

JOYDIP ROY

joydipdns@gmail.com | +91-8820089259
Kharagpur, India

SUMMARY

Senior Research Fellow in the department of Electrical Engineering at the Indian Institute Technology, Kharagpur, Also pursuing MS in Electrical Engineering at the same institute. Working with lab-fabricated sensors, signal conditioning circuits, PCB prototypes, micro-controllers, data acquisition and applications using IoT. Previously worked as an energetic Electrical Engineer with more than 2 years of experience in the Engineering / Construction industry. Well versed with the following industry skills: construction, procurement, inspection, engineering design approval, site-supervision.

WORK EXPERIENCE

Indian Institute of Technology, Kharagpur, India- October 2017 to present

Senior Research Fellow - October 2019 to present

- Salinity and TDS measurement along with conductivity measurement in the same measuring system.
- Temperature compensated values for the above parameters and their comparison with the standard instruments.
- Working to make the meter totally automatic (currently requires manual intervention). Also working to improve the data acquisition and use it for analytics using IoT.
- Final outcome would be a cheap, portable and commercial automatic water quality monitoring meter for use by farmers, and fisheries. The data-sheet of the final meter shall also be prepared.

Junior Research Fellow - October 2017 to October 2019

- Involved in the development of a water quality measuring system using an indigenous sensor probe coated with a special ion-exchange polymer. Parameters that this system shall measure would include conductivity, salinity, pH, TDS, etc
- Worked on sensor calibration, electronic calibration for the conductivity sensing using the indigenous sensor in a customized PCB designed in-house.
- Performance study of the same sensor in different setups to ensure that it can be used in real world scenarios.

SK Samanta & Co Pvt Ltd - Aug 2015 to October 2017

(An EPC Company, specialized in CHP, OHP, SILOS, SCR and WORKSHOPS)

Electrical Engineer (Field and later in design and engineering)

- Experience in installation of equipment in Electrical Substation- such as HT and LT Switchgear, PMCC, MCC, MLDB, PLC/RIO, Bus duct, Transformer, Battery charger, Ventilation System, Capacitor Bank with ACDB, laying and termination of LT & HT(heat shrinkable) cables, Cable tray arrangements, Illumination(indoor, outdoor and peripheral), Earthing and Lightning protection.
- Experience in conveyor system- Drives, Safety switches and Shuttle conveyor
- Experience in Bunker System- Travelling tripper, Plough/Paddle feeder
- Experience in Track hopper- Wagon Tippler
- Experience in design engineering- AutoCAD drawings, Cable calculations and schedules, Illumination system, Earthing calculations, approval of drawings, Inspection of equipment at vendor's workshop, Site co-ordination.

EDUCATION

- *MS in Electrical Engineering*
Indian Institute of Technology, Kharagpur, India
January 2019 - present
- *B-Tech in Electrical Engineering*
Meghnad Saha Institute of Technology, Kolkata, India
(CGPA : 8.4/10)
July 2011- May 2015

- *12th Board-All India Senior School Certificate Examination(Computer Science)*
The Pentecostal Assembly School, Bokaro, India 2009- 2011
(**Percentage: 83.6%**)
- *10th Board-Indian Certificate of Secondary Education*
De Nobili School, FRI, Dhanbad, India 2009
(**Percentage: 89.57%**)

PUBLICATIONS

Journal Publications

- Avishek Adhikary, **Joydip Roy**, Anaparthi Ganesh Kumar, Susanta Banerjee, and Karabi Biswas. "*An Impedimetric Cu-Polymer Sensor-Based Conductivity Meter for Precision Agriculture and Aquaculture Applications.*" in IEEE Sensors Journal 19, no. 24 (2019): 12087-12095.

Conference Proceedings

- Avishek Adhikary, **Joydip Roy**, and Karabi Biswas. "*Performance study of a two-electrode type aqueous conductivity sensor for smart farming.*" In 2019 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), pp. 1-6. IEEE, 2019.

SKILLS

- Circuits: Simulation (MATLAB, Proteus, **Falstad-web**), Schematic & PCB design (Allegro, **Eagle**)
- Microcontrollers: **Arduino (Arduino IDE)**, ESP8266, **ESP32** (ESP IDF)
- Programming: C, C++, Java, Python3, HTML/CSS
- Industry: Electrical Substation, Conveyor Systems & Drives, Conveyor Safety switches, Switch-gears & control panels, Transformers & Bus-Ducts, Engineering drawings (AutoCAD), site-coordination, etc.

AWARDS/ACHIEVEMENTS

- **Graduate Aptitude Test in Engineering (GATE) -2015**, All India Rank- **1650** (Percentile- **98.6%**) in Electrical Engineering
- Received **Principal's Award** for being an active member and Vice President of Science club (Physics dept.) in school.

HOBBIES

- Listening to good music
- Reading about topics of my interests
- Discussing philosophical thoughts
- Engaging in sports
- IoT projects

LANGUAGES KNOWN

English, Hindi, Bengali and German (A1 level)