



# Dr. Suparna Basak

Associate Professor

Department of Physics

## Contact Information

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## Specialization

- Electronic Science



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## Biographical Sketch

Dr. Suparna Basak is currently associated as Associate Professor in the Department of Physics, The Bhawanipur Education Society College, affiliated to University of Calcutta. She joined the college in 1989. She completed her PhD from Jadavpur University and B.Sc and M.Sc degrees from Calcutta University. She has published several research papers in both International and National Journals as well as in reputed conferences during her PhD work. She is a life member of Indian Association of Physics Teachers and Indian Association for the Cultivation of Sciences. She is also associated with various academic activities like organizing seminars, invited talks, workshops, science exhibitions.

## Academic Qualifications

Abbreviation of the Degree	Name of the College / University	Class Obtained	Area of Specialization	Year of Passing
Ph.D	Jadavpur University	N.A	Electronics	2007
M.Sc	University of Calcutta	1 <sup>st</sup> Class	Electronic Science	1987 held in 1988
B.Sc	University of Calcutta	1 <sup>st</sup> Class	Physics (Hons)	1985

## Administrative Experience

- Head of the Department of Physics, The Bhawanipur Education Society College - 7 th March 1996 - 14th April 1997
- Vice Principal (Physics) - 16th April 1997 - 31st May 1999.



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## Research Experience

- Research Scholar – Part time Project Scholar in Radio Physics and Electronics, University of Calcutta under Prof. A. N. Daw 1989-1993
- Research work in the Department of Electronics and Telecommunication Engineering, Jadavpur University under Prof. Chandan Kumar Sarkar 1995-2009

## Academic Assignment

- Joint Convenor of C.K Majumder Memorial Workshop On Experimental Physics, 2017 Organised Jointly by The Bhawanipur Education Society College and Indian Association of Physics Teachers (Regional Council 15) at BES college.
- Coordinator of the Science exhibition organized by the Science section BES College, February 2017
- One of the organizers of a one-day symposium on “Re-Search Physics – From Hands on Experiment to Recent Advanced Technology” by Mr. Krishnendu Chakraborty on 21stSeptember, 2019 in Dept. of Physics, BES College.
- One of the organizers of one day talk on “ Graphene – Revolution in the Nano World” by Prof. G. P. Das (of IIT Kharagpur) in Dept of Physics, BES College on 21stSeptember, 2019.

## Subjects Taught

Physics | Electronics.

## Title Of Phd Thesis

- STUDIES ON ELECTRICAL PROPERTIES OF III-V AND II-VI SEMICONDUCTORS AND THEIR ALLOYS UNDER ENERGY BAND QUANTIZATION.





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## Journal Publications

- Effects of non-equilibrium polar optic phonons and their band non-parabolicity on small signal high frequency hot electrons ac mobility in narrow gap semiconductors in high magnetic fields. A. Chakraborty, S. Basak, K. Santra, C. K. Sarkar *Journal of Physics and Chemistry of solids*, 70, 1195-1199 (2009).
- Effects of the non equilibrium phonons and the band non parabolicity on the small signal high frequency ac mobility in narrow gap semiconductors in the extreme quantum limit at low temperatures. S. Basak, K. Santra and C. K. Sarkar *Journal of Low Temperature Physics*, vol. 149, p-330-339 (2007). Springer publications.
- Effect of Hyperbolic Band Structure on the Energy Loss rate of Hot Electrons with Non Equilibrium Phonon Distribution in the Extreme Quantum Limit at Low Temperatures in n- Hg<sub>0.8</sub>Cd<sub>0.2</sub>Te. S. Basak, C. K. Sarkar and K. Santra. *Journal of Low Temperature Physics*, vol.143, no.1/2, p-45 (2006). Springer publications.
- Hot electron energy loss mechanism and longitudinal conductivity of narrow gap semiconductors in parallel electric and magnetic fields . S. Basak and C. Chakraborty *Indian Journal of Physics*, vol -71, p-259 (1997).

## Conference Papers

- Magneto-transport in Mercury Cadmium Telluride with Hyperbolic Band structures under a quantising Magnetic field. S. Shrestha, A. Chakraborty, S. Basak and C. K. Sarkar *Condensed Matter Days-2002, (National Symposium in Condensed Matter Physics)*, Aug 29-31 (2002).
- High field Magneto Microwave and Millimeterwave Conductivities in n-InSb in the presence of quantising magnetic field. C. Chakraborty, S. Basak, C. K. Sarkar and X. L. Lei *10th International Workshop on Physics of Semiconductor Devices* Dec 14-18 (1999).
- High field Magneto Microwave Conductivity on n-type InSb at 77K in the presence of a Quantising Magnetic field. C. Chakraborty, C. K. Sarkar, S. Basak and M. N. Roy *CODEC'98*, p-615 (1998).





