 170-178.  
Impact factor: NA, **ISSN: 2226-4531**
6. P. K. Samantaroy, S. Girija, Corrosion investigation of nickel base superalloys in simulated high level waste medium using electrochemical impedance spectroscopy, Indian Journal of Chemical Technology, Vol: 27 (2020), pp-67-72  
**Impact factor: 0.76, ISSN: 0975-0991**
7. P. K. Samantaroy, Intergranular corrosion behavior study of nickel base superalloys Alloy 600, 690, 693, International Journal of Engineering Research & Technology, Vol: 9, Issue 1 (2020), p: 470-474.  
Impact factor: NA, **ISSN: 2278-0181**

#### **Books & Reports**

1. Strategies for Corrosion Prevention (CORSYM-2013), Editors: U. Kamachi Mudali, **Pradeep Kumar Samantaroy**, Rani P. George, N. Rajendran & Baldev Raj.
2. Application of Indigenous nickel alloys for storage of nuclear high-level waste, IGC Annual Report, 2010, Article: IV.19, Page 132-133.

#### **Papers presented in Conferences/Symposiums**

1. P. K. Samantaroy, S. Girija, R. Paul, U. Kamachi Mudali, Corrosion resistance of Ni 690 and Ni 693 alloys in simulated nuclear high level waste, Oral presentation at Surface Modification and Technologies - XXIII, Nov. 2-5, 2009, Mamallapuram.
2. P. K. Samantaroy, S. Girija, N. G. Krishna, U. Kamachi Mudali, Corrosion behavior of Inconel 600 alloy in simulated nuclear high level waste medium, Oral presentation at Chemistry Research Scholars Meet 2011, 14-15 July, 2011, IGCAR, Kalpakkam.
3. P. K. Samantaroy, S. Girija, U. Kamachi Mudali, Effect of heat treatment on corrosion behavior of Alloy 690 and Alloy 693 in simulated nuclear high level waste medium, Poster presentation at International Conference on Advanced Materials-2011, 12-16 Dec 2011, Coimbatore.
4. P. K. Samantaroy, S. Girija, U. Kamachi Mudali, Pitting corrosion behavior of heat treated nickel based superalloys in acidic chloride medium, Oral presentation at 16<sup>th</sup> National Congress on Corrosion Control (16<sup>th</sup> NCCC), 23-25 Aug, 2012, Kolkata.
5. P. K. Samantaroy, S. Girija, U. Kamachi Mudali, Corrosion behavior of Alloy 600 in simulated nuclear high level waste medium, Poster presentation at 5<sup>th</sup> training program on Paints and Coating, 13-15 July 2012, Chennai.
6. P. K. Samantaroy, S. Girija, R. Kaul, U. Kamachi Mudali, Corrosion behavior of laser surface melted nickel-based superalloys in simulated nuclear high level waste medium, 16<sup>th</sup> Asian Pacific Corrosion Control Conference, 21-24 Oct. 2012, **Kaohsiung, Taiwan**.

7. P. K. Samantaroy, S. Girija, U. Kamachi Mudali, Studies on nickel base superalloys for nuclear high level waste storage application, International Corrosion Prevention Symposium for Research Scholars, 28 Feb-02 Mar 2013, Chennai.
8. P.K. Samantaroy, Material selection for nuclear high level waste storage application and its impact on environment, National Seminar on Eco-friendly Approaches to Control Biohazards, 22-23 June, 2019, Rayagada, Odisha.
9. Jyotirmayee Das, Sushri Subhrani Mishra, Pradeep Kumar Samantaroy, 'Diospyros Melanoxylon' as a Green Corrosion Inhibitor for the Protection of Mild Steel in Saline Media, National Conference in recent advances in chemical science, March 19-20, 2023.
10. Ashutosh Pradhan, Niranjana Naik, Pradeep Kumar Samantaroy, 'Pterocarpus Marsupium' as a Green Corrosion Inhibitor for the Protection of Mild Steel in Saline Media, National Conference in recent advances in chemical science, March 19-20, 2023.
11. Sthita Pragnya Majhi, Rasmita Malika, Pradeep Kumar Samantaroy, 'Dillenia Indica' as a Green Corrosion Inhibitor for the Protection of Mild Steel in Saline Media, National Conference in recent advances in chemical science, March 19-20, 2023.

