Basant Lal Sharma

Contact Information

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Web of Science AAD-1189-2019
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Scopus 7403255909
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Education

Ph.D., Theoretical & Applied Mechanics, Minor in Mathematics — **Cornell University**
Ithaca, NY, USA — Aug '99 – Sept '04
Dissertation: *"The Kinetic Relation of a Peierls Dislocation in a Higher-Gradient Dispersive Continuum"*
Advisor: Professor Phoebus Rosakis
Committee members: Professor Timothy J Healey (Department of Mathematics, Cornell University) and Professor (late) Lars B. Wahlbin (Department of Mathematics, Cornell University).

B.Tech., Mechanical Engineering — **Indian Institute of Technology Bombay**
Mumbai, Maharashtra, India — Aug '95 – Aug '99
Advisor: Professor (late) S. K. Maiti

Academic Experience

Associate Professor — **Indian Institute of Technology Kanpur**
Department of Mechanical Engineering
Kanpur, U.P., India — Jul '22 – Present
Teaching & Research

Assistant Professor — **Indian Institute of Technology Kanpur**
Department of Mechanical Engineering
Kanpur, U.P., India — Jan '07 – Jun'22
Teaching & Research

Postdoctoral Research Fellow — **Ecole Polytechnique**
Laboratoire de Méchanique des Solides
Palaiseau, France — Oct '05 – Sept '06
Research concerning development of a continuum based theory behind nucleation and propagation of defects in solid matter (Truskinovsky, L.)

Postdoctoral Research Associate — **Cornell University**
Theoretical & Applied Mechanics
Ithaca, NY, USA — Oct '04 – April '05
Research on Kuramoto Model of Coupled Oscillators (Strogatz, SH)

Teaching Assistant — **Cornell University**
Theoretical & Applied Mechanics
Ithaca, NY, USA — Fall '99 – Spring '04
Organising recitation sections, grading and holding office hours for Freshman and Sophomore level courses on Linear Algebra, Calculus and Differential equations, Statics and Dynamics, Mechanics of Solids; Junior level course on Differential equations, Probability and Statistics; First year Graduate level courses on Finite Element Methods, Methods of Applied Mathematics

Research Assistant — **Cornell University**
Theoretical & Applied Mechanics
Ithaca, NY, USA — Summers '00 – '04
Research on Dynamics of Dislocations in Continuum framework

Specialization

Mathematical Analysis of Crystalline Defects, Dynamics of Lattices, and Elasticity.

Research Interests

(1) Mechanics and Thermodynamics of Continuum and Discrete Media, Dislocations, Brittle Fracture, Solid-Solid Phase transformation, Wave Scattering, Nonlinear Elasticity, Cosserat

Elasticity.

(2) Wiener–Hopf Factorization, Toeplitz Operator Theory, Fourier Analysis, Geometric Algorithms, Symplectic Algorithms, Calculus of Variations, Structure of Hamiltonian Systems, Special Functions.

2024

(1) Garnier J, Sharma BL, *"Surface waves in randomly perturbed discrete Gurtin-Murdoch models"*, *Journal of Statistical Physics*, **under review**, 2024, 1–35

(2) Novikov RG, Sharma BL, "Inverse source problem for discrete Helmholtz equation", *Inverse Problems*, **under review**, 2024, 1–12 https://arxiv.org/abs/2401.14103

(3) Garnier J, Sharma BL, "Effective dynamics in lattices with random mass perturbations", *Communications in Mathematical Sciences*, **under review**, 2024, 1–25 (see Footnote 1) https://arxiv.org/abs/2309.03090

(4) Sharma BL, "Scattering of surface waves by inhomogeneities in crystalline structures" , invited article for a special collection in *Proceedings of the Royal Society A* on "Mathematical theory and applications of multiple wave scattering", 2024, 1–29, doi 10.1098/rspa.2023.0683. (see Footnote 1) https://arxiv.org/abs/2309.08552

(5) Nieves M, Sharma BL, "Interaction of in-plane waves with a structured penetrable line defect in an elastic lattice ", *International Journal of Engineering Science*, Volume 197, 1 April 2024, 104011 (see Footnote 1)

2023

(1) Novikov RG, Sharma BL, "Phase recovery from phaseless scattering data for discrete Schrödinger operators", *Inverse Problems*, Volume 39, Number 12, 2023, 1–12[1]

(2) Sharma BL, Perroti LE, Dharmavaram S, "Computational Modeling of Coupled Interactions of Fluid Membranes with Embedded Filaments", *Computer Methods in Applied Mechanics and Engineering*, Volume 417, Part A, 1 December 2023, 116441

(3) Dharmavaram S, Sharma BL, "Generalizing Parametric Invariance in the Calculus of Variations", *Mathematics and Mechanics of Solids* (in press) , 2023, 1–27

2022

(1) Sharma BL, *"Surface wave across crack-tip in a lattice model"*,
Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 380:20210396
DOI 10.1098/rsta.2021.0396
http://doi.org/10.1098/rsta.2021.0396

2021

(1) Sharma BL, *"A dislocation dipole in one dimensional lattice model"*,
Philosophical Magazine, 2021, 101(20):2216–2259
DOI 10.1080/14786435.2021.1964703
https://www.tandfonline.com/doi/full/10.1080/14786435.2021.1964703

(2) Sharma BL, Basak N, *"Null Lagrangians in Cosserat elasticity"*,
Journal of Elasticity, 2021, 143:337–358
DOI 10.1007/s10659-021-09818-8
https://link.springer.com/article/10.1007/s10659-021-09818-8

(3) Basak N, Sharma BL, *"Null lagrangians in linear theories of micropolar type and few other generalizations of elasticity"*,
Zeitschrift für angewandte Mathematik und Physik, 2021, 72:9
DOI 10.1007/s00033-020-01433-2
https://link.springer.com/article/10.1007/s00033-020-01433-2

2020

(1) Liu Z, McBride A, Sharma BL, Steinmann P, *"Coupled electro-elastic deformation and instabilities of a toroidal membrane"*,
Journal of the Mechanics and Physics of Solids, 2020, 151:104221
DOI 10.1016/j.jmps.2020.104221
https://www.sciencedirect.com/science/article/pii/S0022509620304385

[1]Thanks to the programmes during Jan-Jun 2023 in the Isaac Newton Institute for Mathematical Sciences at Cambridge University, UK

