



VIDYASAGAR COLLEGE

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Name : Sumit Mandal

1	Name	SUMIT MANDAL		
2	Designation	Assistant Professor		
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5	Date of Joining	23rd December, 2019.		
Academic qualifications				
6	Degree	Subject	University	Year
	Ph.D	Physics	Jadavpur University	2016
	M.Phil			
	M.sc	Physics	Jadavpur University	2007
	B.Sc	Physics	Jadavpur University	2005
PH.D. DETAILS				
7	Title of the Thesis	Spin polarized charge transport in graphene using magnetic impurity.		
	Field of specialization under subject/ discipline	Materials Science.		
8	PREVIOUS POSITIONS/Engagement	N/A		
9	Google scholar page:	N/A		
10	ORCID ID	N/A		
11	HONOURS AND AWARDS	“Best poster award” in EMRS Spring meting 2014; held at Lille, France.		
12	CURRENT RESEARCH PROJECT/Field of Research	N/A		
13	TECHNICAL UNDERSTANDING AND EXPERIENCE	N/A		
14	SUMMARY OF RESEARCH EXPERIENCE	Probing into intrinsic magnetism of defective graphene, the perspective of spin transport using ferromagnetic impurities has been explored through chemically synthesized graphene-based spin valve like structures. Afterwards, explaining the magnetoresistance results, a completely new empirical model on the basis of spin transport has been proposed taking the modification of spin polarization of graphene into account. The demonstration of a huge negative magnetoresistance using magnetic impurity spins will make graphene a potential candidate for spintronic devices.		
15	EXPERIENCE OF PROJECT MANAGEMENT	Transition metal dichalcogenides (TMDC): An alternative class of material for graphene based technology.		
16	COMPLETE LIST OF PUBLICATIONS (Maintain Harvard Format)	1. X-ray photoelectron spectroscopic investigation on the elemental chemical shifts in multiferroic BiFeO3 and its valence band structure. . S. Mandal, C.K. Ghosh, D. Sarkar, U.N. Maiti, K.K. Chattopadhyay, Solid State Sci., 2010, 12, 1803. 2. Ni/graphene/Ni nanostructures for spintronic applications. Sumit Mandal and Shyamal K. Saha Nanoscale, 2012, 4, 986- 990.		

		<p>3. A demonstration of half-metallicity in graphene using Mn₃O₄ nanosheet. Sumit Mandal, Moni Baskey, Shyamal K. Saha, Carbon, 2013, 61, 254- 259.</p> <p>4. A Qualitative study of spin polarization effect in defect tuned Co/graphene/Co nanostructures. Sumit Mandal and Shyamal K. Saha, AIP Conf. Proc., 2014, 1620, 560.</p> <p>5. Anomalous magnetic behavior at the graphene/Co interface. Sumit Mandal and Shyamal K. Saha, Appl. Phys. Lett., 2014, 105, 022402.</p> <p>6. Induced spin polarization effect in graphene by ferromagnetic nanocontact. Sumit Mandal and Shyamal K. Saha, J. Appl. Phys. 2015, 117, 093910.</p> <p>7. Effect of spin-orbit coupling on spin transport at graphene/transition metal interface. Sumit Mandal, Abu Jahid Akhtar, Bikash Kumar Shaw and Shyamal K. Saha, Phys. Status Solidi: Rapid Res. Lett. 2015 1-6.</p> <p>8. Amorphous molybdenum sulfide quantum dots: an efficient hydrogen evolution electrocatalyst in neutral medium. D Dinda, ME Ahmed, S Mandal, B Mondal, SK Saha, J. Mat. Chem. A 2016 4 (40) 15486- 15493.</p> <p>9. Engineering of ZnO/rGO nanocomposite photocatalyst towards rapid degradation of toxic dyes. SK Mandal, K Dutta, S Pal, S Mandal, A Naskar, PK Pal, TS Bhattacharya, et. al Mat. Chem. Phys. 2019, 223, 456-465.</p> <p>10. Understanding the Site-Selective Electrocatalytic CoReduction Mechanism for Green Urea Synthesis Using Copper Phthalocyanine Nanotubes. Jit Mukherjee, Sourav Paul, Ashadul Adalder, Samadhan Kapse, Ranjit Thapa, Sumit Mandal, Biswajit Ghorai, et. al Adv. Funct. Mater. 2022, 32, 2200882.</p> <p>11. Graphene-like emerging 2D materials: recent progress, challenges and future outlook. Md. Mohi Uddin, Mohammad Humaun Kabira, Md. Ashraf Ali, Md. Mukter Hossain, Mayeen Uddin Khandaker, Sumit Mandal, A. Arifutzzaman and Debnarayan Jana, RSC Adv., 2023, 13, 33336-33375.</p> <p>12. Enhancing Electrochemical Reactivity with Magnetic Fields: Unravelling the Role of Magneto-Electrochemistr., Koushik Mitra, Ashadul Adalder, Sumit Mandal, Uttam Kumar Ghorai, Small Methods, 2024, 8, 2301132.</p>
17	Extracurricular Activities	
18	Link to personal website (if any)	