

CURRICULUM VITAE



Name : **DR. ABHIJIT BERA**
Designation : **Assistant Professor**
Department of Physics (UG & PG)
Midnapore College (Autonomous)
Midnapore- 721101, W.B, IN

Date of Birth : 13-11-1988
Education Qualification : **M.Sc., PhD (IACS)**
Thesis Title : **Rectifiers formed between Organic and Inorganic Semiconductors: Characterization by Scanning Tunneling Spectroscopy**
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Date of Joining : 25.04.2017

➤ **List of research papers published in International journals:**

- 1) Magnetic Moment Assisted Layer-by-Layer Film Formation of a Prussian Blue Analog
Abhijit Bera, Sukumar Dey and Amlan J. Pal
Langmuir 29, 2159-2165 (2013)
- 2) Molecular Rectifiers based on Donor/Acceptor Assemblies: Effect of Orientation of the Components' Magnetic Moments
Abhijit Bera and Amlan J. Pal
Nanoscale 5, 6518-6524 (2013)
- 3) Aligned Magnetic Domains in p- and n-Type Ferromagnetic Nanocrystals and in pn-Junction Nanodiodes
Abhijit Bera and Amlan J. Pal
ACS applied materials & interfaces 5, 12083-12088 (2014)
- 4) Band Mapping Across a pn-Junction in a Nanorod by Scanning Tunneling Microscopy
Abhijit Bera, Sukumar Dey and Amlan J. Pal
Nano letters 14, 2000-2005 (2014)
- 5) p-i-n Heterojunctions with BiFeO₃ Perovskite Nanoparticles and p- and n-Type Oxides: Photovoltaic Properties
Soumyo Chatterjee, **Abhijit Bera** and Amlan J. Pal
ACS Appl. Mater. Interfaces 6, 20479-20486 (2014)

- 6) Improvement in PbS-based Hybrid Bulk-Heterojunction Solar Cells through Band Alignment via Bismuth Doping in the Nanocrystals
Sudip K. Saha, **Abhijit Bera**, Amlan J. Pal
ACS applied materials & interfaces 7, 8886-8893 (2015)
- 7) pn-Junction Nanorods in a Polymer Matrix: A Paradigm Shift from Conventional Hybrid Bulk-Heterojunction Solar Cells
Uttiya Dasgupta, **Abhijit Bera** and Amlan J. Pal
Solar Energy Materials and Solar Cells 143, 319-325 (2015)
- 8) Heterodimers Formed through a Partial Anionic Exchange Process: Scanning Tunneling Spectroscopy to Monitor Bands across the Junction vis-à-vis Photoinduced Charge Separation
Abhijit Bera, Sudip K. Saha and Amlan J. Pal
Nanoscale 7, 17366-17374 (2015)
- 9) Spin-polarized Electron Tunneling through Hybrid Organic/Inorganic (Rectifying) Junctions
Abhijit Bera and Amlan J. Pal
Journal of Physical Chemistry C 120, 19011-19017 (2016)
- 10) Chemically Filled and Au-coupled BiSbS₃ Nanorod Heterostructures for Photoelectrocatalysis
Biplab Patra, Santimoy Khilari, **Abhijit Bera**, Shyamal Mehetor, Debabrata Pradhan and Narayan Pradhan
Chemistry of Materials 29, 1116-1126(2017)
- 11) Differential Conductance (dI/dV) Imaging of a Heterojunction-Nanorod
Biswajit Kundu, **Abhijit Bera** and Amlan J. Pal
Nanotechnology 28, 095705 (2017)
- 12) Current Rectification through Atomically-Thin van der Waals Vertical Heterojunctions (WSe₂|MoS₂pn-junctions)
Hrishikesh Bhunia, **Abhijit Bera** and Amlan J. Pal
ACS Applied Materials Interfaces 9, 8248-8254(2017)
- 13) Band-Diagram of Heterojunction Solar Cells through Scanning Tunneling Spectroscopy
Uttiya Dasgupta, **Abhijit Bera** and Amlan J. Pal
ACS Energy Letters 2, 582-591(2017)
- 14) Simultaneous Observation of Surface and Edge States of a 2D Topological Insulator through Scanning Tunneling Spectroscopy and Differential Conducting Imaging
Hrishikesh Bhunia, Abhijit Bar, **Abhijit Bera** and Amlan J. Pal
Physical Chemistry Chemical Physics 19, 9872-9878 (2017)
- 15) Synthesis and Properties of Monolayer Protected Cox (SC₂H₄Ph)_m Nanoclusters
Stephan Pollitt, Ernst Pittenauer, Christoph Rameshan, Thomas Schachinger, Olga V Safonova, Vera Truttmann, **Abhijit Bera**, Günter Allmaier, Noelia Barrabes, Gunther Rupprechter
Journal of Physical Chemistry C 121, 10948-10956 (2017)

