

School of Physical Sciences

Journals /Research Articles: (89)

- **Bansal Arpit**, “Large sieve for special characters to Gaussian prime square moduli”, *Funct. Approx. Comment. Math.*, 64 (1), 23-37, 2020.
- Stephan Baier and **Bansal Arpit**, “Large sieve with sparse sets of moduli for $\mathbb{Z}[i]$ ”, *Acta Arith.*, 196 (1), 17-34, 2020.
- Singh K, Kumar P, Jagadeesh C, Patel M, **Das D.**, Saha J., “An Approach to α - and β -Amino Peroxides via Lewis Acid Catalyzed Ring Opening-Peroxidation of Donor-Acceptor Aziridines and N-Activated Aziridines”, *Advanced Synthesis & Catalysis*, 362, 4130 – 4137 (2020).
- Negi L, Kumar S, Dwivedi B, **Das D.**, Unusual Thermal Expansion in Hydrogen Bonded Network of an Organic Salt Induced by Large Transverse Vibration of Atoms, *Cryst. Growth Des.* 21, 1428 – 1433 (2021)
- Jagadeesh C, Mondal B, Pramanik S, **Das D.**, Saha J., Unprecedented Reactivity of g-Amino Cyclopentenone Enables Diversity-Oriented Access to Functionalized Indoles and Indole-Annulated Ring Structures, *Angew. Chem. Int. Ed.* 60, 8808 – 8812 (2021)
- Neeta Bidhoodi, and **Das Shankar P.**, “Ergodicity-nonergodicity transition in a binary mixture: Role of the adiabatic approximation”, *Journal of Physics A: Mathematical and Theoretical*, 53, 385004(2020). <https://doi.org/10.1088/1751-8121/aba39b>
- Arijit Mondal, and **Das Shankar P.**, “A Classical DFT model for fragility in the hard sphere limit” *Progress of Theoretical and Experimental Physics*, Issue 7, July, 2020, 073102. <https://doi.org/10.1093/ptep/ptaa091>
- Arijit Mondal, L. Premkumar, and **Das Shankar P.**, “Correlation between kinetic fragility and Poisson’s ratio from analysis of data for soft colloids”, *Condensed Matter Physics*, 24, 13602: 1–17 a (2021)
- Sunil Kumar Yadav and **Das Shankar P.**, “Hydrodynamic equations for active matter, Consequences of Galilean transformations”, submitted to *Journal of Physics A: Mathematical and Theoretical* (2021)
- **Ghosh Subhasis**, with Varsha Rani, Akanksha Sharma, Sumita Ray Chaudhuri, “Diffusion of charge carriers in pentacene”, *Applied Physics Letters*, 118, 083301 (2021)
- **Ghosh Subhasis**, with Dharendra Sahoo, Birendra Kumar, J. Sinha, S. Sinha Roy, Bhaskar Kaviraj, “Cost effective liquid phase exfoliation of MoS2 nanosheets and photocatalytic activity for wastewater treatment enforced by visible light”, *Scientific Reports*, 10, 10759 (2020)
- **Ghosh Subhasis**, with Sarita Yadav, “Study of accumulation channel thickness determined by heterojunction of donor and acceptor organic semiconductors with similar and dissimilar molecular structure”, *Physica Scripta*, 95, 095801 (2020)
- **Ghosh Subhasis**, with P. Mandal, A. Shishodia, N. Ali, H. S. Arora, H. S. Grewal and S. K. Ghosh, “Effect of topography and chemical treatment on the hydrophobicity and antibacterial activities of micropatterned aluminium surfaces”, *Surf. Topogr.: Metrol. Prop.*, 8, 025017 (2020)
- **Ghosh Subhasis**, with Jeetendra Kumar Tiwari, Harish Chandr Chauhan, Birendra Kumar, “3D-Ising like ferromagnetism in skyrmionic-bubbles host infinite-layer $\text{La}_{0.825}\text{Sr}_{0.175}\text{MnO}_3$ manganite perovskite”, *J. Phys.: Condens. Matter*, 32, 195803 (2020)
- K. C. Bakshi, and **Gupta V. P.**, “On orthogonal systems, two-sided bases and regular sub factors”, *New York Journal of Mathematics*, 26, 817-835, 2020
- M. Dimri, D. Dawra, A.K.Singh, **Jha, Alok K.S.**, R. K. Pandey and M. Mohan, “Atomic structure and radiative properties of He-like Ni 26+ ion in dense plasma”, *Can. J. Phys.* 99, 559-565 (2021), <https://doi.org/10.1139/cjpl-2020-0036>
- Mehta V., Saini Hardev S., Srivastava Sunita, **Kashyap Manish K.**, Tankeshwar K., “Assessment of Mo_2N Monolayer as Li-ion battery anodes with high cycling stability,” *Materials Today Communications* 26, 102100 (2021)
- Maity, G Yadav RP, Singhal R, **Kulriya P. K.**, Mishra A, Som T, Dhar S, Kanjilal D, Patel SP, “Influence of fractal and multifractal morphology on the wettability and reflectivity of crystalline-Si thin film surfaces as photon absorber layers for solar cell”, *J. of Appl. Phys.*, 2021, 129, 045301-13.
- Amit Kumar, Meenakshi, **Mahato Rabindra Nath**, “Evolution of Structure, Magnetism, and Critical Behavior of Nanocrystalline $\text{BaCo}_{1-y}\text{Mn}_y\text{O}_{3-\delta}$ ($0.0 \leq y \leq 0.3$)”, *J. Superconductivity and Novel Magnetism*, 33 (12), 3883 (2020).