#### **Orientation Courses/ Workshops/Theme Meetings/Seminars Attended**

1. UGC Sponsored Refresher Course in Chemistry organized by Savitribai Phule Pune University during 18<sup>th</sup> to 31<sup>st</sup> Oct 2021.
2. UGC Sponsored Orientation Programme at Jawaharlal Nehru Technological University, Hyderabad, from 20<sup>th</sup> Jan to 8<sup>th</sup> Feb, 2020
3. One Year Orientation Coursework of Ph.D. Programme during Sep 2008 to Jun 2009 in Training School, IGCAR, Kalpakkam, India.
4. National workshop on "Radiochemistry and Application of Radioisotopes", 5<sup>th</sup> to 10<sup>th</sup> Oct. 2015 at Amity University, Noida Campus, NCR Delhi.
5. Science Academy's refresher course in recent advances in chemistry (*Topics: Quantum chemistry, Computational chemistry, Spectroscopy, Group theory, Thermodynamics, Electrochemistry, Green chemistry*) held at BIT Mesra (Deoghar Campus, Deoghar), Jharkhand from 14<sup>th</sup> to 26<sup>th</sup> Dec. 2015.
6. Two days conclave on "Steel Technology and its Application", 13-14 Feb. 2015 at Chennai.
7. Workshop on "Advanced Electron Microscopy", 12-13 Oct. 2009 at IGCAR Kalpakkam, organized by IIM Kalpakkam Chapter.
8. Theme meeting on "NDE for Microstructural Characterization", 22<sup>nd</sup> Dec. 2010, at IGCAR, Kalpakkam.
9. Theme meeting on "Alloy Design", 11<sup>th</sup> Mar. 2011 at IGCAR, Kalpakkam.
10. Theme meeting on "all about electron microscopy", 3<sup>rd</sup> Feb. 2012 at IGCAR, Kalpakkam.
11. Theme meeting on "all about laser material processing", 14<sup>th</sup> Feb. 2012 at IGCAR, Kalpakkam.
12. NAAC sponsored two days national seminar on "Quality assurance and quality enhancement in higher education" held at Rayagada (Auto) College, Rayagada during 12<sup>th</sup> & 13<sup>th</sup> January 2018.
13. National Science Day Seminar-2018 at Institute of Physics, Bhubaneswar on 28<sup>th</sup> Feb' 2018.
14. National Science Day Seminar-2019 at Rayagada Auto College, Rayagada, Odisha on 28<sup>th</sup> Feb' 2019.
15. Two Day Online Workshop on "Online Tools & Software for Remote Teaching - Learning", 24<sup>th</sup> & 25<sup>th</sup> April, 2020 organized by UGC-HRDC, JNTUH, Hyderabad.
16. National level FDP-webinar on "Fundamentals of Writing Research Paper", 06<sup>th</sup> May, 2020.

17. International web conference on Science, Engineering & Technology IWCSET-2020, 15<sup>th</sup> and 16<sup>th</sup> May, 2020
18. One-week National Online Faculty Development Program “Skills for Next Generations Teachers” organized by Vimala College, Thrissur, 1<sup>st</sup> to 7<sup>th</sup> December, 2020.

