

School of Physical Sciences (SPS)

Journal/Research Articles: (96)

- Pillai, P.S., Athira, B.S., Varghese, H., **Agarwal, S.**, et al. A resistive ink based all-printed fabric heater integrated wearable thermotherapy device, *J Mater Sci: Mater Electron*, 34, 1261, 2023
- Shrivastava A, Sethi T, **Das, D.**, Colossal Linear NTE and PTE in Two-Fold Interpenetrated Network of a MOF Induced by Hinge-like Motion, *Cryst. Growth Des.*, 2022, 22: 3479 – 3484.
- Kumar S, Priyasha, **Das, D.**, Molecular tiltation and supramolecular interactions induced uniaxial NTE and biaxial PTE in bis-imidazole-based co-crystals, *New J. Chem.*, 2022, 46: 18465 – 18470.
- Chuskit S, Sethi T, Harsha P, **Das D.**, Biaxial Negative Thermal Expansion in an Organic Imidazolium Salt: Modulation of the Thermal Expansion Property by Methyl Substitution, *Cryst. Growth Des.*, 2023, 23: 1336 – 1342.
- Singh B, Bera T, Singh V P, Priyasha, **Das D.**, Saha J, Construction of siropyrroloindolines by Dearomative [3+2]-Cycloaddition of Indoles with Oxindole- Embedded Azaoxyallyl Cations, *Synlett*, 2023, 34: 465 – 470.
- Prakash Vardhan and **Das, S.P.**, 2022, Configurational entropy from replica approach: A density functional model: *Physical Review E* 105, 024112
- Sunil K. Yadav, and **Das, S.P.**, 2022, Hydrodynamic equations for active matter: Consequences of Galilean transformations, submitted to *Journal of Physical Soc. of Japan*, 91, 084601
- Prakash Vardhan, and **Das, S.P.**, 2022, Complexity calculation for an amorphous metastable solid, *Journal of Non-Crystalline Solids*, 597, 121744. <https://doi.org/10.1016/j.jnoncrysol.2022.121744>.
- Faizyab Ahmad, and **Das, S.P.**, 2022, Metastable states of microgel fluids with Hertzian interaction potentials, *Physica A*, 608 128262.
- Neeta Bidhoodi and **Das, S.P.**, 2023, Ergodicity in the asymptotic dynamics for a binary Mixture: submitted to JSTAT, Theory and Expt Online at stacks.iop.org/JSTAT/2023/063301. <https://doi.org/10.1088/1742-5468/acd696>
- Jee B*, Sharma PP, **Goel V. K.**, Kumar S, Singh Y and Rath B, Natural Metabolite Ursolic Acid as an Inhibitor of Dormancy Regulator DosR of Mycobacterium tuberculosis: Evidence from Molecular Docking, Molecular Dynamics Simulation and Free Energy Analysis. *Curr Comp-Aided Drg Des*, 2023, 19(6):425-437.
- Sharma R, Borah SJ, Bhawna, Kumar S, Gupta A*, Singh P, **Goel V. K***, Kumar R, Kumar V*, Functionalized Peptide-Based Nanoparticles for Targeted Cancer Nanotherapeutics: A State-of-the-Art Review. *ACS omega*, 2022, 7(41):36092-36107.
- Sharma PP, Bhardwaj S, Sethi A, **Goel V. K.**, Grishina M, Rath B, Chitosan based architectures as biomedical carriers. *Carbohydrate Res*, 2022, 522: 108703.
- Mehta M, Mehta B*, Gupta S, **Goel V. K.**, Synthesis of Novel Spiro [imidazolidine- pyrazoline]-2, 4-dione Derivatives. *Ind J of Adv in Chem Sci*, 2022, 14(4): 172-176.
- **Gupta, V. P.**, and Singh, Lav Kumar, “On strong Arens irregularity of projective tensor product of Hilbert space”, *Houston Journal of Mathematics*, 48 (2), 337-351, 2022
- Paijwar R, Sharma R, **Jha, A.K.S.**, Relativistic atomic structure calculations of KIX with plasma parameters, September, 2022, *Phys. Plasmas* 29, 092702 , <https://doi.org/10.1063/5.0095476>
- Dimri M, Dawra D, Singh A K , Pandey R K, Kumar P, **Jha, A.K.S.**, Mohan M, Influence of strongly coupled plasma on the low-lying transitions of Be-like ions, November, 2022, *Eur. Phys. J. D* 76 :223
- Joshi R, Kumar P, **Jha, A.K.S.**, Mohan M, Above Threshold Ionization spectra for Debye plasma embedded atom interacting with femtosecond laser pulse, March, 2023, *Spectroscopy Letters*, DOI: 10.1080/00387010.2023.2194366
- **Kashyap, M. K.**, “Photovoltaic performance of mixed cation K0.005MA0.995PbI3-based perovskite solar module”, co-authored with Harpreet Singh, Shweta Dhakla, Parvesh K. Deendyal, Anand Kumar, Sarvesh Kumar, *Applied Research* (2022).
- **Kashyap, M. K.**, “Surface functionalization of gallium nitride for biomedical implant applications”, co-authored with Monu Mishra, Jitendra Sharan, Veena Koul, Om P. Kharbanda, Ashish Kumar, Ashok Sharma, Timothy A Hackett, Ram Sagar, Govind Gupta, *Applied Surface Science* 612, 155858 (2023).
- **Kashyap, M. K.**, “N-based single and double transition metal V₂N/CrVN monolayers as high capacity anode materials for Li-ion batteries”, co-authored with Veenu Mehta, Hardev S. Saini, Sunita Srivastava, K. Tankeshwar, *Mater. Chem. Phys.* 290, 126531 (2022).