- Ilyas Noor Bhatti, Imtiaz Noor Bhatti, **Mahato Rabindra Nath**, M.A.H. Ahsan, “Structure, magnetism and dielectric study of nano-crystalline $\text{Gd}_2\text{CoMnO}_6$ ”, *Solid State Sciences*, 108, 106384 (2020).
- Meenakshi, Priyanka Bisht, Arpit Gaur, **Mahato Rabindra Nath**, “Critical behavior and magnetocaloric effect in Co-doped nanocrystalline $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{1-x}\text{Co}_x\text{O}_3$ ”, *Physica B: Condensed Matter*, 602, 412521 (2021).
- Meenakshi, Priyanka Bisht, Amit Kumar, **Mahato Rabindra Nath**, “Magnetic and magnetocaloric properties of the nanocrystalline $\text{Pr}_{0.7}\text{Ba}_{0.2}\text{Ca}_{0.1}\text{MnO}_3$ sample”, *AIP Advances*, 11 (1), 015239 (2021)
- Jogesh Rout, Samiran Roy, Mehedi Masud, Mary Bishai, and **Mehta Poonam**, “Impact of high energy beam tunes on the sensitivities to the standard unknowns at DUNE”, *Phys. Rev. D* 102, 116018 (2020)
- T. Mahanta, J. Shakya and **Mohanty Tanuja**, “Evolution of Raman spectra in ion irradiated MoS2 atomic layers: computational and experimental studies”, *J. Nanosci. Nanotechnol.* 20 (12), 7522-7529 (2020).
- J. Shakya, PK Kasana and **Mohanty Tanuja**, “Investigation of swift heavy ion irradiated reduced graphene oxide (rGO)/Molybdenum disulfide (MoS2) Nanocomposite using Raman spectroscopy”, *J. Nanosci. Nanotechnol.* 20 (5) 3174-31811 (2020)
- S. K. Keshri, K. Mandal, Y. Kumar, D. Yadav, **Mukhopadhyay P.**, “Naphthalenediimides with High Fluorescence Quantum Yield: Bright-Red, Stable and Responsive Fluorescent Dyes.” *Chem. Eur. J.* 2021, 27, 6954-6962.
- D. Bansal, **Mukhopadhyay P.**, “A Facile Access to Multi-State Redox-Active, Push-Pull Naphthalenediimides: Panchromatic Radical Anions and Supramolecular Networks.” *J. Mater. Chem. C.* 2021, 9, 3948-3956.
- S. Dana, P. Valissery, S. Kumar, S. K. Gurung, N. Mondal, **Dhar S. K.**, **Mukhopadhyay P.**, “Synthesis of Novel Ciprofloxacin-Based Hybrid Molecules toward 2 Potent Antimalarial Activity.” *ACS Med. Chem. Lett.* 2020, 11, 1450–1456.
- Jain R, Dey P, Gupta S, Pati S, Bhattacharjee A, **Munde M.**, Singh S, “Molecular dynamics simulations and biochemical characterization of Pf14-3-3 and PfCDPK1 interaction towards its role in growth of human malaria parasite”, *Biochem J*, 477 (12): 2153–2177 (2020)
- Gupta S, Tiwari N, Verma J, Waseem M, Subbarao N, **Munde M.**, Estimation of Stronger Heparin Binding Locus in Fibronectin Domain III14 using Thermodynamic and Molecular Dynamic Study. *RSC Adv*, 10, 20288-20301, (2020)