(2) Sharma BL, Saxena P, *"Variational principles of nonlinear magnetoelastostatics and their correspondences"*,
Mathematics and Mechanics of Solids, 2020, 26(10):1424–1454
DOI 10.1177/1081286520975808
https://journals.sagepub.com/eprint/H2PV98PZIHKMC9IXF37T/full

(3) Sharma BL, *"Discrete scattering by two staggered semi-infinite defects: reduction of matrix Wiener–Hopf problem"*,
Journal of Engineering Mathematics, 2020, 123:41–87
DOI 10.1007/s10665-020-10054-7
https://link.springer.com/article/10.1007/s10665-020-10054-7

(4) Sharma BL, *"Transmission of waves across an atomic step discontinuity in nanoribbon-like lattice structures"*,
Zeitschrift für angewandte Mathematik und Physik, 2020, 71:73
DOI 10.1007/s00033-020-01294-9
https://link.springer.com/article/10.1007%2Fs00033-020-01294-9

(5) Saxena P, Sharma BL, *"On equilibrium equations and their perturbations using three different variational formulations of nonlinear electroelastostatics"*,
Mathematics and Mechanics of Solids, 2020, 25(8):1589–1609
DOI 10.1177/1081286520911073
https://journals.sagepub.com/doi/abs/10.1177/1081286520911073

2019

(1) Maurya G, Sharma BL, *"Wave scattering on lattice structures involving array of cracks"*,
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476:20190966
DOI 10.1098/rspa.2019.0866
https://royalsocietypublishing.org/doi/pdf/10.1098/rspa.2019.0866

(2) Sharma BL, Mishuris G, *"Scattering on a square lattice from a crack with damage zone"*,
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476: 20190686
DOI 10.1098/rspa.2019.0686
https://royalsocietypublishing.org/doi/pdf/10.1098/rspa.2019.0686

(3) Sharma BL, Maurya G, *"Discrete scattering by a pair of parallel defects"*,
Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 378:20190102
DOI 10.1098/rsta.2019.0102
https://royalsocietypublishing.org/doi/pdf/10.1098/rsta.2019.0102

(4) Sharma BL, Eremeyev V, *"Wave transmission across surface interfaces in lattice structures"*,
International Journal of Engineering Science, 2019, 145:103173
DOI 10.1016/j.ijengsci.2019.103173
https://www.sciencedirect.com/science/article/pii/S0020722519316362

(5) Maurya G, Sharma BL, *"Scattering by two staggered semi-infinite cracks on square lattice: an application of asymptotic Wiener–Hopf factorization"*,
Zeitschrift für angewandte Mathematik und Physik, 2019, 70:133
DOI 10.1007/s00033-019-1183-2
https://link.springer.com/article/10.1007/s00033-019-1183-2

(6) Eremeyev V, Sharma BL, *"Anti-plane surface waves in media with surface structure: discrete vs. continuum model"*,
International Journal of Engineering Science, 2019, 143:33–38
DOI 10.1016/j.ijengsci.2019.06.007
https://www.sciencedirect.com/science/article/pii/S0020722519311838

(7) Sharma BL, *"On electronic conductance of partially unzipped armchair nanotubes: further analysis"*,
The European Physical Journal B, 2019, 92:1
DOI 10.1140/epjb/e2018-90391-2
https://link.springer.com/article/10.1140/epjb/e2018-90391-2

2018

(1) Sharma BL, *"Electronic transport across a junction between armchair graphene nanotube and zigzag nanoribbon"*,
The European Physical Journal B, 2018, 91:84
DOI 10.1140/epjb/e2018-80647-2
https://link.springer.com/article/10.1140%2Fepjb%2Fe2018-80647-2

(2) Sharma BL, *"On prototypical wave transmission across a junction of waveguides with honeycomb structure"*,
Zeitschrift für angewandte Mathematik und Physik, 2018, 69:16
DOI 10.1007/s00033-018-0909-x
https://link.springer.com/article/10.1007%2Fs00033-018-0909-x

(3) Sharma BL, *"On linear waveguides of zigzag honeycomb lattice"*,
Waves in Random and Complex Media, 2018, 28(1):96–138
DOI 10.1080/17455030.2017.1331061
http://www.tandfonline.com/doi/full/10.1080/17455030.2017.1331061

2017

(1) Sharma BL, *"On scattering of waves on square lattice half-plane with mixed boundary condition"*,
Zeitschrift für angewandte Mathematik und Physik, 2017, 68:120
DOI 10.1007/s00033-017-0854-0
https://link.springer.com/article/10.1007/s00033-017-0854-0

(2) Sharma BL, *"On linear waveguides of square and triangular lattice strips: an application of Chebyshev polynomials"*,
Sādhanā, 2017, 42(6):901–927
DOI 10.1007/s12046-017-0646-4
https://link.springer.com/article/10.1007/s12046-017-0646-4

(3) Sharma BL, *"Continuum limit of the discrete Sommerfeld problems on square lattice"*,
Sādhanā, 2017, 42(5):713–728
DOI 10.1007/s12046-017-0636-6
http://link.springer.com/article/10.1007/s12046-017-0636-6

2016

(1) Sharma BL, *"On energy balance and the structure of radiated waves in kinetics of crystalline defects"*,
Journal of the Mechanics and Physics of Solids, 2016, 96:88–120
DOI 10.1016/j.jmps.2016.05.036
http://www.sciencedirect.com/science/article/pii/S0022509615303513

(2) Sharma BL, *"Wave propagation in bifurcated waveguides of square lattice strips"*,
SIAM Journal on Applied Mathematics, 2016, 76(4):1355–1381
DOI 10.1137/15M1051464
http://epubs.siam.org/doi/abs/10.1137/15M1051464

(3) Sharma BL, *"Edge diffraction on triangular and hexagonal lattices: Existence, uniqueness, and finite section"*,
Wave Motion, 2016, 65:55–78
DOI 10.1016/j.wavemoti.2016.04.005
http://www.sciencedirect.com/science/article/pii/S0165212516300105?np=y

(4) Sharma BL, *"Diffraction of waves on triangular lattice by a semi-infinite rigid constraint and crack"*,
International Journal of Solids and Structures, 2015, 80:465–85
DOI 10.1016/j.ijsolstr.2015.10.008
http://www.sciencedirect.com/science/article/pii/S0020768315004242