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- Effect of Alloy Disorder Scattering On Drift Velocity. C. Chakraborty, S. Basak and C. K. Sarkar International Conference on the Physics of Disordered Materials (ICPDM-97), Jaipur, Jan 27-29 (1997).
- Hot electron energy loss mechanism and magnetic field dependences in energy relaxation processes in narrow gap semiconductors in extreme quantum limit magnetic field. S. Basak, C. Chakraborty and C. K. Sarkar ICSMT'96, Delhi, (1996).
- Hot electron energy loss mechanism and longitudinal conductivity of narrow gap semiconductor in parallel electric and magnetic field. S. Basak and C. Chakraborty Condensed Matter Days (Organised by Department of Physics, Tripura University), MO-6, p-57, 29th -31st August (1996).
- On the magnetic field dependence of Hot Electron Energy Loss rate and drift velocity. C. Chakraborty, S. Basak, C. K. Sarkar DAE Solid State Physics Symposium, BARC, Mumbai (1996).

## Participation In Seminars / Webinars / Workshops / Conferences

DATE	ORGANIZER	TOPIC
5/6/2020	Environmental development Committee BES College	Environment and climate change Concerns on WORLD ENVIRONMENT DAY
13/6/2020	Dept of Computer Science, BES College	Simplifying Artificial Intelligence, Machine Learning and Data Science
15/6/2020	Dept of Mathematics, BES College	History of Science, Science in History
16/6/2020	Dept of Commerce, BES College	Socio-Economic Impact of Covid-19 in India and its revival strategies
20/6/2020	Dept of Mathematics, BES College	Application of Number Theory in Cyber Security: Few illustrations through Sage Math
22/6/2020	Dept of Physics, BES College	Saha and His Journey to the Stars
23/6/2020	Dept of Mathematics, BES College	The Sky And Beyond
25/6/2020	Dept of Chemistry, BES College	Pedagogical and Psychosocial Challenges.... Student's vision
26/6/2020	Dept of Chemistry, BES College	Pedagogical and Psychosocial Challenges.... Expert vision
27/6/2020	Dept of Electronics, BES College	One Dimensional Materials For Optoelectronic Devices
27/6/2020	Dept of Physics, Comp Science, Netaji Nagar College	Science and Technology for Sustainable Economic Growth in This Pandemic Scenario





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DATE	ORGANIZER	TOPIC
4/7/2020	IQAC ,Surendra Nath College	Introduction to Graphology and It's Implication to Society
8/7/2020	Dept of Physics,Surendra Nath College	A New View of the Solar System
11/7/2020	Teacher's Council and IQAC Netaji Nagar College for Women	Holistic Roadmap for Academic Excellence
15/7/2020	Prabhu Jagatbandhu College	Mathematical Modelling of Covid-19 Propagation Kinetics
16/7/2020	St. Paul's Cathedral Mission College	Optical imaging and Optical Components
17/7/2020	Department of Physics,BES college	The enigma of gravity:from apple to black hole.
17/7/2020	Department of Mathematic,BES college	With Covid around How should I live and let live
18/7/2020	Dept of Chemistry,BES college.	Exploring New Facets of Organic Synthesis.
18/7/2020	Bidhan Chandra College,Dept of Maths,Phys and IQAC	International Webinar on Dynamic survival analysis of epidemics and how Covid-19 shaped it.
19/7/2020	Dept of Political Science,History and IQAC,BES College	International Interactive on Pandemic and its cross cultural impact on physical and mental Health
22/7/2020	Presidency University	Condensed Matter Physics
29/7/2020	Dept of Electronics ,BES college.	Hazards of Electromagnetic Radiation.
31/7/2020 and 1/8/2020	Victoria Institution	Condensed matter Physics and Particle Physics





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1/8/2020	Dept of Chemistry, BES College.	Scientists under Scanner : When they are stepping against the ethics of Science.
3/8/2020	Krishnanagar College	Discovering the Fascinating world of Nanoscience
8/8/2020	Vidyasagar College	Electronic properties of 2D crystals
14/8/2020	Department of Physics, Raja Peary Mohan College	Quantum Biology in Nature.
28/8/2020	Department of Physics, BES College	Neutrino : The Nobel Connection
12/9/2020	Department of Physics, BES College	Nanomedicine: The Future

## Refresher Courses

- Refresher Course in Electronic Science conducted by Academic Staff college 26/7/01-16/08/01
- Refresher course in Nuclear Physics 18/2/93- 12/3/93
- Refresher Course in Solid state Physics 5/3/99-27/3/99

## Other Notable Activities

- As a part of social welfare activity of BES College, organized a visit to Aashiana Happy Home (Home for Homeless) on 16th November, 2019.
- Organised a visit of Physics Honours students to BITM (Birla Industrial and Technical Museum) on 2nd March 2020. Some special class demonstration was also arranged by the BITM authority to provide more insight to science for our students.

## Vision Statement

- To impart indepth knowledge to the students to develop free thinking and self confidence
- To prepare students with clear idea of the subject to face any challenges in higher studies
- To inspire students for pursuing research and academic carrier

Signature of the  
Faculty Member



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Date: 01st September, 2022