- Jain R, Gupta S, **Munde M.**, Pati S, Singh S, Development of Novel Anti-Malarial From Structurally Diverse Library of Molecules, Targeting Plant-Like CDPK1, a Multistage Growth Regulator of P. Falciparum, *Biochem J*, 477, 1951-1970, (2020)
- Tandon S, Manhas R, Tiwari N, **Munde M.**, Vijayan R, Gourinath S, Muthuswami R, Madhubala R, Deciphering the interaction of benzoxaborole inhibitor AN2690 with connective polypeptide 1 (CP1) editing domain of Leishmaniadonovani leucyl-tRNA synthetase, *Journal of Biosciences*, 45, 63, (2020)
- Gogoi H, Mani R. Soumya A. Malik A., **Munde M.**, Bhatnagar R. Crystalline and Amorphous Preparation of Aluminum Hydroxide Nanoparticles Enhances Protective Antigen Domain 4 Specific Immunogenicity and Provides Protection Against Anthrax *International Journal of Nanomedicine*, 15, 239–252 (2020)
- S. Howlader, S. Saha, R. Kumar, V. Nagpal, **Patnaik S.**, T Das, G Sheet, “Strong spin depolarization in the ferromagnetic Weyl semimetal: Role of spin-orbit coupling”, *Physical Review B*, 102 (10), 104434 (2020)
- V. Nagpal, **Patnaik S.**, “Breakdown of Ohm’s law and nontrivial Berry phase in magnetic Weyl semimetal $\text{Co}_3\text{Sn}_2\text{S}_2$ ”, *Journal of Physics: Condensed Matter*. 32 (40), 405602 (2020)
- R. Kumar, I. Singh, R. Meena, K. Asokan, B. Birajdar, **Patnaik S.**, “Effect of La-doping on dielectric properties and energy storage density of lead-free Ba (Ti0. 95Sn0. 05) O3 ceramics”, *Materials Research Bulletin*, 123, 110694 (2020)
- A. Saxena, P. Rani, V. Nagpal, **Patnaik S.**, I. Felner, V. P. S. Awana, “Crystal Growth and Characterization of Possible New Magnetic Topological Insulators FeBi_2Te_4 ”, *Journal of Superconductivity and Novel Magnetism*, 33, 2251-2256 (2020)
- S. Chaudhary, V. Nagpal, **Patnaik S.**, “Magnetoelectric response in honeycomb antiferromagnet $\text{Fe}_4\text{NbTaO}_9$ ”, *Journal of Magnetism and Magnetic Materials*, 515, 167305 (2020)
- Anna Kalugina, Anastasiia Taranova, Andrey Novitskii, Dmitriy Karpenkov, Alexey Sedegov, Vladislav Kurichenko, Andrey Voronin, Hiroyuki Miki, **Patnaik Satyabrata**, Vladimir Khovaylo, “Thermoelectric properties of $\text{Fe}_{1-x}\text{Ti}_x\text{Sb}_{1-x}\text{Sn}_x$ and $\text{Fe}_{1-x}\text{Ti}_x\text{Sb}_{1-x}\text{Sb}_x$ Heusler alloys”, *Materials Today: Proceedings*, 44, 3463-3466 (2021)
- D. Sharma, Y. Kumar, P. Kumar, V. Nagpal, **Patnaik S.**, V. P. S. Awana, “High field magneto-transport of mixed topological insulators $\text{Bi}_2\text{Se}_3\text{-xTe}_x$ (x= 0, 1, 2 & 3)”, *Solid State Communications*, 323, 114097 (2021)

