CURRICULUM VITAE

Nilanjan Mitra **nilanjan@civil.iitkgp.ernet.in**

Indian Institute of Technology, Kharagpur
Department of Civil Engineering
Kharagpur, Midnapur, West Bengal, India 721302
Phone: +91(03222) 283430

B-173 IIT Kgp Campus
Kharagpur, Midnapur, 721302
Phone: +91(03222) 283401
Cell: +91-9475884523

Website: www.facweb.iitkgp.ernet.in/~nilanjan **Alternate Email**: blue.eye.friend@gmail.com

EDUCATION

Ph.D. – Civil Engineering, 2001-January 2007. (Emphasis: Computational Structural Mechanics)
University of Washington, Seattle, Washington, USA
Doctoral Dissertation: ***An analytical study of reinforced concrete beam-column joint behavior under seismic loading.***

M. Tech. – Ocean Engineering, 1999-2001, (Emphasis: Applied Mechanics)
Indian Institute of Technology, Kharagpur, India & Technische Universität, Darmstadt, Germany
Thesis: ***On the control of vortex excited vibrations of bundled conductors in overhead transmission lines.***

B.E. – Civil Engineering, 1994-1998, (Emphasis: Structural Engineering)
Bengal Engineering & Science University, Shibpur, West Bengal, India

NATIONALITY: Indian

US Green card holder: Permanent Resident Status

EMPLOYMENT HISTORY

Associate Professor in **Indian Institute of Technology Kharagpur** (From April 2016)

Assistant Professor in **Indian Institute of Technology Kharagpur** (Date Joined: July 13th 2009)

Faculty in **CalPoly, San Luis Obispo** (Fall 2006 – Spring 2009)

INSTITUTE ADMINISTRATIVE POSITION

Vice Chairman (Civil) Civil Construction of Maintenance: (From October 2016). *Responsibilities*: Oversee all new construction and maintenance works of IIT Kharagpur covering a 2000 acre campus area (which includes not only 19 departments, 13 centers, 12 schools but also housing for all faculties – around 550, students and staff). The total strength of people (inclusive of students, faculties and staff) is around 20,000.

BOOK/BOOK-CHAPTER PUBLICATION

Mitra, N. "Marine Sandwich Structures" in "Wiley Encyclopedia of Composites – 2nd Edition"; 5 volume set edited by Luigi Nicolais and Assunta Borzacchiello and Stuart M. Lee, Published by John Wiley and Sons Inc. [**ISBN-10:** 0470128283; **ISBN-13:** 978-0470128282]

Mitra, N. "Explosion-induced shock waves through a medium ad associated structural response" in "Blast Mitigation strategies in marine composite and sandwich structures"; - Springer transactions in civil and environmental engineering-1st Edition. Edited by Srinivasan Gopalakrishnan and Yapa Rajapakse, Published by Springer Nature Singapore Pte. Ltd. [**ISBN-10:** 9811071691; **ISBN-13:** 978-98110716910]

