



University of Calcutta

Academic Department: Department of Electronic Science

Faculty Academic Profile/ CV



1. Full name of the faculty member : Jayee Sinha
2. Designation : Assistant Professor
3. Specialization : Condensed matter physics and Material Science
4. Contact information : (Office)
Department of Electronic Science
92, Acharya Prafulla Chandra Road
Kolkata, West Bengal, India.
Pin – 700009.
5. E –mail : jselec@caluniv.ac.in ; jayee.bhatt@gmail.com
6. Academic qualifications:
(Graduation onward)

<i>College/University from which the degree was obtained</i>	<i>Abbreviation of the degree</i>
Bidhan Chandra College, The University of Burdwan	B.Sc (Hons.) in Physics
Department of Electronic Science, Jadavpur University	M.Sc in Electronic Science
Satyendra Nath Bose National Centre for Basic Sciences, Jadavpur University	Ph.D (Science)

7. Positions held/holding :
 - i. Extended Senior Research Fellow (ESRF) in MONAMI (Modelling of Nanomaterials Intelligently) Indo-EU Project under DST, Satyendra Nath Bose National Centre for Basic Sciences, Kolkata, India from March 2009 - July 2010.
 - ii. Research Associate in MONAMI (Modeling of Nanomaterials Intelligently) Indo-EU Project under DST, Indian Association for the Cultivation of science, Jadavpur , India from August 2010 - July 2011.
 - iii. Assistant Professor in Department of Basic Science, Gargi Memorial Institute of Technology (GMIT), (Approved by AICTE and affiliated to West Bengal University of Technology), Baruipur, West Bengal from August 2011 to March 2013.
 - iv. Assistant Professor in Department of Electronic Science, University of Calcutta from April 2013 to present.

8. Research Interests :

- Condensed matter physics
- Material Science
- Fibre Optics
- Theoretical modelling and simulations of complex systems

9. Research Guidance:

Number of Researchers pursuing Ph. D degree : 02 (registered)

10. Projects:

Projects :Applied

11. Selected list of Publications : (since 2010)

a) Journals :

- Early-time particle dynamics and non-affine deformations during microstructure selection in solids*
J. Phys.: Condens. Matter **23**, 295402 (2011).
- Magneto- structural transitions: molecular dynamics simulations of a united-atom mesoscopic model*
Mod. Phys. Lett. B **27**, No. **7**, 1350047 (2013).
- Aspect ratio-based formulation for far-field characterization of single-mode trapezoidal index fibers*
Optical engineering, **56(4)**, 046106, (2017).
- A comparative study on the performance of RESET based electro-thermal process in ring shaped confined $Ge_2Sb_2Te_5$ and $Ge_1Cu_2Te_3$ chalcogenide memory structures*
Materials Today Communications, **13**, 325, (2017).
- Non-linear effects in aspect ratio-based far-field characterization of single-mode trapezoidal index fibers*
Optik, **171**, 517 (2018).

b) Book Chapters :

- E-wsate and its impact on the environment* , in COHERENCE, vol. 2, Issue 2 (2017).
ISBN : 978-81-930092-8-4

c) Conferences / Seminars / Workshops : (since 2010)

- i) School on Computational Techniques in Soft Matter 2010 (CTSM 10) at Satyendra Nath Bose National Centre for Basic Sciences, Kolkata, 2010.
- ii) MONAMI Conference at Indian Institute of Science, Bangalore, 2011.
Title : *United atom mesoscopic model for ferro-magnetic shape memory alloys.*
- iii) Condensed Matter Days (CMDAYS -2014) at Centre for Nanoscience and Nanotechnology, Acharya Prafulla Chandra Roy Siksha Pragnan, University of Calcutta, Kolkata, August 2014.
Title : *Magneto-structural transitions : molecular dynamics simulations of a united -atom mesoscopic model.*
- iv) Workshop jointly organized by Springer and University of Calcutta at Rashbehari Siksha Pragnan, University of Calcutta in November 2014.
- v) Two-day workshop on “The Modelling, Fabrication and Characterization of Bio-electronic Devices, Circuits and Systems” at Centre for Nanoscience and nanotechnology, Acharya Prafulla Chandra Roy Siksha Pragnan, University of Calcutta in August 2016.
- vi) UGC sponsored National Seminar on “Environmental Awareness : Demand of the day” at The Bhawanipore Education Society College, Kolkata in collaboration with Department of Environmental Science, University of Calcutta, September 2016.
Title : *E-waste and its impact on the environment.*
- vii) Five-day tutorial cum workshop on “ Nano-materials and Devices for Bio-medical Applications” at Centre for Nanoscience and Nanotechnology, Acharya Prafulla Chandra Roy Siksha Pragnan, University of Calcutta in October 2016.
- viii) National Conference on “Advances in Interdisciplinary Sciences - 2017”, organized by Bhairab Ganguly College in association with West Bengal State University (WBSU), at Bhairab Ganguly College , Kolkata in January 2017.
Title : *Chalcogenides – a paradigm for future non-volatile memories and switching applications*
- ix) International Conference on Current Trends in Materials Science and Engineering (CTMSE 2018) Organised by Institute of Engineering & Management, Kolkata and S. N. Bose National Centre for Basic Sciences, Kolkata, January 2018.
Title : *A study of the RESET based electro-thermal process in confined chalcogenide memory structures using $Ge_1Cu_2Te_3$ as phase change memory*

material.

- x) UGC-CPE Sponsored International Conference on “Facets of basic Sciences & Applications (FBSA), organized by IQAC and Bijoy Krishna Girls’ College, Howrah at Bijoy Krishna Girls’ College, Howrah in February 2018.
Title : *Space-time approach to microstructure selection in solid-solid transitions.*
 - xi) State - Government sponsored national seminar on “Environmental Issues”, organized by Vivekananda College for Women, Barisha, Kolkata in April 2018.
Title : *Environmental impacts of nanotechnology*
 - xii) Two-day International Seminar on “Recent Trends in Science Towards Sustainable Development” organized by Acharya Prafulla Chandra College, New Barrackpore, Kolkata in association with Indian Chemical Society, Kolkata in August 2018.
Title : *Theoretical study of solitons using a quantum mechanical approach*
 - xiii) One-day national seminar entitled “Advanced Materials and Devices with Emphasis on Nanotechnology for Green Energy” organized by Bidhan Chandra College, Rishra, Hooghly in January 2019.
 - xiv) National Seminar on “Future India: Science and Technology” organised by City College and Indian Science Congress Association, Kolkata Chapter at City College, Kolkata, February 2019.
Title : *Material dispersion in optical fibre*
12. Membership of Learned Bodies: Life member of Indian Science Congress Association.
13. Invited lectures delivered:
- i) Invited lecture in TIFR-TCIS, Hyderabad, 2014.
Title: *Phase transitions and memory effects in materials.*
14. Awards/ Fellowships:
- National Scholarship Scheme
 - Junior Research fellowship, DST, Government of India.
 - Senior Research fellowship, DST, Government of India.
15. Other Notable Activities:
- i) Course Coordinator for Orientation Programme 108 held at UGC-HRDC, University of Calcutta, Kolkata in 2014.
 - ii) Member of Under Graduate Board of Studies in Electronics, University of Calcutta.