2015

(1) Sharma BL, *"Diffraction of waves on square lattice by semi-infinite rigid constraint"*,
Wave Motion, 2015, 59:52–68
DOI 10.1016/j.wavemoti.2015.07.008
http://www.sciencedirect.com/science/article/pii/S0165212515001146

(2) Sharma BL, *"Discrete Sommerfeld diffraction problems on hexagonal lattice with a zigzag semi-infinite crack and rigid constraint"*,
Zeitschrift für angewandte Mathematik und Physik, 2015, 66:3591–3625
DOI 10.1007/s00033-015-0574-2
http://link.springer.com/article/10.1007/s00033-015-0574-2#

(3) Sharma BL, *"Near-tip field for diffraction on square lattice by rigid constraint"*, **Zeitschrift für angewandte Mathematik und Physik**, 2015, 66:2719–2740
DOI 10.1007/s00033-015-0508-z
http://link.springer.com/article/10.1007/s00033-015-0508-z

(4) Sharma BL, *"Near-tip field for diffraction on square lattice by crack"*, **SIAM Journal on Applied Mathematics**, 2015, 75(4):1915–1940
DOI 10.1137/15M1010646
http://epubs.siam.org/doi/ref/10.1137/15M1010646

(5) Sharma BL, *"Diffraction of waves on square lattice by semi-infinite crack"*, **SIAM Journal on Applied Mathematics**, 2015, 75(3):1171–1192
DOI 10.1137/140985093
http://epubs.siam.org/doi/ref/10.1137/140985093

2007

(1) Sharma BL, Vainchtein A, *"Quasistatic propagation of steps along a phase boundary"*, **Continuum Mechanics and Thermodynamics**, 19(6):347–377, November, 2007
DOI 10.1007/s00161-007-0059-4
https://link.springer.com/article/10.1007/s00161-007-0059-4

Other papers in open-domain

(1) Sharma BL, *"Wiener-Hopf factorisation on the unit circle: some examples of discrete scattering problems"*, **arXiv:1912.05797**, 2019, 16 pages
https://arxiv.org/abs/1912.05797

(2) Sharma BL, *"A Family of Solitary Waves in Frenkel-Kontorova Lattice"*, **arXiv:1910.06904**, 2019, 23 pages
http://arxiv.org/abs/1910.06904

(3) Sharma BL, *"Energy expense via lattice wave emission for mode III brittle fracture in square, triangular, and hexagonal lattices"*, **arXiv:1909.06368**, 2019, 12 pages
http://arxiv.org/abs/1909.06368

(4) Sharma BL, *"Synchronization of globally coupled oscillators without symmetry in the distribution of natural frequencies"*, **arXiv:1909.08513**, 2019, 12 pages
https://arxiv.org/abs/1909.08513

(5) Sharma BL, *"Scattering of electronic waves in square and triangular lattice half-planes with monoatomic step"*, **arXiv:1909.00129**, 2019, 37 pages
https://arxiv.org/abs/1909.00129

(6) Sharma BL, *"Conductance of discrete bifurcated waveguides as three terminal junction"*, **arXiv:1808.02834**, 2018, 25 pages
https://arxiv.org/abs/1808.02834

(7) Sharma BL, *"Kinematically restricted phonon transmission in partly-unzipped tubes of square and triangular lattices"*, **arXiv:1808.01873**, 2018, 24 pages
https://arxiv.org/abs/1808.01873

(8) Sharma BL, *"Glimpse of discrete mechanics"*, Directions IITK, May 2014, 76–86
http://home.iitk.ac.in/~bls/Homepage/Home_files/jdirections1.pdf

Manuscripts In-Process

(1) P. Gibson, Sharma BL, *"On relationships between spectral theory and inverse scattering "*, *manuscript under preparation*, 2023, 1–20 (see Footnote 1)

(2) I. David Abrahams, Sharma BL, *"Wiener-Hopf factorization of a special matrix "*, *manuscript under preparation*, 2023, 1–20 (see Footnote 1)

(3) Sharma BL, I. David Abrahams, *"Scattering on square lattice due to a crack with asymmetric surface structure "*, *manuscript under preparation*, 2023, 1–20 (see Footnote 1)

(4) Das D., Sharma BL, *Symmetry based Lyapunov-reduction for local analysis of instabilities in a plate with stiffened edge, to be submitted*, 2023, 1–20

(5) Das D., Sharma BL, *Post-buckling analysis of instabilities in a plate with stiffened edge, to be submitted*, 2023, 1–20

(6) Pandurangi, S., Sharma BL, *On certain instabilities in soap films spanning a flexible rod*, *ongoing research*, 2023, 1–20

(7) Garnier J, Sharma BL, *"On 'averaging' scattering due to certain randomly arranged defects on lattices"*, *ongoing research*, 2023, 1–20 (see Footnote 1 on page 2)

(8) Fliss S, Sharma BL, *"A discrete DtN formulation for scattering due to a finite size defect on square lattice"*, *ongoing research*, 2023, 1–20 (see Footnote 1 on page 2)

(9) Sharma BL, Rosakis P, *"Dissipation due to dispersion and the kinetic relation of a dislocation" to be submitted* to Journal of the Mechanics and Physics of Solids, 2023, 1–40

(10) Maurya G, Sharma BL, *"Transmission of antiplane surface wave across a structured surface interface in elastic media"*, *to be submitted*, 2023, 1–30

Media coverage

(1) *"Unzipping graphene nanotubes into nanoribbons"*, eurekalert.org, 5 June 2018: https://www.eurekalert.org/pub_releases/2018-06/s-ugn060518.php

(2) *"Unzipping graphene nanotubes into nanoribbons"*, phys.org, 5 June 2018: https://phys.org/news/2018-06-unzipping-graphene-nanotubes-nanoribbons.html

(3) *"Unzipping graphene nanotubes into nanoribbons: Elegant mathematical solution explains how flow of electrons changes when carbon nanotubes turn into zigzag nanoribbons"*, www.sciencedaily.com, ScienceDaily, 5 June 2018: https://www.sciencedaily.com/releases/2018/06/180605103416.htm

(4) *"Unzipping graphene nanotubes into nanoribbons"*, http://nano-magazine.com/, 7 June 2018: https://nano-magazine.com/news/2018/6/7/unzipping-graphene-nanotubes-into-nanoribbons

Miscellaneous

(1) Jan 2019: The paper "On linear waveguides of square and triangular lattice strips: an application of Chebyshev polynomials" in Sādhanā, 42(6):901-927, 2017, has been **downloaded 2.3K times**

(2) Jan 2019: The paper "Continuum limit of the discrete Sommerfeld problems on square lattice" in Sādhanā, 42(5):713-728, 2017 has been **downloaded 3.1K times**

(3) Nov 2015: The article (as recorded on 24 Nov 2015) 'Diffraction of waves on square lattice by semi-infinite rigid constraint' in: Wave Motion 59 (2015), pp. 52-68, featured in the 'Most Downloaded Wave Motion Articles' (downloaded from ScienceDirect in the 'last' 90 days) at the second position during last November.