REFERRED JOURNAL PUBLICATION

- *Deb, S., Mitra, N., Basu Majumdar, S., Maitra, S. (2018). “Improvement in tensile and flexural ductility with the addition of different types of polypropylene fibers in cementitious composites.” ***Construction and Building Materials.*** 180, 405-411.
- *Ghoshal, R., and Mitra, N. (2018). “Underwater Oblique shock wave reflection.” ***Physical Review Fluids.*** 3, 013403.
- *Neogi, A., Mitra, N., Talreja, R. (2018). "Cavitation in epoxies under composite-like stress state." ***Composites Part A***. 106, 52-58.
- *Rawat, S., Mitra, N. (2018). "Evolution of tension twinning in single crystal Ti under compressive uniaxial strain conditions." ***Computational Materials Science***. 141, 302-312.
- *Rawat, S., and Mitra, N. (2018). "Molecular dynamics investigation of c-axis deformation of single crystal Ti under uniaxial stress conditions: Evolution of compression twinning and dislocations." ***Computational Materials Science***. 141, 19-29.
- Mitra, N., *Patra A., *Singh, S.P., *Mondal S., Datta, P.K., Varshney, S.K. (2017). "Interfacial delamination in glass-fiber/polymer-foam-core sandwich composites using Singlemode-multimode-singlemode optical fiber sensors: Identification based on experimental investigation." ***Journal of Sandwich Structures and Materials***. doi: 10.1177/1099636217733983
- *Neogi, A., and Mitra, N. (2017). "A metastable phase of shocked bulk single crystal copper: an atomistic simulation study." ***Scientific Reports***. 7, 7337.
- *Neogi, A., and Mitra, N. (2017). "Shock induced deformation response of single crystal copper: Effect of crystallographic orientations." ***Computational Materials Science***. 135, 141-151.
- *Neogi, A., and Mitra, N. (2017). "Evolution of dislocation mechanism in single crystal Cu under shock loading in different directions." ***Modelling and Simulation in Materials Science and Engineering***. 25, 025013.
- *Rawat, S., and Mitra, N. (2017). "Compression twinning and structural phase transformation of single crystal titanium under uniaxial compressive strain conditions: Comparison of interatomic potentials." ***Computational Materials Science***. 126, 228-237.
- *Ghoshal, R., and Mitra, N. (2016). “Underwater explosion induced shock loading of structures: Influence of water depth, salinity and temperature.” ***Ocean Engineering.*** 126, 22-28.
- *Patra, A., and Mitra, N. (2016). "Mixed mode fracture of sandwich composites: performance improvement with multiwalled carbon nanotube sonicated resin." ***Journal of Sandwich Structures and Materials***. doi: 10.1177/1099636216656485
- *Neogi, A., and Mitra, N. (2016). "Shock compression of poly-vinyl-chloride." ***Journal of Applied Physics***. 119, 165903.
- *Neogi, A., and Mitra, N. (2016). "Shock induced Phase transition in water: Molecular Dynamic investigation." ***Physics of Fluids***. 28, 027104.
- *Ghoshal, R., and Mitra, N. (2015). "High-intensity air-explosion-induced shock loading of structures: consideration of a real-gas in modeling a nonlinear compressible medium." ***Proceedings of the Royal Society of London A: Mathematical, Physical and Engineering Sciences***, 471, 20140825.
- Mondal, S., *Patra, A., Chakraborty, S., Mitra, N. (2015). “Dynamic performance of sandwich composite plates with circular hole/cut-out: A mixed experimental–numerical study.” ***Composite Structures,*** 131, 479-489.
- *Patra, A., and Mitra, N. (2014). "Interface fracture of sandwich composites: Influence on MWCNT sonicated epoxy resin." ***Composites Science and Technology,*** 101, 94-101.
- *Neogi, A., and Mitra N. (2014). “On shock response of nano-void closed/open cell Copper material: Non-equilibrium molecular dynamic simulations.” ***Journal of Applied Physics,*** 115(1), 013504.
- *Ghoshal, R., and Mitra, N. (2014). “On core compressibility of sandwich composite panels subjected to intense underwater shock loads.” ***Journal of Applied Physics,*** 115(2), 024905.

- *Ghoshal, R. Mitra, N. (2012). “Non-contact near field underwater explosion induced shock wave loading of submerged rigid structures: nonlinear compressibility effects in fluid structure interaction.” ***Journal of Applied Physics,*** 112(2), 024911.
- Mitra, N., *Raja, B.R. (2012). "Improving delamination resistance capacity of sandwich composite columns with initial face/core debond." ***Composites Part B: Engineering***, 43(3), 1602-1612.
- Kang, T.H.-K., Mitra, N. (2012). “Prediction of performance of exterior beam-column connections with headed bars subjected to load reversal.” ***Engineering Structures,*** 41, 209-217.
- Mitra, N. and Samui, P. (2012). “Prediction of Inelastic mechanisms leading to seismic failure of interior reinforced concrete beam-column connections.” ***ASCE Practice Periodical on Structural Design and Construction,*** 173(3), 110-118.
- Mitra, N. (2012). “Failure Initiation of reinforced concrete beam-column connections – Binomial logistic regression based probabilistic model.” ***Advances in Structural Engineering***, 15(1), 121-137.
- Mitra, N., Mitra, S. and Lowes, L. N. (2011). “Probabilistic model for failure initiation of reinforced concrete interior beam-column connections subjected to seismic loading.” ***Engineering Structures,*** 33, 154-162.
- Mitra, N. (2010). “A methodology for improving shear performance of marine grade sandwich composites: Sandwich Composite panel with Shear-key.” ***Composite Structures,*** 92, 1065-1072.
- Kang T. H.-K., Shin M., Mitra N. and J. F. Bonacci (2009). “Seismic Design of Reinforced Concrete Beam-Column Joints with Headed Bars.” ***ACI Structural Journal,*** 106(6), 868-877.
- Martin, J., Stanton, J., Mitra, N., and Lowes, L. N. (2007). “Experimental testing to determine concrete fracture energy using simple laboratory test setup.” ***ACI Materials Journal,*** 104(6), 575-584.
- Mitra, N., and Lowes, L.N. (2007). “Evaluation, calibration and verification of a reinforced concrete beam-column joint model.” ***Journal of Structural Engineering ASCE***, 133(1), 105-120.
- Lowes, L. N., Altoontash, A., and Mitra, N. (2005). "Closure to "Modeling Reinforced Concrete Beam-Column Joints Subjected to Cyclic Loading" by Lowes, L.N. and Altoontash, A." ***Journal of Structural Engineering ASCE***, 131(6), 993-994.
- Hagedorn, P., Mitra, N., and Hadulla, T. (2002). “Vortex-excited vibrations in bundled conductors: A mathematical model.” ***Journal of Fluids and Structures***, 16(7), 843-854.