- Ritesh Kumar, Aastha Vasdev, Shekhar Das, Sandeep Howlader, Karn S Jat, Prakriti Neha, **Patnaik S.**, Goutam Sheet, “The pressure-enhanced superconducting phase of $\text{Srx} - \text{Bi}_2 \text{Se}_3$ probed by hard point contact”, *Scientific Reports*, 11 (1), 1-8 (2021)
- M. M. Sharma, P. Sharma, G. Gurjar, **Patnaik S.**, V. P. S. Awana, “Structural and Superconducting Analysis of Topologically non-trivial alloy of $\text{Sn}_{1-x}\text{Sbx}$ ($x = 0.4, 0.5, 0.6$)”, *Journal of Physics and Chemistry of Solids*, 110136 (2021)
- V. Nagpal, K. S. Jat, **Patnaik S.**, “Magnetoresistance and scaling laws in type-II Weyl semimetal WP_2 ”, *Physica B: Condensed Matter*, 413062 (2021)
- Kharkwal K.C., Roy Roumita, Kumar Harish, Bera A.K., Yusuf S.M., Shukla A.K., Kumar Kranti, Kanungo Sudipta, **Pramanik A.K.**, “Structure, magnetism, and electronic properties in 3d-5d based double perovskite $(\text{Sr}_{1-x}\text{Ca}_x)_2\text{FeIrO}_6$ ”, *Phys. Rev. B*, 102: 174401 (2020)
- Kharkwal K.C., Patel R.K., Asokan K., **A.K. Pramanik**, “Structural, magnetic and dielectric properties in 3d–5d based $\text{Sr}_2\text{FeIrO}_6$ thin films”, *J. Phys.: Condens. Matter*, 32: 505001 (2020)
- Chaurasia Rachna, Asokan K, Kumar Kranti, **A.K. Pramanik**, “Low Temperature ferromagnetism in SrIrO_3 films”, *Phys. Rev. B*, 103: 064418 (2021)
- Bhatti I.N., **A.K. Pramanik**, “Magnetism and electrical transport in Y-doped layered iridate Sr_2IrO_4 ”, *J. Magn. Magn. Mater.*, 528: 167749 (2021)
- Mall A.K., **A.K. Pramanik**, “Temperature dependent ^{89}Y NMR study on multiferroic YCrO_3 ”, *J. Phys.: Condens. Matter*, 33: 125803 (2021)
- A. Kumar, C. Narayanam, R. Khanna and **Puri S.**, “Slow Coarsening in Unstable Liquid Films under Gravity on a Disordered Substrate”, *Phys. Rev. E* 101, 042801 (2020)
- M. Kumar, F. Corberi, E. Lippiello and **Puri S.**, “Growth Kinetics and Aging Phenomena in a Frustrated System”, *Eur. Phys. J.*, B 93, 88 (2020)
- P. Das, P.K. Jaiswal and **Puri S.**, “Surface-Directed Spinodal Decomposition on Chemically Patterned Substrates”, *Phys. Rev. E* 102, 012803 (2020)
- P. Das, P.K. Jaiswal and **Puri S.**, “Surface-directed Spinodal Decomposition on Morphologically Patterned Substrates”, *Phys. Rev. E* 102, 032801 (2020)
- P. Das, **Puri S.**, and M. Schwartz, “Intruder Dynamics in a Frictional Granular Fluid: A Molecular Dynamics Study”, *Phys. Rev. E* 102, 042905 (2020)
- N. Birdi, V. Banerjee and **Puri S.**, “Ordering Kinetics of Canted and Uniform States in Nematic Liquid Crystals”, *Europhys. Lett.* 132, 66002 (2020)
- R. Agrawal, F. Corberi, E. Lippiello, P. Politi and **Puri S.**, “Kinetics of the Two-dimensional Long-range Ising Model at Low Temperatures”, *Phys. Rev. E* 103, 012108 (2021)
- A. K. Singh, A. Chauhan, **Puri S.**, and A. Singh, “Photo-induced Bond Breaking during Phase Separation Kinetics of Block Copolymer Melts: A Dissipative Particle Dynamics Study”, *Soft Matter*, 17, 1802 (2021)
- A. Vats, V. Banerjee and **Puri S.**, “Domain Growth in Ferronematics: Slaved Coarsening, Emergent Morphologies and Growth Laws”, *Soft Matter*, 17, 2659 (2021)
- Manoranjan Swain and **Rai Amit**, “Non-classical light in a Jx photonic lattice”, *J. Opt.*, 23, 035202, (2021)
- Rai, V. K., Verma, F., Bhardiya, S. R., Sheshma, H., **Rai, A.**, Singh, M.; Facile Synthesis of γ -ketonitriles in water via $\text{C}(\text{sp}^2)\text{-H}$ activation of aromatic aldehydes over $\text{Cu@g-C}_3\text{N}_4$ under visible-light, *Synfacts*, 17 (01), 0070, 2021
- Bhardiya, S. R., Asati, A., Sheshma, H., **Rai, A.**, Rai, V. K., Singh, M.; A novel bio-conjugated reduced graphene oxide-based nanocomposite for sensitive electrochemical detection of cadmium in water, *Sensors & Actuators: B. Chemical*, 2021, 328, 129019.
- Shukla, P., Asati, A., Bhardiya, S. R., Singh, M., Rai, V. K., **Rai, A.**, Metal-Free C–H Activation over Graphene Oxide Towards Direct Syntheses of Structurally Different Amines and Amides in Water, *J. Org. Chem.*, 85, 15552-15561, 2020
- Singh, P. K., Bhardiya, S. R., Asati, A., Rai, V. K., Singh, M., **Rai, A.**, $\text{Cu/Cu}_2\text{O@g-C}_3\text{N}_4$: Recyclable Photocatalyst under Visible-Light to Access 2-Aryl/benzimidazoles/benzothiazoles in Water, *Chemistry Select*, 5, (45), 14270-14275, 2020
- Rai, V. K., Verma, F., Bhardiya, S. R., Sheshma, H., **Rai, A.**, M. Singh; Facile Synthesis of γ -Ketonitriles in Water via $\text{C}(\text{sp}^2)\text{-H}$ Activation of Aromatic Aldehydes over $\text{Cu@g-C}_3\text{N}_4$ under Visible-Light, *Eur. J. Org. Chem.*, 5841-5846, 2020