Reviewer

(1) International Journal of Mechanical Sciences

(2) International Journal of Solids and Structures

(3) The European Physical Journal Plus

(4) Chemical Engineering Science

(5) International Journal of Aeroacoustics

(6) Journal of Peridynamics and Nonlocal Modeling

(7) Scientific Reports, Nature

(8) Mechanics of Materials

(9) Journal of Engineering Mathematics

(10) Waves in Random and Complex Media

(11) Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences

(12) Mathematics and Mechanics of Solids

(13) Wave Motion

(14) Journal of Polymer Research

(15) Physica Scripta

(16) Journal of Mechanics of Materials and Structures

(17) International Journal of Fracture

(18) Cambridge University Press

(19) The European Physical Journal B

(20) Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences

(21) Continuum Mechanics and Thermodynamics

(22) Zeitschrift für angewandte Mathematik und Physik

(23) Philosophical magazine

(24) Sādhanā

(25) SIAM Journal on Applied Mathematics

(26) Acta Mechanica

(27) Oxford University Press

Instruction of Courses

"Mechanics of Solids","Dynamics","Advanced Mechanics of Solids","Introduction to Solid Mechanics","Introduction to Continuum Mechanics","Mathematics for Engineers","Wave propagation in solids","Dynamic Fracture Mechanics","Difference Equations for Engineers","Calculus of Variations","Hamiltonian Mechanics & Symplectic Algorithms","Theory of Martensitic Phase Transformation","Mechanics of Biological Membranes"

Postdocs

(1) Chaudhary, S, Numerical solution of certain scattering problems in elastodynamics, Since Dec 2022, IIT Kanpur

Ongoing Ph.D. Theses

(1) Das, D, "Certain instabilities arising due to low dimensional aspects of three dimensional theories of elasticity", Since Aug 2018, IIT Kanpur

Mentored Ph.D. Theses

(1) Maurya, G, "On some problems involving multiple scattering due to edges", Dec 2018, IIT Kanpur

Mentored M.Tech. Theses

(1) Patel, D, "A study of electric charge and dipole induced structural changes in polymer ring and chain using MD simulations", M. Tech. thesis, IIT Kanpur, June 2017 (with M. Singh)

(2) Ahmad, S, "One dimensional continuum models of lattice defects", M. Tech. thesis (dual degree), IIT Kanpur, June 2017

(3) Pathak, A, "Application of Homotopy based continuation method for the determination of mechanical equilibria", M. Tech. thesis, IIT Kanpur, June 2016

(4) Khan, MK, "Study and validation of solutions to the forward problem of electrical impedance tomography", M. Tech. (dual degree) thesis, IIT Kanpur, May 2014 (with P. Munshi)

(5) Kedia, AK, "On Bulk Modes of a Semi-Infinite Two Dimensional Square Lattice", M. Tech. thesis, IIT Kanpur, July 2013

(6) Gautam, DK, "On Numerical Implementation of a Finite Difference Method for Transient Anti Plane Dynamics of Semi Infinite Linear Elastic Continuum", M. Tech. thesis, IIT Kanpur, Aug 2012

(7) Singh, P, "On a Numerical method for finding Mechanical Equilibria of Nonlinearly interacting Particles in Two Dimensions", M. Tech. thesis, IIT Kanpur, Aug 2012

(8) Prakash, U, "On Deformation of a Semi Infinite Lattice due to Forces applied on the Boundary using a Semi Analytical method", M. Tech. thesis, IIT Kanpur, Aug 2012

(9) Chaurasia, V, "On Hamiltonian Dynamics of a Chain of Rigid Bodies", M. Tech. (dual degree) thesis, IIT Kanpur, May 2012

(10) Shaw, SK, "Study of extraordinary fracture energy of double network hydrogels using shear lag model", M. Tech. thesis, IIT Kanpur, May 2012 (with S. Mahesh)

(11) Jhanwar, R, "On certain conservative and discrete models for a chain of particles and rigid bodies, M. Tech. (dual degree) thesis, IIT Kanpur, Aug 2011

(12) Goyal, R, "Application of Symplectic Algorithms to Some Simple Hamiltonian Models of Reconstructive Phase Transformations and Dislocations", M. Tech. (dual degree) thesis, IIT Kanpur, July 2009

Mentored B.Tech. Projects

(1) 2019-20: Sukhjeevan Bansal, Saubhagya Soni, Sushmit Soni
(2) 2019-20: Aditya Singh, Karan Goyal, Akash Meena
(3) 2018-19: Mayank Kumar Yadav, Hakam Ram, Arpit Agrawal
(4) 2018-19: Brajesh Kumar, Deepak Shakyawar, Suyash Sinha
(5) 2011-12: Anurag Agarwal, Milan Singh, Shivam Sharma

Administrative Work

Department level:
ME Budget committee member 2022-23
DPGC member 2015-16
DUGC member 2009-10, 2015-16
Acting DUGC convener April 29 to May 15, 2010
Condemnation committee convener 2014-15
Nominee to Institute International Relations Committee (IIRC) 2019-20
Ph. D. Comprehensive Exam Committee 2020-21
Ph. D. Admissions Exam Committee 2020-21
Others: M.Tech. interview/written examinations, QIP MTech interview committees, PhD. examination & interview committees, Junior technician examination committees

Institute level:
SLC member 2014-15, 2015-16, 2016-17,
Acting SLC convener 24/5/2017 to 25/6/2017
SLC generalia committee Dec 2015, May 2016, August 2017
Cadence medal committee May 2007
GATE/ME question setters committee (Mathematics and Solid Mechanics)
GATE/XE question setters committee (Mathematics)
Others: JEE representative, JEE counselling, GATE representative