*** Indicates my students (past/present).**

ORAL PRESENTATIONS & CONFERENCE PROCEEDINGS

- Mitra, N., Prasad, D. (2018). “Shock induced phase transformation of single crystal Silicon – Molecular Dynamic Investigations”, ***American Physical Society March Meeting, Los Angeles, March 2018.***
- Deb, S., Sarkar P., Mitra, N., BasuMajumdar S. (2017). “Elastic property estimation of the hydrated cement paste”, ***ASCE Engineering Mechanics Institute Conference, San Diego, June 2017.***
- Neogi, A., Mitra, N. (2017). “Shock induced phase transition of single crystal copper”, ***AIP Conference Proceedings 1832(1) 030011.***
- Rawat, S., Mitra, N. (2017). “Twinning assisted α to ω phase transition in titanium single crystal”, ***AIP Conference Proceedings 1832(1) 030018.***
- Neogi, A., Mitra, N. (2017). “Effects of crystal orientation on shock induced dislocation dynamics on single crystalline copper”, ***TMS 2017, 146th Annual Meeting and Exhibition, San Diego, CA, Feb 26 – Mar 2, 2017.***
- Neogi, A., Mitra, N. (2017). “Orientational dependence of shock induced phase transition of single crystal copper”, ***TMS 2017, 146th Annual Meeting and Exhibition, San Diego, CA, Feb 26 – Mar 2, 2017.***
- Rawat, S., Mitra, N. (2017). “Behaviour of single crystal titanium under high strain rate deformation: a molecular dynamics study”, ***TMS 2017, 146th Annual Meeting and Exhibition, San Diego, CA, Feb 26 – Mar 2, 2017.***
- Neogi, A., Rawat, S., Mitra, N. (2017). “Molecular dynamics simulations of shock induced deformation twinning of FCC single crystal copper”, ***American Physical Society March Meeting, New Orleans, March 2017.***