- Singh, M., hardiya, S. R., Asati, A., Sheshma, H.; **Rai, A.**, Rai, V. K.; Design of a Sensitive Electrochemical Sensor Based on Ferrocene-Reduced Graphene Oxide/Mn-Spinel for Hydrazine Detection, *Electroanalysis*, 32, 1516-1523, 2020.
- Shukla, P., Asati, A., Bhardiya, S. R., Singh, M., Rai, V. K., **Rai, A.**, Cu (I)-Induced Activation of Furan for Inverse Electron Demand ADAR with Alkenes towards Regioselective Synthesis of Tetrahydropyridine, *J. Org. Chem.*, 2020, 85, 7772-7780.
- Singh, M., Sahu, A., Singh, P. K., Verma, F., **Rai, A.**, A Novel Ternary Graphene-Based Nanocomposite Modified Electrode for Acetaminophen Detection, V. K. Rai, *Electroanalysis*, 2020, 32, 1516-1522.
- Rai, V.K., Mahata, S., Kashyap, H., M. Singh, **Rai, A.**, Bio-reduction of Graphene Oxide: catalytic applications of (reduced) GO in organic synthesis, *Current Organic Synthesis*, 2020, 17, 164-191.
- Singh, M., Bhardiya, S. R., Verma, F., Rai, V. K., **Rai, A.**, Graphene-based Nanomaterials for Fabrication of Pesticide Electrochemical Sensors, *Curr. Graphene Sci.*, 3, 26-40, 2020
- Tandekar, K., Mishra, N. K., **Sabbani Supriya**, "Solvent mediated reversible solid state photochromism of {Mo₇₂Fe₃₀} Keplerate", *Dalton Transactions* 50(18), 6146-6151(2021).
- Tandekar, K., Singh, C., **Sabbani Supriya**, "Proton Conductivity in {Mo₇₂Fe₃₀}-Type Keplerate" *European Journal of Inorganic Chemistry*, 2021(8), 734-739 (2021)
- Tandekar, K., Naulakha, P., **Sabbani Supriya**, "Coating Keplerate based host-guest material PMo₁₂O₄₀@{Mo₇₂Fe₃₀} surface with silver iron molybdate", *Inorganica Chimica Acta* 516, 120123 (2021)
- Umesh C. Roy and **Sarkar Subir K.**, "Ab initio study of the density dependence of the Grüneisen parameter at pressures up to 360 GPa", *Computational Condensed Matter* 27e00552 (2021).
- Bina Kumari, Pradipta Bandyopadhyay and **Sarkar Subir K.**, "Optimising the parameters of the Gibbs Ensemble Monte Carlo simulation of phase separation: the role of multiple relaxation times", *Molecular Simulation* <https://doi.org/10.1080/08927022.2020.1754412>.
- Prasad P, Gupta A, **Sasmal P. K.**, Aggregation-Induced Emission Active Metal Complexes: A Promising Strategy to Tackle Bacterial Infections. *Chem. Commun.*, 57, 174–186, 2021. (Cover Article).
- Gupta A, Prasad P, Gupta S, **Sasmal P. K.**, Simultaneous Ultrasensitive Detection and Elimination of Drug-Resistant Bacteria by Cyclometalated Iridium(III) Complexes. *ACS Appl. Mater. Interface*, 12, 35967–35976, 2020
- Rajdip Palit and **Shah Riddhi**, "Distal actions of automorphisms of nilpotent groups G on Sub_G and applications to lattices in Lie groups", *Glasgow Mathematical Journal*, 63, 343-362, 2021.
- Manoj B. Prajapati and **Shah Riddhi**, "Expansive actions of automorphisms of locally compact groups G on Sub_G", *Monatshefte für Mathematik* 193, 129-142(2020).
- Amar Nath Yadav, Jasleen K. Bindra, Narendra Jakhar, **Singh Kedar**, "Switching-on Superparamagnetism in diluted magnetic Fe () doped CdSe Quantum Dots", *Cryst Eng Comm*, 20, 1738-1745 (2020).
- Ajit Kumar, Ashwani K. Singh, Monika Tomar, Vinay Gupta, Pramod. Kumar, **Singh Kedar**, "Electromagnetic interference shielding performance of lightweight NiFe₂O₄/rGO nanocomposite in X- band frequency range", *Ceramics International*, 46, 10A (2020)15473-15481.
- Amar Nath Yadav, Pramod Kumar, **Singh Kedar**, "Evaluation of Dopant Energy and Stokes Shift in Cu-doped CdS Quantum Dots via Spectro-electrochemical Probing", *New Journal of Chemistry*, 44, 13529-13533 (2020).
- Ashwani Kumar Singh, Amar Nath Yadav, Amit Srivastava, Saurabh Srivastava, Rishi K Jaiswal, Amal Chandra Mondal, **Singh Kedar**, "CdSe-Reduced graphene oxide nanocomposite toxicity alleviation via V₂O₅ shell formation over CdSe core: in vivo and in vitro studies", *Nanotechnology*, 31 415101 (2020)
- Kumar, V., Nagal, V., Kumar, R., Srivastava, S., Gupta, B.K., Kumar, M., Hafiz, A.K. and **Singh, K.**, "Influence of the rate of radiation energy on the charge-carrier kinetics application of all-inorganic CsPbBr₃ perovskite nanocrystals", *RSC Advances*, 10, 34651-34657 (2020)
- Amar Nath Yadav, Ashwani Kumar Singh, Pramod Kumar, **Singh Kedar**, "Graphene-Induced Room Temperature Ferromagnetism in Cobalt Nanoparticles Decorated Graphene Nanohybrid", *Nanoscale Research Letters*, 15, 1-8 (2020)
- Jasleen K. Bindra, **Singh Kedar**, Johan van Tol, Naresh S. Dalal, and Geoffrey F. Strouse, "Spin Dynamics in Mn:ZnSe Quantum Dots: A Pulsed High-Frequency EPR Study", *ACS-J of Physical Chemistry C*, 124, 35, 19348–19354 (2020)