Other committees outside department:
M.Tech. interviews (external): Computer Science and Engineering
PhD. interviews (external): Mathematics & Statistics
PhD. defense/examination committee: Mathematics & Statistics, Physics
Other PhD. examination committees: Mathematics & Statistics, Electrical Engineering,
M.Tech defense/examination committees (external): Aerospace Engineering, Civil Engineering, Computer Science and Engineering, Chemical Engineering, Environmental Engineering and Management Programme, Nuclear Engineering and Technology

External Funds

(1) MATRICS Project MTR/2017/000013: "Wave propagation in lattice waveguides with defects": Mathematical Research Impact Centric Support (MATRICS) to the Science and Engineering Research Board (SERB)

Honors, Awards & Recognition

(1) Plenary speaker, QIPA2023, *Moscow Institute of Physics and Technology*
(2) Jan-Feb 2023: Simons fellow at Isaac Newton Institute for Mathematical Sciences, Cambridge.
(3) May 2016: Nomination for C.N.R. Rao award at IITK.
(4) Director's letter for excellence in teaching (SE394 in the 2008-I semester)
(5) EGIDE Fellowship '05-'06, Ecole Polytechnique, Palaiseau, France
(6) SIAM Student Travel Award for the SIAM Conference on Nonlinear Waves and Coherent Structures, 2004
(7) SIAM Student Travel Award for the SIAM Conference on Mathematical Aspects of Materials Science, 2004
(8) State Merit Award for P.E.T. 1995 distributed by the state Governor, MP, India, 1996
(9) All India Talent Search Award'93 and Scholarship distributed by the Prime Minister of India, 1993–94
(10) National Talent Search Scholarship, 1992
(11) Merit Scholarship for Highest Marks, 1990–92

Skills

Computer: Knowledge of Mathematica, Matlab, Maple, C/C++; Environments of Unix, Windows, OS X

Languages: Hindi (mother tongue); also studied English, Russian, Sanskrit, German, and French through some courses.

Extra-curricular: Fine Arts, Dramatics; recipient of several prizes at the district level competitions for sketching, painting, hand-writing and GK quiz during Kindergarten (Guna), primary (Guna), secondary (Guna) and higher secondary school (Indore); recipient of several prizes in sketching during inter-college events in Mumbai (Malhar '95-'96, St. Xavier's college Mumbai; Saarang '96, IIT Madras) and intra-college events ('95-'99) in IIT Bombay; elected as hostel 7 secretary and organizer of Mood-Indigo events in 1996-97 for fine arts in IIT Bombay; elected as institute secretary in 1997-98 for fine arts in IIT Bombay; recipient of best voice-over prize in dramatics and PAF'99 of IIT Bombay; recipient of the scroll award (second to the award of roll of honour) in 1999 from Hostel 7 residents of IIT Bombay.

Affiliations

Society for Natural Philosophy

Seminars, Conference Presentations

(1) Plenary talk in the ninth international conference "Quasilinear Equations, Inverse Problems and their Applications" (QIPA2023) taking place in the *Moscow Institute of Physics and Technology* from December 4 to December 6, 2023

(2) Apr '23: Invited to give a lecture 'On scalar waves in lattices with defects and interfaces on surfaces' on 11 April 2023 at the Applied Mathematics seminar during visit to the *Department of Mathematical Sciences*, *Univeristy of Liverpool*, Liverpool, L69 7ZL, England, UK on 10-12 April 2023. The visit is funded by Univeristy of Liverpool.

(3) Feb '23: Invited to give a lecture 'Some illustrative problems in the discrete scattering theory' on 20 February 2023 at the Asymptotics, Operators, and Functionals (AOF) Seminar during visit to the *Department of Mathematical Sciences* of the *University of Bath*, Bath, Bath, BA2 7AY, UK, on 20-21 February 2023. The visit was jointly funded by University of Bath and Isaac Newton Institute for Mathematical Sciences.

(4) Feb '23: Invited to give a talk on 6 February 2023 in workshop on *Canonical Scattering Problems* (https://www.newton.ac.uk/event/mwsw01/) from the 6th to the 10th of February 2023 as a subset of *"Mathematical theory and applications of multiple wave scattering"*, taking place from January to June 2023, in Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK.

(5) Jan '23: Invited to give a talk 'Some illustrative problems in discrete scattering theory: lessons from classical problems for novel lattice materials' on 20 January 2023 (online) in the Discipline of *Mechanical Engineering* at *IIT Gandhi Nagar*, India.

(6) Jan '23: Invited to give a seminar 'Surface waves in lattice models' in the *School of Computer Science and Mathematics* at *Keele University* on 18th January 2023, Keele, Staffordshire, UK, ST5 5NH during visit to the same venue on 17-19 January 2023. The visit was jointly funded by Keele University and Isaac Newton Institute for Mathematical Sciences.

(7) Jan '22: *"Some problems in discrete scattering and lattice mechanics"* — Invited "guest lecture" in the Workshop on Functional Analysis and its Applications (January 14–16, 2022), Department of Applied Sciences, IIIT Allahabad, U. P., India

(8) Jan '20: *"An example from discrete scattering theory"* — Invited talk in Analysis Seminar of Department of Mathematics, Indian Institute of Technology Kanpur, U. P., India

(9) Aug'19: *"Wiener-Hopf factorisation on the unit circle: some examples of discrete scattering problems"* — Invited talk in *"Factorisation of matrix functions: New techniques and applications [WHTW01]"*, https://www.newton.ac.uk/event/whtw01/, Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK.

(10) May'19: *"On the discrete scattering effects due to edges in certain simple structures"* — Invited talk at *the institute of Applied and Computational Mathematics* in the Foundation of Research and Technology, Crete, Greece.

(11) May'19: *"Discrete Sommerfeld problems and nanoscale transport: some lessons from elementary mathematical techniques"* — A part of three day series of lectures on theoretical results involving lattices. Invited talks at Faculty of engineering, Politecnico di Bari, Polignano a Mare - Bari, Italy.

(12) May'19: *"Steady state kinetics of lattice defects: prototype models and energy balance"* — A part of three day series of lectures on theoretical results involving lattices. Invited talks at Faculty of engineering, Politecnico di Bari, Polignano a Mare - Bari, Italy.

(13) May'19: *"Discrete scattering by a crack"* — A part of three day series of lectures on theoretical results involving lattices. Invited talks at Faculty of engineering, Politecnico di Bari, Polignano a Mare - Bari, Italy.