- Neogi, A., Mitra, N. (2017). "Anisotropic shock response of single crystal titanium: Molecular dynamics investigations", ***American Physical Society March Meeting, New Orleans, March 2017.***
- Mondal, S., Chakraborty, S., Mitra, N. (2016). "Estimation of elastic parameters of sandwich composite plates using gradient based finite element model updating approach", ***ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Stowe, Vermont, September 2016.***
- Patra, A., Mitra, N. (2016). "Influence of multiwalled carbon nanotube on interfacial fatigue performance of glass epoxy polyvinyl chloride core sandwich composite", ***American Society for Composites: 31st Technical Conference, Virginia, September 2016.***
- Mitra, N. (2016). "Interfacial delamination of sandwich composite panels: Real time detection and methodologies for performance improvement", ***11th International conference on Sandwich Structures, Florida, March 2016.***
- Mitra, N., Neogi, A. (2016). "Atomistic simulation of shock induced structural phase transition of single crystal copper", ***American Physical Society March Meeting, Baltimore, March 2016.***
- Neogi, A., Mitra, N. (2016). "Atomistic simulation of shock induced dislocation dynamics and evolution of different plasticity mechanisms in Single crystal copper", ***American Physical Society March Meeting, Baltimore, March 2016.***
- Patra, A., Mitra, N. (2015). "Influence of multiwalled carbon nanotube on mixed mode fracture of sandwich composite", ***American Society for Composites: 30th Technical Conference, Michigan, August 2015.***
- Mitra, N. (2015). "Explosion induced shock wave through a medium and structural response", ***Indo-USA workshop on recent advances in blast mitigation strategies for civil and marine structures, Bangalore, India, August 2015.***
- Mitra, N. (2015). "Intense shock wave through water and impulse transmission in submerged structures", ***30th International Symposium on Shock waves, Tel Aviv, Israel, July 2015.***
- Mitra, N., Neogi, A. (2015). "A molecular dynamic investigation for shock induced phase transition of water", ***19th biennial American Physical Society of Shock compression of condensed matter, Tampa, Florida, June 2015.***
- Neogi, A., Mitra, N. (2015). "Molecular dynamic study of shock wave response of bulk amorphous polyvinyl chloride: effect of chain length and force field", ***19th biennial American Physical Society of Shock compression of condensed matter, Tampa, Florida, June 2015.***
- Mitra, N. (2012). "Binomial logistic regression model for probabilistic assessment of failure of reinforced concrete beam-column joints subjected to seismic action", ***15th World Conference in Earthquake Engineering, Lisbon, Portugal, September 2012.***
- Mitra, N., Ghoshal, R. (2012) "Nonlinear compressibility effects of medium in simulation of submerged rigid plates subjected to underwater explosion", ***10th World Congress on Computational Mechanics, Sao Paulo, Brazil, July 2012.***
- Lakshminarayana, K.S.V., Mitra, S. and Mitra, N. (2011) "Trucks with Different External Frontal Frames: Comparing Vulnerable Road User's Injury Severities Using Madymo", ***3rd International Conference on Road Safety and Simulation, Indianapolis, Indiana, USA, September 2011.***
- Mitra, N. (2011). "Marine grade sandwich composite panel with shear keys." ***16th International Conference on Composite Structures, Porto, Portugal, 201.***
- LaFave, J.M., Shin, M. and Mitra, N. (2009). "Behavior and design of reinforced concrete beam column connections with joint eccentricity". ***Structures Congress, Austin , Texas, USA 2009***.
- Kang, T.H.K., Mitra, N. and Shin, M. (2009). "Headed reinforcement applications for reinforced concrete beam-column connections". ***Structures Congress, Austin Texas, USA 2009***.
- Mitra, N. (2008). "Uncertainty in analytical structural response associated with high level modeling decisions" ***14th. World Conference in Earthquake Engineering***, ***Beijing, China,*** Paper no. 14-0110.
- Mitra, N., and Lowes, L.N. (2008). "Factors influencing analytical continuum simulation of three-point bend test of a concrete notched beam" ***14th. World Conference in Earthquake Engineering***, ***Beijing, China***, Paper no. 05-01-0175.
- Mitra, N. (2008). "Continuum model for RC interior beam-column connection regions" ***14th. World Conference in Earthquake Engineering***, ***Beijing, China***, Paper no. 14-0111.
- Bhattacharya, S., Dash, S.R., Mitra, N., Adhikari, S. and Blakeborough, A. (2008). "Investigation of bending-buckling interaction of piles in liquefiable soils" ***14th. World Conference in Earthquake Engineering, Beijing, China***, Paper no. 04-02-0106.
- Mitra, N., Lowes, L. N. (2007). "A macroscopic model for beam-column joint regions" ***ACI Spring Convention***, April 22-26, 2007.

- Lowes, L.N., Mitra, N., Theiss, A. and Pasputeli, C. (2006). "Modeling nonductile RC components and application to the PEER Van-Nuys test-bed." ***8th. National Conference in Earthquake Engineering, San-Francisco, California***, April 2006, Paper No. 1792.
- Mitra, N., and Lowes, L.N. (2006). "Modeling the behavior of reinforced concrete beam-column building joints subjected to earthquake loading." ***8th. National Conference in Earthquake Engineering, San-Francisco, California***, April 2006, Paper No. 530.
- Mitra, N., and Lowes, L.N. (2004). "Evaluation and advancement of a reinforced concrete beam-column joint model." ***13th. World Conference in Earthquake Engineering, Vancouver, British Columbia, Canada,*** Paper No. 1001.
- Mitra, N., and Lowes, L.N. (2004). "Evaluation and advancement of a RC beam-column joint model." ***5th. International PhD. Symposium in Civil Engineering, Delft, The Netherlands***, Eds. Walraven, J., Blaauwendraad, J., Scarpas, T., and Snijder, B., Balkema Publishers, 325-333.