- **Kashyap, M. K.**, “Ultralow diffusion barrier of double transition metal MoWC monolayer as Li-ion battery anode”, co-authored with Veenu Mehta, Hardev S. Saini, Sunita Srivastava, K. Tankeshwar, *J. Materials Science* 57, 10702–10713 (2022)
- **Kashyap, M. K.**, “Optical absorption and stability enhancement in mixed lead, tin, and germanium hybrid halide perovskites for photovoltaic applications”, co-authored with Ankur Taya, Sarvesh Kumar, Timothy A. Hackett, *Vacuum* 201, 111106 (2022).
- Kailash Chandra, Vinod Singh, Saurabh K. Sharma, **Kulriya, P. K.**, Probing the influence of Ho^{3+} doping on structural and magnetic properties of $(\text{Gd}_{1-y}\text{Ho}_y)_2\text{Ti}_2\text{O}_7$ pyrochlore, *Journal of Alloys and Compounds*, 2023, 960; 170779; (Impact Factor 6.371)
- Abid Hussain, R. S Dhaka, Ho Jin Ryu, Saurabh Kumar Sharma, **Kulriya, P. K.**, A critical review on temperature dependent irradiation response of high entropy alloys, *Journal of Alloys and Compounds*, 2023, 948; 169624; (Impact Factor 6.371)
- Abid Hussain, S.A. Khan, Sandeep K. Sharma, Kathi Sudarshan, Saurabh K. Sharma, Chetan Singh, **Kulriya, P. K.**, Influence of defect dynamics on the nanoindentation hardness in NiCoCrFePd high entropy alloy under high dose Xe+3 irradiation, *Materials Science and Engineering A*, 2023, 863, 7946-7955; (Impact Factor 6.044)
- Bhanu Priya, Priya Jasrotia, Arun Kumar, Vinamrita Singh, Jehova Jire, Raj Kumar, **Kulriya, P.K.**, Tanuj Kumar, Structural, optical, and electrical properties of V_2O_5 thin films: Nitrogen implantation and role of different substrates, *Frontiers in Materials*, 2022, 9; 728; (Impact Factor 3.985)
- Kailash Chandra, Vinod Singh, Saurabh K Sharma, **Kulriya, P.K.**, La^{3+} substitution effect on structural and magnetic properties of frustrated $\text{Ho}_2\text{Ti}_2\text{O}_7$ pyrochlore, *Journal of Alloys and Compounds*, 2023, 937; 168311; (Impact Factor 6.371)
- Hari Singh, Saurabh Kumar Sharma, **Kulriya, P.K.**, Electronic excitation driven structural evolution in $\text{Ce}_{0.8}\text{Zr}_{0.2}\text{O}_2$, *Ceramics International*, 2022, 49; 7946-7955; (Impact Factor 5.532)
- Hiroshi Amekura, Saif Ahmad Khan, **Kulriya, P.K.**, Debudul Kabiraj, Irradiation Temperature Dependence of Shape Elongation of Metal Nanoparticles in Silica: Counterevidence to Ion Hammering Related Scenario, *Quantum Beam Science*, 2023, 7; 12
- Kailash Chandra, Vinod Singh, Saurabh K Sharma, **Kulriya, P.K.**, Structural magnetic properties correlation in Ge doped frustrated $\text{Ho}_2\text{Ti}_2\text{O}_7$ pyrochlore, *Journal of Magnetism and Magnetic Materials*, 2022, 561; 169694; (Impact Factor 3.097)
- Rajveer Kaur, M Gupta, **Kulriya, P.K.**, and S S Ghumman, Structural and electronic behavior of yttrium doped zirconolite ceramic; a potential waste form for burning minor actinides, *Physica Scripta*, 2022, 97; 075806, (Impact Factor 3.081)
- Ajay Kumar, Saurabh Kumar Sharma, V Grover, Yogendar Singh, Vivek Kumar, Vivek Kumar Shukla, **Kulriya, P.K.**, Probing the short-range ordering of ion irradiated $\text{Gd}_2\text{Ti}_{2-y}\text{Zr}_y\text{O}_7$ ($0.0 \leq y \leq 2.0$) pyrochlore under electronic stopping regime, *Journal of Nuclear Materials*, 2022, 564; 153682; (Impact Factor 3.555)
- Vinod Singh, **Kulriya, P.K.**, Ashok Kumar, Ramesh Kumar, Priya Pradeep Kumar, Umang Berwal, Jasveer Singh, Kailash Chandra, Kedar Singh, Hydrogen induced structural modifications in size selected Pd-Carbon core-shell NPs: Effect of carbon shell thickness, size and pressure. *International Journal of Hydrogen Energy*, 2022, 47; 12642-12652; (Impact Factor 7.139)
- Priyanka Bisht, Vipin Nagpal, Gurmeet Singh, **Mahato, R.N.**, Observation of Griffith like phase and large magnetocaloric effect in nanocrystalline $\text{La}_{0.7}\text{Ag}_{0.2}\text{Bi}_{0.1}\text{MnO}_3$, *Journal of Applied Physics*, 132, 02390 (2022).
- Amit Kumar, Meenakshi, **Mahato, R.N.**, Synthesis, structural and physical properties of ABO_3 based hexagonal polytypes: A review and discussion, *Physica B: Condensed Matter*, 642, 414125 (2022).
- C. P. Saini, S. Bhowmick, A. Barman, N. Kumar, A. Das, S. A. Khan, A. Claverie, D. Kanjilal, **Mahato, R.N.**, K. Singh and A. Kanjilal, Defect engineered blue photoluminescence in $\text{ZnO}:\text{Al}/\text{TiO}_2$ heterostructures, *Journal of Applied Physics*, 132, 065302 (2022).
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Separation of track- and shower-like energy deposits in ProtoDUNE-SP using a convolutional neural network *Eur. Phys. J. C* 82 (2022) 10, 903.
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Scintillation light detection in the 6-m drift-length ProtoDUNE Dual Phase liquid argon TPC, *Eur. Phys. J. C* 82 (2022) 7, 618
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Low exposure long-baseline neutrino oscillation sensitivity of the DUNE experiment, *Phys.Rev. D* 105 (2022) 7, 072006