(14) May'19: Invited weeklong series of lectures "Waves on lattices: case of scattering due to crack on square lattice". Faculty of Civil and Environmental Engineering, Gdansk University of Technology, Gdansk, Poland.

(15) Apr'19: *"On analysis and applications of discrete scattering theory involving edges"* — Invited talk at the Glasgow Computational Engineering Center, University of Glasgow, Glasgow, UK.

(16) Apr'19: *"On the discrete scattering effects due to edges in certain simple structures"* — Invited talk (ACM Research Seminar) at the School of Engineering, Cardiff University, Cardiff, Wales, CF10 3AT, UK.

(17) Apr'19: *"On the discrete scattering effects due to edges in certain simple structures"* — Invited talk at the Department of Mathematics, Keele University, Keele, Staffordshire, UK, ST5 5NH.

(18) Apr'19: *"Wave propagation in lattices and structured media"* — Invited talk at the Center for Mechanics of Solids, Structures and Materials (CMSSM), The University of Texas at Austin, Austin, Texas, USA.

(19) Apr'19: *"On the analysis and applications of discrete scattering theory in bifurcated lattice waveguides"* — Invited talk at the Center for Materials, Paris Mines Tech, Evry, Paris, France.

(20) Apr'19: *"On the analysis and applications of discrete scattering theory in bifurcated lattice waveguides"* — Invited talk at the Center for Morphology of Materials, Paris Mines Tech, Fontainbleau, France.

(21) Mar'19: *"On the discrete scattering effects due to edges in certain simple structures"* — Invited talk at Dipartimento di Ingegneria Meccanica, Chimica e dei Materiali, Universitá di Cagliari, Italy.

(22) Jan '19: *"On an elementary analysis and some applications of scattering theory involving edges in a discrete framework"* — Invited talk at Tata Institute of Fundamental Research, Centre for Applicable Mathematics, Sharada Nagar, Chikkabommasandra, Bangalore 560065, India.

(23) Oct '18: *"On some examples of discrete scattering in simple structures and their applications in mechanics and physics"* — Invited talk at the workshop 'Dynamic phenomena in media with microstructure' (supported by Israel Science Foundation), 07–12 of October 2018, Faculty of Engineering, Tel Aviv University, Israel.

(24) Jun '17: *"Some reflections on the discrete aspects of solid mechanics"* — Invited talk at IITH Solid Mechanics Symposium, June 19-20, 2017, Indian Institute of Technology Hyderabad, Hyderabad, Telangana, India

(25) Apr '15: *"Dislocation kinetics in lattice models"* — Invited talk in Pravartana'15, April 25-27, 2015, Indian Institute of Technology Kanpur, U. P., India

(26) Apr '15: *"Scattering of waves by line defects on two dimensional lattices"* — Invited talk in Department of Mechanical Engineering, Indian Institute of Technology Kanpur, U. P., India

(27) Feb '15: *"Fourier Series"* — Invited talk in "Mechanics School @ IITK" under the TEQIP program of the Technology Knowledge Incubation Cell, 20-24 February, 2015, Indian Institute of Technology Kanpur, U. P., India

(28) Oct '14: *"Discrete Sommerfeld Problems"* — Invited talk in Mathematics Colloquium, Department of Mathematics, Indian Institute of Technology Kanpur, U. P., India

(29) Mar '11: *"Liouville-Arnold Theorem"* — Invited Analysis Seminar of Department of Mathematics, Indian Institute of Technology Kanpur, U. P., India

(30) Oct '09: *"On nonlinear elastostatics"* — Invited Analysis Seminar in *Department of Mathematics, Indian Institute of Technology Kanpur*, U. P., India

(31) Oct '07: *"On a hypothesis concerning slowly moving steps along a phase boundary"* — Invited talk in *Department of Applied Mechanics, Indian Institute of Technology Delhi*, New Delhi, Delhi, India

(32) Mar '07: *"On Fracture in a Bar"* — In workshop on *Mechanics of Interaction, Impacts and Separation of Solids*, 2nd-4th March 2007, *Indian Institute of Technology Kanpur*, U. P., India

(33) Nov '06: *"Fast Motion of Dislocation in a Lattice Model"* — Invited talk in *Department of Mechanical Engineering, Indian Institute of Technology Kanpur*, U. P., India

(34) Mar '06: *"Kinetics of a Dislocation: Discrete Models"* — Invited talk in *Laboratoire de Méchanique des Solides, Ecole Polytechnique,* Palaiseau, France

(35) Nov '05: *"Kinetics of a Dislocation: Continuum Models"* — Invited talk in *Laboratoire de Méchanique des Solides, Ecole Polytechnique,* Palaiseau, France

(36) Nov '05: *"On the motion of a Peierls' Dislocation"* — Invited talk in *Department of Mathematical Sciences*, *Univeristy of Liverpool*, Liverpool, L69 7ZL, England, UK

(37) Oct '05: *'Kinetics of a Dislocation in Peierls-Nabarro and Frenkel-Kontorowa Models"* — In *Theories of Microstructures and Defects*, 8-10 October 2005, Society for Natural Philosophy Meeting, Politecnico di Bari, Polignano a Mare - Bari, Italy

(38) Sept '05: *'Dispersive Continuum and Peierls Dislocation"* — In *Successes and Failures of Continuous Models for Discrete Systems*, 5-8 September 2005 at the University of Bristol, Bristol BS8 1TR, UK

(39) July '05: *"Dislocations and Plasticity"* — Invited talk in *Dynamical Problems in Mathematical Materials Science*, July 17-23, 2005 at the International Centre for Mathematical Sciences, Edinburgh, UK

(40) Oct '04: *"Unstable Solitary Waves in One Dimensional Lattice"* — In the session on "Waves in Lattices and Arrays"; *First SIAM Nonlinear Waves and Coherent Structures*, October 2-5, 2004 at the University of Central Florida in Orlando, USA

(41) May '04: *"Dispersion, Dissipation and the Kinetic Relation of a Dislocation"* — In the minisymposium on "Dynamics of Microstructure and Defects in Solids: Discrete and Continuum Models"; *SIAM Conference on Mathematical Aspects of Material Science*, May 23-26 2004, LA, USA

Other Talks & Visits

(1) Apr '23: Visiting the *Department of Mathematical Sciences*, *Univeristy of Liverpool*, Liverpool, L69 7ZL, England, UK on 10-12 April 2023.

(2) Feb '23: Visiting the *Department of Mathematical Sciences* of the *University of Bath*, Bath, Bath, BA2 7AY, UK, on 20-21 February 2023.