### **Invited Talks**

1. “Material Challenges in Nuclear Industries for Waste Storage” – National Conference on Innovative Structural Materials, 24<sup>th</sup> and 25<sup>th</sup> Dec’2018, held at Bhubaneswar, Odisha.
2. “Enhancement of corrosion resistance by laser surface melting” – National Conference on Advanced Engineering Materials, 23<sup>rd</sup> and 24<sup>th</sup> July’2016, held at GIET, Gunupur, Odisha.
3. “Corrosion Management Summit” - 4<sup>th</sup> Industrial Maintenance Expo-2014, 20<sup>th</sup> Sep’2014 held at Codissia Trade Fair Complex, Coimbatore.
4. Certification Workshop on Corrosion Audit Methodology & Corrosion Management, held on 21<sup>st</sup> Sep’2014 at Coimbatore.
5. “Corrosion management in auto-component manufacturing at industries” at various auto-component manufacturing industries.
6. “Career opportunities in Chemistry” at Centurion University, Rayagada Campus.
7. “Content Analysis & Report Writing” Three-day Research Methodology Work, Organized by Dept. of Political Science, Rayagada Autonomous College, Rayagada.

### **Awards and Achievements**

1. International Travel Fellowship by Department of Science & Technology, India to attend 16<sup>th</sup> Asian Pacific Corrosion Control Conference at Taiwan in 2012.
2. 1st prize for oral presentation: P. K. Samantaroy, S. Girija, U. Kamachi Mudali, "Pitting corrosion behavior of heat-treated nickel based superalloys in acidic chloride medium", 16th National Congress on Corrosion Control, 23-25 Aug. 2012, Kolkata.
3. Department of Atomic Energy-Junior Research Fellowship in 2008.
4. Department of Atomic Energy-Senior Research Fellowship in 2010.
5. Appreciation Award from National Association of Corrosion Engineers, USA for Special Contribution by Serving as Chairman to NIGIS-South Zone-Student Section.

### **Additional Information**

- Served as Chairman, NACE International Gateway India Section (South Zone) Student Section from August, 2011 to July, 2013.
- Served as Convener of International Corrosion Prevention Symposium for Research Scholars, Chennai, India during 28 Feb - 02 Mar, 2012.
- Served as Organizing Secretary of National Seminar on Eco-friendly Approaches to Control Biohazards, held at Rayagada Autonomous College, Rayagada during 22<sup>nd</sup> & 23<sup>rd</sup> June, 2019.
- Served as the Organizing Secretary of the three day workshop on Innovation and Intellectual Property Rights at Govt. College, Sundargarh from 28<sup>th</sup> Sep to 1<sup>st</sup> Oct 2023.

- Visited more than 50 industries as Corrosion & Application Specialist, conducted extensive process audits and provided technical solutions to resolve corrosion issues & given presentations to professionals on awareness on corrosion protection.
- Assistant Controller of Examinations, at Rayagada Autonomous College, Rayagada from July 2019 to August 2023.
- Coordinator for Odisha State Open University-RAC Study Centre from July 2018 to March 2023.
- Member of IQAC, at Rayagada Autonomous College, Rayagada from 2018 to 2023.
- Member of Academic Council at Rayagada Autonomous College, Rayagada from 2017 to 2023.
- Served as Coordinator of Science Society from 2022 to 2023.
- Served as Coordinator of Career Counseling & Placement Cell from 2021 to 2023.
- Served as Chairman, R & D Cell, for the session 2023.
- Member of IQAC at Govt. College, Sundargarh.
- General Body Member of Zilla Bigyan Prasar Samiti (ZBPS) Rayagada, nominated by Odisha Bigyan Academy, Science & Technology Department, Govt. of Odisha.

### **Personal Details**

Mother's Name : Smt. Janaki Samantaroy  
Father's Name : Shri. Kumuda Chandra Samantaroy  
Gender : Male  
Date of Birth : 02<sup>nd</sup> June, 1982  
Nationality : Indian  
Marital Status : Married to Dr. Amrita Kumari Panda, Asst. Professor of Biotechnology, Sant Gahira Guru University, Ambikapur, Chhatisgarh.  
Languages Known : English, Hindi and Odia

### **Declaration**

I, hereby declare that all the information mentioned above is true to best of my knowledge and belief.

**PRADEEP KUMAR SAMANTAROY**