- Jagdees Prasad Ashwani Kumar Singh, Amar Nath Yadav, Ajit Kumar , Monika Tomar , Amit Srivastava , Pramod Kumar , Vinay Gupta, **Singh Kedar**, “Molybdenum Disulfide Wrapped Carbon Nanotube-Reduced Graphene Oxide (CNT/MoS₂-rGO) Nanohybrid for excellent and fast removal of Electromagnetic Interference Pollution”, *ACS Applied Materials & Interfaces*, 12, 40828–40837 (2020)
- Jagdees Prasad, Ashwani Kumar Singh, Monika Tomar, Vinay Gupta and **Singh Kedar**, “High-efficiency microwave absorption and electromagnetic interference shielding of Cobalt-doped MoS₂ nanosheet anchored on the surface reduced graphene oxide nanosheet”, *Journal of Materials Science: Materials in Electronics*, 31, 19895–19909 (2020)
- Jagdees Prasad, Ashwani Kumar Singh, Monika Tomar, Vinay Gupta and **Singh Kedar**, “Hydrothermal synthesis of micro-flower like morphology aluminum-doped oS₂/rGOnanohybrids for high efficient electromagnetic wave shielding materials”, *Ceramics International*, 47 15648-15660 (2021)
- Amar Nath Yadav, Pramod Kumar, **Singh Kedar**, “Femtosecond photoluminescence up-conversion spectroscopy in Cu doped CdS quantum dots”, *Materials Letters*, 297, 159, 129925 (2021)
- **Singh Lav Kumar**, “On Arens regularity of projective tensor product of Schatten spaces,” *Rocky Mountain Journal of Mathematics*, to appear.

