

Publications:

1. Effect of dopant oxidation states on enhanced low ppm CO sensing by copper doped zinc oxide, Pratyasha Rudra, Nirman Chakraborty, Velaga Srihari, Ajay K. Mishra, Sagnik Das, **Debdulal Saha**, Swastik Mondal *, Materials Chemistry and Physics, 295 127047, (2023) **(IF 4.094)**.
2. Beneficial effect of Sn doping on bismuth ferrite nanoparticle-based sensor for enhanced and highly selective detection of trace formaldehyde, Tanushri Das , Subhajit Mojumder , Sonam Chakraborty , **Debdulal Saha** , Mrinal Pal *, Applied Surface Science 602 (2022) 154340 **(IF-7.392)**.
3. Surface-analyte interaction as a function of topological polar surface area of analytes in metal(Cd, Al, Ti, Sn) sulfide, nitride and oxide based chemiresistive materials:, Nirman Chakraborty , Sagnik Das, **Debdulal Saha**, Swastik Mondal * Sensors & Actuators: A. Physical 341, 113610 (2022) **(IF-3.407)**.
4. Influence of major parameters on the sensing mechanism of semiconductor metal oxide based Chemiresistive gas sensors: A review focused on personalized healthcare”, Sagnik Das, Subhajit Mojumder, **Debdulal Saha**, Mrinal Pal*Sensors & Actuators: B. Chemical 352, 131066 (2022) **(IF-7.46)**.
5. Y and Al co-doped ZnO-nanopowder based ultrasensitive trace ethanol sensor: A potential breath analyzer for fatty liver disease and drunken driving detection, Subhajit Mojumder , Tanushri Das , Sagnik Das , Nirman Chakraborty , Debdulal Saha , Mrinal Pal *, Sensors & Actuators: B. Chemical, 372, 132611(2022) **(IF-9.221)**.
6. Doped Tin Oxide Nano-particles for Room Temperature SO₂ Sensing, Nirman Chakraborty, Pradeepta Kumar Ghose, Pratyasha Rudra, Sagnik Das, **Debdulal Saha**, Ajay K. Mishra, Ambarish Sanyal and Swastik Mondal*, Material Chemistry A, **9**, 21824-21834 (2021) **(IF-11.301)**.
7. Poly aniline (PANI) loaded hierarchical Ti_{1-x}Sb_xO₂ rutile phase nanocubes for selective room temperature detection of benzene vapor, Nirman Chakraborty, Sagnik Das, Akbar Hossain, **Debdulal Saha**, Swastik Mondal *,Sensors & Actuators: B. Chemical 347 (2021) 130622. **(IF-7.46)**.
8. Screen-printed MgAl₂O₄ Semi-thick Film based Highly Sensitive and Stable Capacitive Humidity Sensor, Sagnik Das, Md. Lutfor Rahman, Partha P Mondal, Preeti L Mahapatra, **Debdulal Saha***, Ceramics International,47 (2021) 33515–33524 **(IF-3.83)**.
9. Role of structure and electron mobilization in enhanced ethanol sensing by Al doped SnO₂ nanoparticles, Nirman Chakraborty, Sagnik Das, Velaga Srihari, Dibya Jyoti Mondal, **Debdulal Saha**, Sanjit Konar, Ajay K. Mishra and Swastik Mondal*, Materials Advances.2021, Vol. 2, pp. 3760-3769 DOI:10.1039/D1MA00172H.
10. A Highly Sensitive and Fast Cobalt Chromite Thick Film based Trace Acetone Sensor for the Detection of Diabetes from Exhaled Breath, Preeti Lata Mahapatra, Sagnik Das, Partha Pratim Mondal, Tanushri Das, Mrinal Pal*, **Debdulal Saha***, Materials Chemistry and

Physics, 262,124291, 2021 (**IF-3.408**).