(3) Jan '23: Visiting the *School of Computer Science and Mathematics* at *Keele University* on 18th January 2023, Keele, Staffordshire, UK, ST5 5NH during visit to the same venue on 17-19 January 2023.

(4) Jan-June 2023: Invited to undertake research relevant to the programme on Mathematical theory and applications of multiple wave scattering in the Isaac Newton Institute for Mathematical Sciences at Cambridge University, UK. This visit is supported by the Simons Foundation Fellowship and the Isaac Newton Institute for Mathematical Sciences, Cambridge University in addition to CPDA funds from IIT Kanpur.

(5) Jul'22: (delivered by S. Dharmavaram): "Multiscale Modeling of Membranes with Embedded Thin Filaments", CP17 Multiphysical and Multiscale Models, Hybrid: 2022 SIAM Annual Meeting (AN22), David L. Lawrence Convention Center — Pittsburgh, Pennsylvania, U.S, July 11–15, 2022. .

(6) Jul'22: (to be delivered by G. Maurya): "Scattering on square lattice due to an array of rigid constraints", the 11th European Solid Mechanics Conference (ESMC 2022), taking place from 4 - 8 July 2022 at the National University of Ireland, Galway (NUI Galway).

(7) Jul'22: (to be delivered by D. Das): "Symmetry based analysis of instabilities in a plate with stiffened edge", the 11th European Solid Mechanics Conference (ESMC 2022), taking place from 4 - 8 July 2022 at the National University of Ireland, Galway (NUI Galway).

(8) Jul'22: (to be delivered by D. Das): "Symmetry based analysis of instabilities in a plate with stiffened edge", the ECCOMAS Congress 2022 to be held in Oslo, Norway, on 5th-9th of June, 2022.

(9) Jun'22: (delivered by S. Dharmavaram): "Modeling coupled interaction of lipid Membranes with embedded filaments", the ECCOMAS Congress 2022 to be held in Oslo, Norway, on 5th-9th of June, 2022.

(10) Oct'19: (delivered by V. Eremeyev): "Anti-plane surface waves in media with surface structures and surface interfaces: Discrete vs. continuum model", in Kick-off meeting of the IRP Coss & Vita joint with Workshop on elastodynamics of microstructured media October, 17–19, 2019 Ecole des Ponts ParisTech, Champs sur Marne, Amphitheatre Navier

(11) Sep'19: (delivered by V. Eremeyev): "Anti-Plane Surface Waves: Discrete vs. continuum model", in Conference "Dynamics of Technical Systems", 11–13.09.2019, Rostov on Don, Russia

(12) Jun'19: Visiting *Department of Applied Mathematics* in University of Crete 25 May-31 May 2019, Greece

(13) May'19: Visiting University of Bari 21 May-25 May 2019, Italy

(14) May'19: Visiting Faculty of Civil and Environmental Engineering, Gdansk University of Technology, Gdansk, 6 May-20 May 2019, Poland

(15) Apr-May'19: Visiting Glasgow Center of Computational Engineering, School of Engineering, University of Glasgow 30 Apr-5 May 2019, UK

(16) Apr'19: Visiting Department of Civil Engineering, University of Cardiff 28 Apr-29 Apr 2019, UK

(17) Apr'19: Visiting Department of Mathematics, University of Keele 25 Apr-27 Apr 2019, UK

(18) Apr'19: Visiting Department of Aerospace Engineering and Engineering Mechanics, University of Texas at Austin 10 Apr-24 Apr 2019, USA

(19) Apr'19: Visiting Department of Mathematics, University of Aberystwyth 3 Apr-10 Apr 2019, UK

(20) Mar'19: Visiting University of Cagliari 21 Mar-28 Mar 2019, Dipartimento di Ingegneria Meccanica, Chimica e dei Materiali, Universitá di Cagliari, Italy

(21) Dec'18-Jan '19: Visiting Tata Institute of Fundamental Research, Centre for Applicable Mathematics, Sharada Nagar, Chikkabommasandra, Bangalore 560065, India

(22) June '17: Visiting *Department of Mechanical & Aerospace Engineering*, *IIT Hyderabad*, Telangana, India

(23) Sept '05: *"Energy Landscape for Phase Boundaries and Step formation"* — Poster presentation in *Multi-scale problems: modelling, analysis and applications*, 12th-14th September 2005, University of Bath, Bath, BA2 7AY, UK

(24) July-August '05: Visiting *Institute of Mathematical Sciences*, *Univeristy of Bath*, Bath, BA2 7AY, UK

(25) May-June '05: Visiting *Department of Mathematics*, *Univeristy of Pittsburgh*, Pittsburgh, PA, USA

(26) March '05: Visiting *Division of Applied Mathematics* for a week, *Brown Univeristy*, Providence, RI, USA

(27) March '05: *"Synchronization of Globally Coupled Oscillators without Symmetry in the Distribution of Natural Frequencies"* — Theoretical & Applied Mechanics, Cornell University, USA

(28) June-Aug '04: Informal talks/discussion: *Dislocations and other Defects in Crystals* — Visiting *Department of Applied Mathematics* in Summer'04, *Univeristy of Crete*, Greece

(29) April '04: *"Discrete Model and the Kinetic Relation of a Dislocation"* — Theoretical & Applied Mechanics, Cornell University, USA

(30) Dec '03: *"Unstable Solitary Waves in One Dimensional Lattice"* — Theoretical & Applied Mechanics, Cornell University, USA

(31) Aug '03: *"Solitary Waves in One Dimensional Lattice: Continuum Models"* — Theoretical & Applied Mechanics, Cornell University, USA

Details of Courses

(1) *'23-'24, 2nd semester* — Instructor : "Difference Equations for Engineers" (ME682); *150 mins/week, PG elective course*
Tutorial: "Mechanics of Solids" (ESO202A); *50 mins/week, UG compulsory course (problem solving session)*

(2) *'23-'24, 1st semester* — Instructor : "Introduction to Solid Mechanics" (ME621, ME621A); *150 mins/week, PG compulsory course*

(3) *'22-'23, 2nd semester* — `Leave for a semester`

(4) *'22-'23, 1st semester* — Instructor (offline): "Mechanics of Biological Membranes" (ME724A); *150 mins/week, PG elective course*

(5) *'21-'22, 2nd semester* — Instructor (part online): "Calculus of Variations" (ME624); *150 mins/week, PG elective course*

