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- Ashok Kumar
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Dr. Arijit Chowdhuri (Presenting)

**SnO<sub>2</sub> thin films deposited using RF sputtering**

Deposition Parameters:

- Target : 1In (4 inch dia.)
- Power: 150 Watts
- TS distance: 7.5 cm
- Substrate: Corning glass
- Gas : Argon + Oxygen

Sputtering pressures: Varied from 12 - 18 mTorr

Oxygen gas concentration: Varied from 20% - 90%

Sensing is a surface phenomenon and sensor surface changes drastically with the sputtering pressure and oxygen gas concentration hence optimized parameter is required for enhanced sensor response characteristics

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- Anshika Dubey
- Aruna Priya P
- Dr. Mukesh Kumar

Rajni Sliet (Presenting)

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Dr. Monika Joshi (Presenting)

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Dr. Sib Krishna Ghoshal Faculty of Science (Presenting)

5:57 AM | itj-fpfd-djb

Dr. Sib Krishna Ghoshal Faculty of Science (Presenting)

### 2<sup>nd</sup> International Conference on Recent Trends in Materials Science & Devices 2023 (December 29-31)

## Improved Performance of Rose Bengal Dye-Encapsulated Plasmonic Gold/Silver Nanoparticles-Based Fiber-Optic Humidity Sensor

**Prof. Sib Krishna Ghoshal**  
Advanced Optical Materials Research Group & Ibn Sinha Institute of Laser Centre  
Physics Department, Faculty of Science, University Technology Malaysia

Dr. Sib Krishna Ghoshal Fac...

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- AKHILESH KUMAR YADA...
- Anand Pathak
- ashwani GNDU

Raman Singh (Presenting)

### Graphene Coatings: Similar Corrosion Resistance Irrespective of Aggressiveness of Environment

Potentiodynamic polarization (PDP) plots of graphene-coated and bare Ni substrates in: (a) 0.5M H<sub>2</sub>SO<sub>4</sub>, (b) 0.5M NaOH and (c) 0.1M NaCl.

Test Materials	Test Environment	E <sub>corr</sub> (mV)	i <sub>corr</sub> (μA)	Corrosion Rate (mm/y)
Bare Ni	0.5M H <sub>2</sub> SO <sub>4</sub>	-172	14.38	2.9E-01
Graphene coated Ni	0.5M H <sub>2</sub> SO <sub>4</sub>	-335	0.01	1.5E-04
Bare Ni	0.5M NaOH	-274	0.07	9.8E-04
Graphene coated Ni	0.5M NaOH	-261	0.02	2.3E-04
Bare Ni	0.1M NaCl	-172	0.16	2.2E-03
Graphene coated Ni	0.1M NaCl	-358	0.08	1.1E-03

Singh Raman, Arya, Tomy, Dip. Lal, Akhauri, Graphene Coatings for Corrosion Resistance of Nickel and Copper in Acidic, Alkaline and Neutral Environments, *J Mater Sci Technol*, 142 (2023) 124-133.

MONASH University

Raman Singh

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- Ashwani Kumar Sood
- BIJAN KUMAR GANGO...
- Dimpi Dutta
- Dipak Sinha

**Raman Singh (Presenting)**

**Circumvention of Challenges in CVD of Graphene on Mild Steel for Durable Corrosion Resistance**

Graphene coating enhances corrosion resistance of Bare Mild Steel in 0.1M NaCl for >1000h by >More than Two Orders of Magnitude

Singh Raman, Sanjiv, Banerjee et al, *Small*, 2023, 2302498, DOI: 10.1002/smal.202302498

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