11. Microporous Copper Chromite Thick Film based Novel and Ultrasensitive Capacitive Humidity Sensor, Preeti Lata Mahapatra, Sagnik Das, Partha Pratim Mondal, Tanushri Das, **Debdulal Saha***, Mrinal Pal*, Journal of Alloys and Compounds, 859,157778, 2021 (**IF-4.65**).
12. Novel Barium Hexaferrite based Highly Selective and Stable Trace Ammonia Sensor for Detection of Renal Disease by Exhaled Breath Analysis, Tanushri Das, Sagnik Das, Mita Karmakar, Sonam Chakraborty, **Debdulal Saha**, Mrinal Pal*, Sensors and Actuators B, 325, 2020,128765 (**IF-7.10**).
13. Ammonia Sensing by $\text{Sn}_{1-x}\text{V}_x\text{O}_2$ Mesoporous Nanoparticles, Nirman Chakraborty, Ambarish, Sanyal, Sagnik Das, **Debdulal Saha**, Samar Kumar Medda and Swastik Mondal*,ACS Appl. Nano Mater. 2020, 3, 7572–75795.
14. Study on the novel capacitive moisture sensing behaviour of nickel chromite nanoparticle based thick film, Partha Pratim Mondal, Preeti Lata Mahapatra, Sagnik Das, **Debdulal Saha***, Measurement 163 (2020) 107992, (**IF-2.791**).
15. A Comparative Study on the Moisture Response of Nanoporous γ -Alumina with Parallel Plate and Micro-Interdigital Electrodes, Preeti lata Mahapatra, Partha Pratim Mondal, Sagnik Das, **Debdulal Saha***, Journal of Electronic Materials, Vol. 49, No. 2, 2020 (**IF-1.676**).
16. Novel Capacitive Humidity Sensing Properties of Cobalt Chromite nanoparticles based Thick Film, Preeti lata Mahapatra, Partha Pratim Mondal, Sagnik Das, **Debdulal Saha***, Microchemical Journal, 152 (2020)104452 (**IF-3.206**).
17. Effect of porosity on the response of alumina thick films towards moisture, **Debdulal Saha*** and Sagnik Das, Trans. Ind. Ceram. Soc., 2018, vol. 77, no. 3, pp. 1-8 (**IF-1.014**).
18. Development of Fullerene Modified Metal Oxide Thick Films for Moisture Sensing Application, **Debdulal Saha*** and Sagnik Das, Materials Today: Proceedings 5 (2018) 9817–9825.
19. Nano porous γ -Alumina Sensor for monitoring COPD and asthma patients, **Debdulal Saha***,Proc. of the Intl. Conf. on Nanotechnology for Better Living, Vol. 3, No. 1, p. 256, 2016. doi:10.3850/978-981-09-7519-7nb116-rps-256.
20. Nanoporous γ -alumina based novel sensor to detect trace moisture in high temperature and high pressure environment, **Debdulal Saha**, Dilip Kr. Ghara, Mrinal Pal, Sensors and Actuators B 222 (2016) 1043–1049. (**IF-6.393**).
21. Modified Clad Optical Fiber Coated with PVA/TiO₂ Nano Composite for Humidity Sensing Application,Chandra Khatua, Ipsita Chinya, **Debdulal Saha**, Shyamal Das, Ranjan Sen and Anirban Dhar, International Journal on Smart Sensing and Intelligent System (IF:0.71) Vol. 8, NO. 3,(1424-1442).