16) Promoting Morphology with a Favorable Density-of-States Using Diiodooctane to Improve Organic Photovoltaic Device Efficiency and Charge Carrier Lifetimes
Logan E. Garner, **Abhijit Bera**, Bryon W. Larson, David P. Ostrowski, Amlan J. Pal and Wade A. Braunecker
ACS Energy Letters 2, 1556-1563 (2017)

17) Surface Science Approach to Pt/Carbon Model Catalysis: XPS, STM and Microreactor Studies
Abdul Morin, Thomas Haunold, Andrey Bukhtiyarov, **Abhijit Bera**, Christoph Rameshan and Rupprechter Günther
Applied Surface Science 440, 680-687 (2018)

18) Two Dimensional LaCoO₃ Perovskite Nanocrystals for Catalysis Applications
Nevzat Yigit, **Abhijit Bera** and Rupprechter Günther
Communicated

➤ **Area of Teaching:**

- i) Quantum Mechanics
- ii) Mathematical Methods
- iii) Optics
- iv) Advanced Optics (EM theory, LASER and Fibre Optics)
- v) Analog and Digital Electronics
- vi) Materials Science

➤ **Professional Recognition, Awards and Fellowships:**

- 1) Postdoctoral Research at the Department of Physical Chemistry I, Ruhr University of Bochum, Germany, 2018 (12 months)
- 2) Awarded Asutosh Mookherjee Best PhD Thesis Award-2017 from Indian Association for the Cultivation of Science (2018)
- 3) Postdoctoral Fellow at the Department of Materials Chemistry, Technical University of Vienna, Austria, 2016 (6 months)
- 4) Visiting Scholar at Department of Applied Physics, Aalto University, Espoo, Finland, 2015 (3 months)
- 5) Awarded Senior Research Fellowship by Council of Scientific and Industrial Research (SRF-CSIR) (2013)
- 6) Awarded Junior Research Fellowship by Council of Scientific and Industrial Research (JRF-CSIR) (2011)
- 7) Qualified Graduate Aptitude Test (GATE) Engineering (2011)
- 8) Qualified National Eligibility Test (NET) as a CSIR- JRF (2010)
- 9) Awarded National Scholarship (Merit-cum-Means) (2009)

➤ **Details of Seminars, Conference, Symposium organized/Attended:**

- 1) Coordinator of CKM Memorial Workshop for Experimental Physics from 17th to 20th January, 2018 at Midnapore College Centre for Scientific Culture, West Bengal, India
- 2) Physics Exposure Camp under the Olympiad Programme from November 28th to 1st December, 2017 at Homi Bhabha Centre for Science Education (TIFR), Mumbai
- 3) SFB FOXSI-Seminar 2017, Institute of Materials Chemistry, Vienna University of Technology, Vienna, Austria
- 4) Young Physics Colloquium 2015, Saha Institute of Nuclear Physics, Kolkata, India
- 5) Bringing the Nanoworld Together 2014 (BTNT) is Oxford Instruments 3rd annual seminar for the nanotechnology industry in India, November 24-25, 2014, Saha Institute of Nuclear Physics, Kolkata, India
- 6) India-Singapore Joint Workshop on Advanced Materials and Energy. April 21-24, 2013, Indian Association for the Cultivation of Science, Kolkata, India.
- 7) Seminar on Films of Soft Materials. 2nd December, 2013, Saha Institute of Nuclear Physics, Kolkata, India
- 8) National Workshop on Quantum Perspective of Advanced Materials (QPAM-11), March 23-25, 2011, Vidyasagar University, India

➤ **Associated with any other Organization:**

Life time member at Indian Association for the Cultivation of Science

➤ **Other Academic Activities/Research Interest:**

Ongoing research on 2D based materials; Photovoltaics; Thin Film Transistor; Memory, Switching, Ferroelectric and Magnetoresistive devices, Molecular Electronics etc.