(6) *'21-'22, 1st semester* — Instructor (online): "Introduction to Solid Mechanics" (ME621A); *150 mins/week, PG compulsory course*
Tutorial (online): "Engineering Graphics" (TA101A); *150 mins/week, UG compulsory course (drawing session)*

(7) *'20-'21, 2nd semester* — Instructor (online): "Introduction to Continuum Mechanics" (ME622A); *150 mins/week, PG elective course*

(8) *'20-'21, 1st semester* — Instructor (online): "Introduction to Solid Mechanics" (ME621A); *150 mins/week, PG compulsory course*
Tutorial (online): "Mechanics of Solids" (ESO202A); *50 mins/week, UG compulsory course (problem solving session)*

(9) *'19-'20, 2nd semester* — Instructor (part online): "Calculus of Variations" (ME624); *150 mins/week, UG/PG elective course*
Tutorial (part online): "Engineering Graphics" (TA101A); *150 mins/week, UG compulsory course (drawing session)*

(10) *'19-'20, 1st semester* — Instructor: "Mechanics of Solids" (ESO202A); *150 mins/week, UG compulsory course*

(11) *'18-'19, 2nd semester* — `Leave for a semester`

(12) *'18-'19, 1st semester* — Instructor: "Mathematics for Engineers" (ME681A); *150 mins/week, PG compulsory course*

(13) *'17-'18, 2nd semester* — Instructor: "Wave propagation in solids" (ME723A); *150 mins/week, PG elective course*
Tutorial: "Mechanics of Solids" (ESO202A); *50 mins/week, UG compulsory course (problem solving session)*

(14) *'17-'18, 1st semester* — Instructor: "Dynamics" (ESO209A); *120 mins/week, UG compulsory course*
Tutorial: "Dynamics" (ESO209A); *50 mins/week, UG compulsory course (problem solving session)*

(15) *'16-'17, 2nd semester* — Instructor: "Introduction to Continuum Mechanics" (ME622A); *150 mins/week, PG elective course*
Tutorial: "Mechanics of Solids" (ESO202A); *50 mins/week, UG compulsory course (problem solving session)*

(16) *'16-'17, 1st semester* — Instructor: "Introduction to Solid Mechanics" (ME621A); *150 mins/week, PG compulsory course*
Tutorial: "Mechanics of Solids" (ESO202A); *50 mins/week, UG compulsory course (problem solving session)*

(17) *'15-'16, 2nd semester* — Instructor: "Dynamic Fracture Mechanics" (ME722A); *150 mins/week, PG elective course*
Tutorial: "Engineering Graphics" (TA101A); *150 mins/week, UG compulsory course (drawing session)*

(18) *'15-'16, 1st semester* — Instructor: "Introduction to Solid Mechanics" (ME621A); *150 mins/week, PG compulsory course*
Tutorial: "Mechanics of Solids" (ESO202A); *50 mins/week, UG compulsory course (problem solving session)*

(19) *'14-'15, 2nd semester* — Instructor: "Difference Equations for Engineers" (ME682A); *150 mins/week, PG elective course*

(20) *'14-'15, 1st semester* — Instructor: "Advanced Mechanics of Solids" (ME321A); *120+150 mins/week, UG compulsory course*

(21) *'13-'14,* `Sabbatical Leave for 10 months`

(22) *'12-'13, 2nd semester* — Instructor: "Difference Equations for Engineers" (ME682); *150 mins/week, PG elective course*
Tutorial: "Engineering Graphics" (TA101); *150 mins/week, UG compulsory course (drawing session)*

(23) *'12-'13, 1st semester* — Instructor: "Mathematics for Engineers" (ME681); *150 mins/week, PG compulsory course*

(24) *'11-'12, 2nd semester* — Instructor: "Calculus of Variations" (ME624); *150 mins/week, PG elective course*
Tutorial: "Engineering Graphics" (TA101); *150 mins/week, UG compulsory course (drawing session)*

(25) *'11-'12, 1st semester* — Instructor: "Introduction to Continuum Mechanics" (SE394); *150 mins/week, UG elective course*
Tutorial: "Introduction to Continuum Mechanics" (SE394); *100 mins/week, UG elective course (problem solving session)*

(26) *'10-'11, 2nd semester* — Instructor: "Hamiltonian Mechanics & Symplectic Algorithms" (ME726); *150 mins/week, PG elective course*
Tutorial: "Mechanics of Solids" (ESO204); *100 mins/week, UG elective course (problem solving session)*

(27) *'10-'11, 1st semester* — Instructor: "Mathematics for Engineers" (ME681); *150 mins/week, PG compulsory course*

(28) *'09-'10, 2nd semester* — Instructor: "Calculus of Variations" (ME624); *150 mins/week, PG elective course*
Tutorial: "Mechanics of Solids" (ESO204); *100 mins/week, UG elective course (problem solving session)*

(29) *'09-'10, 1st semester* — Instructor (partial, only lab): "Experimental Solid Mechanics" (ME471); *150 mins/week, UG compulsory course*
Tutorial: "Mechanics of Solids" (ESO204); *100 mins/week, UG elective course (problem solving session)*

(30) *'08-'09, summer semester* — Instructor: "Introduction to Continuum Mechanics" (SE394); *150 mins/week, UG elective course*

(31) *'08-'09, 2nd semester* — Instructor: "Theory of Martensitic Phase Transformation" (ME698G); *150 mins/week, UG elective course*
Tutorial: "Engineering Graphics" (TA101); *150 mins/week, UG compulsory course (drawing session)*

(32) *'08-'09, 1st semester* — Instructor: "Introduction to Continuum Mechanics" (SE394); *150 mins/week, UG elective course*
Tutorial: "Mechanics of Solids" (ESO204); *100 mins/week, UG compulsory course (problem solving session)*

(33) *'07-'08, 2nd semester* — Instructor: "Minimizers in Mechanics and Elasticity" (ME624); *150 mins/week, PG elective course*
Tutorial: "Probability and Statistics" (ESO209); *100 mins/week, UG compulsory course (problem solving session)*

(34) *'07-'08, 1st semester* — Instructor: "Calculus of Variations in Mechanics" (ME698C); *150 mins/week, PG elective course*

(35) *'06-'07, 2nd semester* — Tutorial: "Engineering Graphics" (TA101); *150 mins/week, UG compulsory course (drawing session)*