22. Trace moisture detection in oil filled transformer by ceramic sensor” **Debdulal Saha***, K Sengupta. IOP Conf. Series: Materials Science and Engineering 73 (2015) 012022.
23. Development of Commercial Trace Moisture Sensor: A Detailed Comparative Study on Microstructural and Impedance Measurements of Two Phases of Alumina, Manju pandey, Prabhash Mishra, **Debdulal Saha**, K. Sengupta, S. S. Islam. Electron. Mater. Lett., Vol. 10, No. 2 (2014), pp. 357-362. **(IF-1.881)**.
24. Polymer optimization for the development of low-cost moisture sensor based on nanoporous alumina thin film, Manju pandey, Prabhash Mishra, **Debdulal Saha**, S. S. Islam, Journal of Advanced Ceramics, 2013,2(4): 341-346. **(IF-2.3)**.
25. Nanoporous alumina (γ - and α -phase) gel cast thick film for the development of trace moisture sensor, Manju Pandey, Prabhash Mishra, **Debdulal Saha**, K. Sengupta, Kiran Jain, S. S. Islam. J Sol-Gel Sci. Technology 68(2), 2013 **(IF-1.986)**.
26. TiO₂ Thin Film Capacitive Humidity Sensor Based on Sol-gel Technique, Manju pandey, **Debdulal Saha**, Kamalendu Sengupta, S. S. Islam. Sensors & Transducers Journal, Vol. 142, Issue 7, 2012, pp. 143-149.
27. Nanoporous morphology of alumina films prepared by sol-gel dip coating method on alumina substrate, Manju Pandey, Kriti Tyagi, Prabhash Mishra, **Debdulal Saha**, K. Sengupta, S. S. Islam. J Sol-Gel Sci. Technology, Vol. 64 issue 2. 2012 pp. 282-288. **(IF-1.986)**.
28. A Medium-Range Hygrometer Using Nano-Porous Thin Film of γ -Al₂O₃ With Electronics Phase Detection, Lokesh Kumar, Debdulal Saha, Shakeb A. Khan, Kamalendu Sengupta, and Tarikul Islam, IEEE Sensors Journal, Vol. 12, No. 5, 2012. **(IF-3.076)**
29. γ -Al₂O₃ Coated Porous Silicon for Trace Moisture Detection, Tarikul Islam, Deb Dulal Saha, Prince M. Z. Hasan, and Sheikh Safiul Islam, IEEE Sensors Journal, Vol. 11, No. 4, 2011, pp. 882-887. **(IF-3.076)**.
30. Effect of Organic Vapour on Porous Alumina Based Moisture Sensor in Dry Gases, Saakshi Dhanekar, Tarikul Islam, Kamalendu Sengupta, S. S. Islam, **Debdulal Saha**. Sensors & Transducers Journal, Vol. 6, Special Issue, 2009, pp. 117-127.
31. Implementation of linear trace moisture sensor by nano porous thin film moisture sensor and NLamp. Dilip Kumar Ghara, **Debdulal Saha** & Kamalendu Sengupta. International Journal on Smart Sensing and Intelligent System, Vol. 1, No. 4, (2008) pp. 955-969.
32. Leak rate and location analysis through slits and cracks in pipes by nano porous ceramics humidity sensors. Dilip Kumar Ghara, **Debdulal Saha** and Kamalendu Sengupta. International Journal on Smart Sensing and Intelligent System, Vol. 1, No. 3, (2008) pp.784-798.
33. Development of commercial trace moisture sensor following sol-gel thin film technique, **Debdulal Saha**, Santanu Das and Kamalendu Sengupta. Sensors and Actuators B, Vol. 128, Issue 2, (2008) pp. 383-387. **(IF-6.393)**.

34. A Dew Point Meter Comprising a Nanoporous Thin Film Alumina Humidity Sensor with a Linearizing Capacitance Measuring Electronics, Dilip Kumar Ghara, **Debdulal Saha** and Kamalendu Sengupta, *Sensors & Transducers*, Vol. 88, Issue 2, (2008) pp. 59-65.
35. Study of Cross- Sensitivity of Porous Alumina based Trace Moisture Sensor in Dry Gases, S. Dhanekar, P.M.Z. Hasan, S. Hussain, T. Islam, K. Sengupta, **Debdulal Saha**, S.S. Islam, 3rd International Conference on Sensing Technology, 2008, Tainan.
36. Trace Moisture Response Property of Thin Film Nano Porous γ -Al₂O₃ for Industrial Application, **Debdulal Saha**, Kamalendu Sengupta. *Sensors & Transducers* Vol.85, Issue 11, (2007) pp. 1714-1720.
37. High temperature humidity sensor for detection of leak through slits and cracks in pressurized Nuclear power reactor pipes, **Debdulal Saha**, Kamalendu Sengupta. *Sensors & Transducers* Vol. 77, Issue 3, (2007) pp.1025-1031.
38. Nano structure metal oxide ceramic thin film for detection of trace moisture using CMOS timer”, **Debdulal Saha**, Kamalendu Sengupta, *Sensors & Transducers* Vol. 80, Issue 6, (2007) pp. 1239-1245.
39. Dependence of moisture absorption property on sol-gel process of transparent nano-structured γ -Al₂O₃ ceramics, Debdulal Saha, Kalyan Kumar Mistry, Runa Giri, Animesh Guha, Kamalendu Sengupta”, *Sensors and Actuators B*, Vol. 109, 9 (2005) pp.363-366. **(IF-6.393)**.
40. Magnesium chromate-TiO₂ spinel tape cast thick film as humidity Sensor, **Debdulal Saha**, Runa Giri, Kalyan Kumar Mistry, Kamalendu Sengupta. *Sensors and Actuators B*, Vol.107, (2005) pp.323-331. **(IF-6.393)**.
41. Sol-gel processed Al₂O₃ thick film template as sensitive capacitive trace moisture sensor, Kalyan Kumar Mistry, **Debdulal Saha**, Kamalendu Sengupta. *Sensors and Actuators B*, Vol.106, (2005) pp. 258-262. **(IF-6.393)**.