Chapters in Books: (13)

- Parikshit Dutta and **Ghoshal Debashis**, “Phase operator on $L^2(Q_p)$ and the zeroes of Riemann and Fisher”, accepted for publication in the special volume “Advances in Non-Archimedean Analysis and Applications”, accepted and to appear in *Springer Nature*. (e-print arXiv:2102.13445 [math-ph])
- Abi, B. et al. (including Rout, J., Shafaq, S. and **Mehta, P.**, Volume IV: The DUNE far detector single-phase technology, *Journal of Instrumentation* 15, T08010 (2020), URL - <https://iopscience.iop.org/article/10.1088/1748-0221/15/08/T08010>
- Abi, B. et al (including Rout, J., Shafaq, S. and **Mehta, P.**, Volume I. Introduction to DUNE, *Journal of Instrumentation* 15, T08008 (2020), URL - <https://iopscience.iop.org/article/10.1088/1748-0221/15/08/T08008>
- Abi, B. et al (including Rout, J., Shafaq, S. and **Mehta, P.**, Volume III. DUNE far detector technical coordination, *Journal of Instrumentation* 15, T08009 (2020), <https://iopscience.iop.org/article/10.1088/1748-0221/15/08/T08009>
- Abi, B. et al (including Rout, J., Shafaq, S. and **Mehta, P.**, Prospects for beyond the Standard Model physics searches at the Deep Underground Neutrino Experiment, *European Physical Journal C* 81, 322 (2021), e-Print: arXiv:2008.12769 [hep-ex] URL - <http://arxiv.org/abs/2008.12769>
- Abi, B. et al (including Rout, J., Shafaq, S. and **Mehta, P.**, Experiment Simulation Configurations Approximating DUNE TDR, e-Print: arXiv:2103.04797 [hep-ex] URL - <http://arxiv.org/abs/2103.04797> (2021)
- Abud, Adam Abed et al (including Rout, J., Shafaq, S. and **Mehta, P.**, Deep Underground Neutrino Experiment (DUNE) Near Detector Conceptual Design Report, e-Print: arXiv:2103.13910 [physics.ins-det] <http://arxiv.org/abs/2103.13910> (2021)
- A. Pandey, A. Kumar and **Puri S.**, Quantum Chaotic Systems and Random Matrix Theory, in: *21st Century Nanoscience: A Handbook*, edited by K.D. Sattler, Chapter 12, CRC Press (Taylor and Francis), Boca Raton (2020).
- Manorma Singh, **Rai Ankita**, Vijai K. Rai,; Electrocatalysis: Application of New Composite Materials, in: Inamuddin et al. (eds.), *Methods for Electrocatalysis* © Springer Nature Switzerland AG 2020: 113-123.
- Manorma Singh, **Rai Ankita**, Vijai K. Rai, S. R. Bhardiya, A. Asati; Role of MOF's as Electro-Organic Catalysts, Inamuddin, Rajender Boddula, Mohd, Imran Ahamed and Abdullah M. Asiri (eds.), Application of Metal-Organic framework & their derivative materials (109-120) © 2020 Scrivener Publishing LLC.
- Moirangthem Kiran Singh, Him Shweta and **Sen Sobhan**, New Family of Fluorescent Probes for Characterizing - Depth-Dependent Static and Dynamic Properties of Lipid/Water Interfaces Book Chapter in *Analysis of Membrane Lipids* , Springer (2020)
- Nagar, Anima, **Shah, Riddhi**, Sridharan, Shrihari (Editors), Elements of dynamical systems. Lecture notes. TRIM 79, HBA, New Delhi (2020)
- Amar Nath Yadav, Ashwani Kumar Singh, Pramod Kumar and **Singh Kedar**, Synthesis, Properties and Applications of II- IV Semiconductor Core/Shell Quantum Dots, *Core/Shell Quantum Dots: Synthesis, Properties and Devices*, 28, 1–28, Springer Nature (2020).

Patents: (01)

- **Sasmal P. K.**, A Multi-Targeted Iridium (III)- Platinum (IV) Conjugates as Potent Anticancer Prodrugs to Overcome Drug Resistant Cancer; Indian Patent Application No. 202011027461 and filed, 29 June, 2020

Media Articles: (02)

- **Shah, Riddhi**, “The COVID-19 Pandemic and Mathematics at JNU”, Invited essay/article in *Confluence*, Indian Academy of Sciences (2020) <http://confluence.ias.ac.in/the-covid-19-pandemic-and-mathematics-at-jnu/>
- **Shah, Riddhi**, “The COVID-19 Pandemic and Mathematics at JNU”, in *Higher Education Going Online: The Challenges in India* (eBook), Ed. Sujin Babu and Ram Ramaswamy, Indian Academy of Sciences, Bengaluru, 57-62 (2021).

