

Dr. Swagatadeb Sahoo

Assistant Professor(Gr-I)

Electronics and Communication Engineering

NIT Jamshedpur

Research Development Expertise

Microwave Engineering, Metamaterial, Microwave sensor, Material Characterization, Microwave Absorbing material, Medical Implant, Environmental pollution detection, Adulteration detection, Bio-electromagnetics, Microwave material interaction, Broadband Dielectric Spectroscopy

Research Facilities

Vector Network Analyzer(ZNB 20, R &S made), DAK(Speag made), Wave guide, Horn Antenna Set up, Anechoic Chamber, PCB Prototype CNC Machine, CST Microwave Studio 2023, HFSS, Magnetic stirrer, Autoclave, Annealing Furnace, Laminar flow clean bench, Lab grade water, Hot oven, Vacuum pump, Sonicator

Research Papers and Patents:

Total papers: 34, Patents: 02

Recent Notable Publications:

1.S. Ranjan and S.Sahoo, Six band metamaterial absorber designed on twisted square and swastika-shaped resonator for S, C, X, and Ku band frequency and sensing applications, Physica Scripta,2025,100,015534.

2. S. Ranjan and S.Sahoo, Hexagon Enclosed Modified G- Shaped Polarization and Incident Angle Independent Metamaterial Absorber for S, C, X and Ku Band Frequency, AEU - International Journal of Electronics and Communications,2024,183,155348.

3. A.Rayon & S.Sahoo, Environmental pollution detection from susceptibility and conductivity measurement under microwave field: pollution detection under microwave field, International Journal of Environmental Science & Engineering, 2024,21,8535-8542

4. S. Ranjan & S.Sahoo, Review of metamaterial based microwave absorber and sensor, Journal of Electronic Materials, 2023, 53(2), 571-595.

5. A. Pandey & S.Sahoo, Impact of zinc oxide on dielectric properties of forsterite coated titanium based medical implant, IEEE SENSORS JOURNAL,2023, 23(24), 31171-31177.

6. A. Pandey & S.Sahoo, Dielectric Performance of forsterite coated titanium substrate based medical implant, IEEE SENSORS JOURNAL,2023, 23(13), 14847-14853.

7. S.S.Pattanayak, S.H.Laskar, & S.Sahoo, Design from waste: an eco-efficient microwave absorber using dried banana leaves and charcoal leaves and charcoal based composite, J. Mater. Sci: Materials in Electronics, 2022, 33, 13398-13407.

13. **Detail of patents:**

**1.** A system and a process for evaluating dielectric relaxation in dipolar liquid, Patent no: 2020104029, IP Australlia, Granted, 10.02.2021

2. A Method for Developing Corn Husk-Based Microwave Absorber, Patent no: 2021104490, IP Australlia, Granted, 30.03.2022

**Details of Projects**

Shortlisted but not recommended in DST-SERB Extra Mural Project Scheme(EMR-EECE); Cost: 61,56,000/- , File no: EMR/2017/002927/EEC

**National Research Collaboration**

1. Dr. N.K.Dhal, Principal Scientist and HOD, Department of Environment & Sustainability, CSIR-IMMT, Bhubaneswar, Odisha .

2. Prof. Bhaskar Gupta, Vice Chancellor and Professor, Department of Telecommunication Engineering, Jadavpur University .

3. Prof. Santanu Paria, Professor, Department of Chemical Engineering, National Institute of Technology Rourkela, Orissa.

4. Dr. Rajaram Bal, Principal Scientist, Indian Institute of Petroleum Engineering, Dehradun, Uttarakhand.

**International Research Collaboration:**

1. Dr. Mrs. Jasotha Prabagar, Senior Lecturer(Grade: I), University of Jaffna, Sri Lanka, Dr. Subramaniam Prabagar, Senior Research Scientist, Industrial Technology Institute, Colombo, Sri Lanka .

2 Prof. Francesco Pepe, Prof. Vincenzo Galdi , Department of Engineering, University of Sannio, Italy.