MAJOR FUNDED PROJECTS (Current and Completed)

- Physics of shock wave propagation through air and water medium – P.I., Funding Source: Office of Naval Research Global, 2018-2021 – Ongoing. [**ONR #N62909-18-1-2057**] Amount: $98,286 (~Rs. 62.5 Lakhs)
- Engineered cementitious composites – a replacement of conventional concrete for sustainable infrastructure – P.I., Funding Source: Ministry of Human Resources India, 2014-2019 – Ongoing. Amount: Rs. 73.2 lakhs
- Response mitigation of structures subjected to projectile impact using sandwich composite technology – P.I., Funding Source: Challenge Seed Grant IIT Kharagpur, 2014-2017 – Completed. Amount: Rs. 25 lakhs
- Real time detection of face/core debond initiation and interfacial delamination propagation morphology in sandwich composite panels using fiber-optic bragg grating sensors – P.I., Funding Source: Indian Space Research Organization, India, 2014-2017 – Completed. Amount: Rs. 49.8 lakhs
- Underwater non-contact explosive response of marine grade sandwich composite panels – P.I., Funding Source: Naval Research Board, India, 2011-2015 – Completed. [**NRB-226/HYD/10-11**] Amount: Rs. 72.5 lakhs
- Assessment of various strategies of seating arrangements for Indian Rail Coaches from the viewpoint of occupants safety – Co P.I., Funding Source: Research Design and Standards Organization, Ministry of Rail, India, 2012-2014. – Completed. Amount: Rs. 30 lakhs
- Improving mechanical performance and delamination resistance in sandwich composite panels – P.I., Funding Source: Dept. of Science and Technology, India, 2011-2014 – Completed. [**SR/S3/MERC-035/2010**] Amount: Rs. 24.6 lakhs
- Reduction of skin-core delamination from the core in the composite sandwich panels for naval structures – P.I., Funding Source: Office of Naval Research, USA, 2009 – Completed. [**ONR # N00014-08-1-1209**] Amount: $65,000 (~Rs. 45.5 Lakhs)
- A novel model for sandwich panels in marine structures: face plate with shear keys – P.I., Funding Source: Office of Naval Research, USA, 2008 – Completed. [**ONR #N00014-07-1-1152**] Amount: $56,000 (~Rs. 39.2 Lakhs)

JOURNAL PUBLICATIONS under REVIEW

- Mondal S., Chakraborty S., Mitra, N. (2017). "Dynamic response characteristics of GFRP composite plates reinforced with multiwalled CNT." Submitted to ***Composites Science and Technology***.
- Mitra, N., *Sarkar, P., *Deb, S., BasuMazumdar, S. (2017). "Estimation of macroscopic elastic constants of hydrated cement by homogenization of microscopic elastic constants of its different constituents." Submitted to ***ASCE Journal of Engineering Mechanics***.
- Mitra, S., and Mitra, N. (2017). "Pedestrian injury severity in event of collision with a truck: are energy absorbing adaptive deformable fronts suitable ?" Submitted to ***International Journal of Vehicular Safety***.