Conference Proceedings: (19)

- Priyanka Bisht, Meenakshi, Arpit Gaur, **Mahato Rabindra Nath**, La_{1.4}Te_{0.6}Mn_{1.8}Co_{0.2}O₆ double perovskite: Structural, magnetic, and electrical transport properties, AIP Conf. Proc. 2265, 030523 (2020).
- Jogesh Rout, Samiran Roy, Mehedi Masud, Mary Bishai, and **Mehta Poonam**, “Impact of high energy beam tunes on the sensitivities to the standard unknowns at DUNE”, Proceedings of the XXIV BRNS DAE Symposium on high energy physics, 14 – 18 December, 2020
- Sheeba Shafaq and **Mehta Poonam**, “Enhanced violation of Leggett-Garg Inequality in three flavour neutrino oscillations via non-standard interaction”, Proceedings of the XXIV BRNS DAE Symposium on high energy physics, 14 – 18 December, 2020
- Sheeba Shafaq and **Mehta Poonam**, “Enhanced violation of Leggett-Garg Inequality in three flavour neutrino oscillations via non-standard interaction”, Proceedings of 28th International Workshop on neutrino telescopes, 18 – 26 February, 2021
- Jogesh Rout, Sheeba Shafaq, Mary Bishai, and **Mehta Poonam**, “Physics prospects with the second oscillation maxima at the Deep Underground Neutrino Experiment”, Proceedings of 28th International Workshop on neutrino telescopes, 18 – 26 February, 2021
- P K Kasana, T. Mahanta and **Mohanty T.**, “Fermi level shifting of tungsten disulfide (WS₂) nanosheets by swift heavy ion irradiation”, AIP Conference Proceedings 2020, 2265, 030184
- J. Shakya, S. Kumarand, **Mohanty T.**, “Increased surface potential of MoS₂ coexisting in 2H and 1T phases after microwave irradiation”, AIP Conference Proceedings 2020, 226, 030720
- S. Kumar, J. Shakya, MK Kumawat and **Mohanty T.**, “Modified optoelectronic behavior of MoS₂/TiO₂ hybrid nanostructures by thermal annealing”, AIP Conference Proceedings 2020, 2265, 030726
- T. Mahanta, P.K Kasana and **Mohanty T.**, “Surface potential mapping of chemically synthesized boron nitride nanosheets”, AIP Conference Proceedings 2020, 2265, 030080
- Deepak Sharma, P Rani, PK Maheshwari, V Nagpal, RS Meena, SS Islam, **Patnaik S.**, VPS Awana. “Hikami-Larkin-Nagaoka (HLN) fitting of magneto transport of Bi₂Se₃ single crystal in different magnetic field ranges”, AIP Conference Proceedings 2220 (1), 110028 (2020)
- A Saxena, P Rani, V Nagpal, **Patnaik S.**, VPS Awana, “Growth and characterization of MnBi₂Te₄ magnetic topological insulator”, AIP Conference Proceedings 2220 (1), 110029 (2020)
- S Chaudhary, A Sagar, A Bhardwaj, **Patnaik S.**, Synthesis and magnetodielectric properties of arc melted Fe₄Nb₂O₉ AIP Conference Proceedings 2265 (1), 030583 (2020)
- AD Sagar, KS Jat, S Chaudhary, A Bhardwaj, VV Khovalyo, **Patnaik S.**, Magnetic and transport properties of off-stoichiometry Fe_{2-x}TiSn (x=0.0,0.02,0.04) based Heusler alloys, AIP Conference Proceedings 2265 (1), 030680 (2020)
- P Kumar, V Nagpal, A Bhardwaj, Sudesh, **Patnaik S.**, Magnetotransport study in type-II Weyl semimetal TaIrTe₄ AIP Conference Proceedings 2265 (1), 030424 (2020)
- KS Jat, AD Sagar, A Bhardwaj, **Patnaik S.**, Superconducting properties of misfit layered ferecrystals (SnSe)_{1.16}(NbSe₂), AIP Conference Proceedings 2265 (1), 030582 (2020)

- G Gurjar, V Sharma, **Patnaik S.**, BK Kuanr, Structural and magnetization dynamic properties of single crystalline Bi-doped YIG thin film grown on GGG substrate having different planes, AIP Conference Proceedings 2265 (1), 030337 (2020)
- Amar Nath Yadav and **Singh Kedar**, Investigation of structural and optical properties of manganese doped zinc selenide quantum dots, AIP Conference Proceedings 2276, 020018 (2020)
- Chromium-doped MoS₂ grown on rGO nanosheet for enhanced microwave shielding performance, Jagdees Prasad, Ashwani Kumar Singh, Monika Tomar, Vinay Gupta and **Singh Kedar**, AIP Conference Proceedings 2265, 030594 (2020)
- Amar Nath Yadav Rishi K. Jaiswal, Pramod Kumar and **Singh Kedar**, Preparation, characterization, and antibacterial activity of ultrasmall chromium oxide nanocrystals, AIP Conference Proceedings 2265, 030046 (2020)