Invited Lecture delivered

- 1) Delivered an invited talk on International Conference on Nanotechnology (ICNT 2022) Theme: Nanotechnology for better Health, Safety and Environment, 23rd ~ 24th December, 2022. Organized by Institute of Fire and Safety Engineering, Haldia West Bengal – 721654.
- 2) Delivered an invited talk during the "CELEBRATING INNOVATION IN UNIVERSITY-INDUSTRY-ENTREPRENEURS" 7th December 2022 at Pinnacle 6, The Verticle, Connexion Conference & Event Centre. Universiti of Malaya, Malaysia.
- 3) Advanced Functional Materials: Future Perspectives (AFMFP-2022) August 6-8, 2022 organized at Dr. B. R. Ambedkar National Institute of Technology Jalandhar.
- 4) International Conference on Nanotechnology (ICNT-2021), organized at Institute of Fire and Safety Engineering (IFSE) Haldia, W.B. 23-24 December 2021.

5) Internship Course on Emerging Trends in Nanomaterials for Different Device Architectures (ETNDDA-2021), Dept. of Chemical Engineering, Calcutta University, 25th September, 2021.

6) International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021) at Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh, March. 11-13, 2021.

7) 28th National (Virtual) Conference on Condensed Matter Physics, Condensed Matter Days 2020 (CMDAYS20) at Department of Physics & Institute Innovation Cell, National Institute of Technology, Silchar, Assam, December 11-13, 2020.

8) Online National Conference on “Advanced Materials and Radiation Physics” (AMRP-2020) at department of Physics, Longowal Institute of Engineering & Technology, Punjab-148106, November 09-11, 2020.

9) Online Workshop on “Functional Materials”. The five day workshop organized by Department of Physics Malaviya National Institute of Technology Jaipur Rajasthan - 302017, India. 7-11th September, 2020.

10) International Conference on Applications of Smart Materials (ASM - 2020) at Annamalai University, Tamilnadu, India. February 05 - 07, 2020.

11) 3rd International Conference on Condensed Matter & Applied Physics (ICC 2019) at Govt. Engineering College, Bikaner, Rajasthan, India. October 14-15, 2019.

12) National workshop on “Applications of Nuclear Science in Bio-Chemical Engineering, Agricultural Productivity & Food Safety (ANS- 2019) ” under the School of Chemical Engg, Food Tech. and Biotechnology, at Haldia. August 30-31, 2019.

13) Five day workshop on “Fabrication of Optoelectronic Devices and Sensors - Hands-on Experience” (FODS-2019), organized at Dept. of Physics, National Institute of Technology, Warangal, Telangana, India. 17- 21 June, 2019.

14) National Conference on Advancements in materials, design and manufacturing methods, (AMDMM 2019), organized at Dept. of Mechanical Engineering, National Institute of Technology, Rourkela, Odisha India. 29-30 March, 2019.

15) 2nd National Conference on Hard and Soft Condensed Matter Physics (NCHSCMP-2019), organized at Dept. of Physics, Tezpur University, Assam India. 4-6 March 2019.

16) 4th International Conference on Physics of Materials & Materials based Device Fabrication (ICPM-MDF-2019), organized at Dept. of Physics, Shivaji University, Kolhapur (M.S.) India. 10-11 January 2019.

17) International Conference on Nanotechnology (ICNT-2018), organized at Institute of Fire and Safety Engineering (IFSE) Haldia, W.B. 16-17 November 2018. (**Plenary Lecture**)