- Mitra, N., *Patra A., Mondal S., and Datta, P.K. (2017). "Real time detection of interfacial delamination crack propagation in polymer foam-cored sandwich composites with Embedded Fiber Bragg-Grating sensor array with wavelength division multiplexing." Submitted to ***Engineering Structures***.
- Bisht, A., Mitra, N., *Neogi, A., Jagadeesh, G., Suwas, S. (2018). "Dislocation nucleation in shock induced perfect FCC single crystal." Submitted to ***Philosophical Magazine***.
- *Deb, S., SamuelRaj, O., Mitra, N., Jagadeesh, G. (2018). "Microstructural response of shock loaded concrete, mortar and cementitious materials in a shock tube setup." Submitted to ***Journal of Materials in Civil Engineering***.
- *Sarkar, P.K., Mitra, N. (2018). "Tricalcium Aluminate under uniaxial compression: a Molecular Dynamics study." Submitted to ***Computational Materials Science***.
- *Prasad, D., Mitra, N. (2018). "Phase transition of cubic diamond single crystal Si under uniaxial compressive loading in different orientations: comparison of interatomic potentials." Submitted to ***Computational Materials Science***.
- *Sarkar, P.K., Mitra, N. (2018). "Tensile response of Tricalcium Aluminate." Submitted to ***Journal of Solid State Chemistry***.
- *Sindhu, S., *Prasad, D., Mitra, N. (2018) "Terrahertz spectroscopy characterization of DGEBA: Molecular vibrations." Submitted to ***Journal of Molecular Structure***.
- *Sindhu, S., Mitra, N., Datta, P.K. (2018) "Epoxy resin exposed to different extreme climatic conditions: A terahertz spectroscopic study" Being written up for submission to ***Composites Science and Technology***
- *Prasad, D., Mitra, N., Banerjee, S. (2018) "Terrahertz spectroscopic determination of tacticity in polypropylene." Submitted to ***Macromolecules***.
- Mitra, N. and Acharya, A. "Damage evolution in materials: Theory based on local redistribution of mass within a body." Being written up for submission to ***Journal of Mechanics and Physics of Solids***.
- *Neogi, A., Mitra, N. "Shock response of a cross-linked epoxy (EPON-862/DETDA): Molecular Dynamic investigation." Being written up for submission to ***Polymer***.
- *Neogi, A., Mitra, N. "Atomistic Shock response of a single crystal Ti." Being written up for submission to ***Computational Materials Science***.
- *Prasad, D., Mitra, N. "Shock induced phase transition of a single crystal Si." Being written up for submission to ***Computational Materials Science***.
- Mitra, N. , *Neogi, A., *Rawat, S. "Shock induced twinning in Cu." Being written up for submission to ***Philosophical Magazine***.

*** Indicates my students (past/present).**

CONTRIBUTIONS to OPEN SOURCE PROGRAMMING

- Introduced *Shear-panel, Pinching4, Bar-Slip, Concrete04 material* models and *Beam-Column Joint* element models in OpenSees environment (http://opensees.berkeley.edu) as a graduate student working under Prof. Laura Lowes at University of Washington, Seattle, USA.

PROFESSIONAL EXPERIENCE (non Academic)

- *RIBE Electroarmaturen, GMBH and Co., Germany – Research Trainee, Jan 2001-Feb 2001*
- *Consulting Engineering Services (India) Ltd. – Structural Design Engineer, 1998- 1999*
- *Stup Consultants Ltd, India. – Trainee Engineer, Summer 1997*

Major Consultancy Experience

- Vetting design of multimodal IWT Terminal at Haldia, West Bengal
- Vetting design of Railway Workshop at Badnera, Gujrat
- Feasibility study of Iso-kinetic stack sampling in existing stacks of Kolaghat thermal Power station, West Bengal
- Vetting design of Pultruded FRP cooling towers for Indian Farmers Fertilizers cooperative limited at Kalol, Gujrat
- Vetting design of canal structure for Teesta Irrigation project, West Bengal
- Assessment of structural soundness of Magazine building at Chandipur, Balasore after an explosion

PhD and PostDoc Student Guidance

PhD Students:

- ***Ritwik Ghoshal*** (Degree conferred 2015). Non-contact explosion induced shock wave response of structures. *Currently* – Assistant Professor at Indian Institute of Technology Patna, India.
- ***Alak Patra*** (Degree conferred 2018). Identification and mitigation of interfacial delamination in sandwich structures. *Currently* – Assistant Professor in National Institute of Technology Sikkim, India.
- ***Anupam Neogi*** (Degree conferred 2018). Materials under extreme conditions: An atomistic study of shock compression. *Currently* – PostDoc student in University of Rochester.
- ***Sutapa Deb*** (Ongoing). *Topic* – Cementitious composite materials.
- ***Prodip Sarkar*** (Ongoing). *Topic* – Atomistic simulations of constituents for cement.
- ***Suma Sindhu*** (Ongoing). *Topic* – Terrahertz spectroscopy of binder materials.

Past PostDoc Students:

- ***Sunil Rawat*** (PhD in Physics from BARC, India – Atomistic Simulation group)
- ***Shyamal Mondal*** (PhD in Physics from IIT Kgp – Photonics group)
- ***Satya Pratap Singh*** (PhD in Physics from IIT Kgp – Photonics group)
- ***Kajal Mondal*** (PhD in Physics from IIT Kgp – Photonics group)