Anish Bhattacharya

DOB: 03-Oct-1992 (29 years)
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PROFILE SUMMARY

I am a researcher with a keen interest in synthesis, investigation, and optimization of advanced material systems for application in various fields including, photocatalysis, photovoltaics, sensors, and other optoelectronic devices. I have Bachelor's in Mechanical Engineering, a Master's in Advanced Materials Science and Technology, and Doctorate in Materials Science and Engineering. I am actively looking for research opportunities related to material synthesis, behavior, and characterization for multi-faceted applications.

EXPERIENCE

Assistant Professor (Ad-hoc) — Guru Ghasidas Vishwavidyalaya
Department of Pure & Applied Physics — Bilaspur, Chhattisgarh, India
Subjects taught: Nanomaterials and its Applications — From 06-Jan-2022 to present
Semiconductor Fabrication and Characterization

EDUCATIONAL QUALIFICATIONS

Doctor of Philosophy in Materials Science and Engineering (2017-2020) — Anhui University of Technology
Thesis: Effect of Synthesis Method and A-site doping on gas sensing behavior of $BaSnO_3$ — Ma'anshan, Anhui, China
CGPA: 3.27/4

Master of Technology in Advanced Materials Science and Technology (AMST) (2014-2016) — National Institute of Technology
Thesis: Carbon Nanostructure based Perovskite for application as counter electrode in Dye Sensitized Solar Cells — Durgapur, West Bengal, India
CGPA: 8.96/10

Bachelor of Engineering in Mechanical Engineering (2010-2014) — Bhilai Institute of Technology
Minor Thesis: Arbitrary Lagrangian Eulerian (ALE) approach applied to flow analysis — Durg, Chhattisgarh, India
CGPA: 7.64/10
Major Thesis: Improving performance in Robotic groups

RESEARCH INTERESTS

Gas Sensors; Electrochemical Sensors; Material Synthesis; Material Characterization; Nanomaterials; Materials for Energy Applications; Optoelectronic Devices; Solar Cells; Electrochemical Cells; Fuel Cells; Perovskite; Carbon Nanostructures

SKILLS

Instruments:
Electrochemical workstation, Atomic Force Microscope, Scanning Tunneling Microscope

Analytical Skills:
XRD, FESEM, HRTEM, SAED, EDS, AFM, STM, UV-DRS, XPS, N_2 adsorption desorption isotherms, FTIR Spectroscopy, and Raman Spectroscopy. Fabrication and investigation of Electrochemical Cells, Solar Cells and Gas Sensors.

Synthesis Skills:
Hummer's method for preparation of Graphene Oxide. Co-precipitation synthesis, Hydrothermal synthesis, Solvothermal synthesis, Molten salt synthesis, Electrospinning and Spin coating for metal oxide synthesis.

Software:
Origin 8.5, Adobe Photoshop, Image J, AutoCAD, ProE, Materials Studio 8.0, MDI Jade 6.0, XPS Peak 4.1, Gatan Microscopy Suite, and MS Office applications

ANISH BHATTACHARYA

Linguistics:

Fluent in English, Hindi, and Bengali. Elementary knowledge of Sanskrit and Mandarin.

ACHIEVEMENTS

1. Qualified Graduate Aptitude Test for Engineers (GATE, Mechanical Engineering) in 2014, 2015 and 2016.
2. Qualified IELTS in 2016 with an 8-band score.

PUBLICATIONS

Journal Publications

1. X. Li, Y. Zhang, **A. Bhattacharya**, X. Chu, S. Liang, and D. Zeng, 'The formaldehyde sensing properties of $CdGa_2O_4$ prepared by co-precipitation method', *Sensors and Actuators B*, 343, 129834, 2021. DOI: 10.1016/j.snb.2021.129834.
2. **A. Bhattacharya**, Y. Zhang, H. Wu, X. Chu, Y. Dong, S. Liang, J. Xu, and A. K. Chakraborty, 'Ethanol sensor based on microrod-like La-doped Barium Stannate', *Journal of Materials Science: Materials in Electronics*, 31 (20), 17461-17473, 2020. DOI: 10.1007/s10854-0202-04302-w
3. **A. Bhattacharya**, X. Chu, Y. Dong, S. Liang, and A. K. Chakraborty, 'Influence of synthesis methods on microstructure and Ethanol Sensing properties of barium stannate', *Vacuum*, 180, 109645, 2020. DOI: 10.1016/j.vacuum.2020.109645
4. **A. Bhattacharya**, X. Chu, Q. Gao, X. Li, Y. Dong, S. Liang, and A. K. Chakraborty, 'Influence of Gd^{+3} incorporation on ethanol sensing properties of Barium Stannate microrod films prepared by co-precipitation method', *Applied Surface Science*, 504, 144289, 2020. DOI: 10.1016/j.apsusc.2019.144289
5. **A. Bhattacharya**, Y. Jiang, Q. Gao, X. Chu, Y. Dong, S. Liang, and A. K. Chakraborty, 'Highly responsive and selective formaldehyde sensor based on La^{3+}-doped barium stannate microtubes prepared by electrospinning', *Journal of Materials Research*, 34 (12), 2067-2077, 2019. DOI: 10.1557/jmr.2019.95
6. X. Chu, P. Dai, S. Liang, **A. Bhattacharya**, Y. Dong, and M. Epifani, 'The acetone sensing properties of $ZnFe_2O_4$-graphene quantum dots (GQDs) nanocomposites at room temperature', *Physica-E: Low-Dimensional Systems and Nanostructures*, 106, 326-333, 2019. DOI: 10.1016/j.physe.2018.08.003

Book Chapter

1. **A. Bhattacharya** and A. K. Chakraborty, 'Carbon nanotube-induced targeted drug delivery', *Bio-Targets and Drug Delivery Approaches, CRC Press*, 403-436, 2016. Part of DOI: 10.1201/9781315370118

CONFERENCES

Attended 1st International Conference on **Emerging Materials Characterization and Applications (EMCA)** Organizers: Central Glass and Ceramic Research Institute and National Institute of Technology Durgapur	4-7 December 2014 Venue: Central Glass and Ceramic Research Institute, Jadavpur, Kolkata, West Bengal, India
Attended and presented at 4th **International Conference on Advanced Nanomaterials and Nanotechnology** Organizers: Indian Institute of Technology Guwahati Presentation: **A. Bhattacharya**, A. Sarkar, and A. K. Chakraborty, ***Electrochemical behavior of $Sr_2Nb_2O_7$ nanostructure***	8-11 December 2015 Venue: Indian Institute of Technology, Guwahati, Assam, India

REFEREES

Prof. Xiangfeng Chu (Ph. D. thesis supervisor)	School of Chemistry and Chemical Engineering Anhui University of Technology, Ma'anshan, China e-mail: xfchu99@ahut.edu.cn; maschem@sohu.com Contact: +8615655578576
Prof. Amit K. Chakraborty (M. Tech. thesis supervisor)	Department of Physics National Institute of Technology, Durgapur, India e-mail: amit.chakraborty@phy.nitdgp.ac.in Contact: +919434788137