- **Mohanty, T.**, with Tanmay Mahanta, Sanjeev Kumar and D. Kanjilal, Exploring the effect of various regimes of ion fluence on the optical and surface electronic properties of graphene, *Appl. Phys. A*, 2022, 128, 915
- **Mohanty, T.**, with M K. Kumawat and Sanjeev kumar, Tailoring functional properties of graphene oxide by defect assisted surface and interface modifications, *J. Mater. Res.* 2022, 37, 3394-3402
- **Mohanty, T.**, with S. Kumar and M K Kumawat, Tailoring surface electronic properties of GO-TiO₂ hybrid nanostructures through interface modifications, *Appl. Surf. Sci.* 2023, 609, 155398
- **Mohanty, T.**, with Vidyotma Yadav, Effect of low energy ion bombardment on structural and optical properties of gold functionalized hBN nanosheets, *Nucl. Instrum. Meth. B* 2023, 536, 55-59
- A folded $\square$ -system with supramolecularly oriented dipoles: single-component piezoelectric relaxor with NLO activity. S. De, D. Asthana, C. Thirnal, S. K. Keshri, R. K. Ghosh, G. Hundal, R. Kumar, S. Singh, R. Chatterjee, **Mukhopadhyay P.**, *Chem. Sci.*, 2023, 14, 2547.
- A Highly Contorted Push-Pull Naphthalenediimide Dimer and Evidence of Intramolecular Singlet Exciton Fission. D. Bansal, A. Kundu, V. P. Singh, A. K. Pal, A. Datta*, J. Dasgupta*, **Mukhopadhyay P.**, *Chem. Sci.*, 2022, 13, 11506.
- Synthesis and Properties of Electron-Deficient and Electron-Rich Redox-Active Ionic π -Systems S. Chorol, P. Saini, **Mukhopadhyay P.**, *The Chemical Record*, 2022, e202200172.
- Synthesis of a Highly Electron-Deficient, Water-Stable, Large Ionic Box: Multielectron Accumulation and Proton Conductivity. J. Shukla, R. Illathvalappil, S. Kumar, S. Chorol, A. Pandikassala, S. Kurungot, and **Mukhopadhyay P.**, *Org. Lett.* 2022, 24, 3038–3042.
- Acridine-Peptide Conjugated Nanofiber Assembly Triggers Stimuli-Free Immobilization of Crude Oil and Read-Out by Turn-On Emission. D. Asthana*, N. Patti, and **Mukhopadhyay P.**, *Chem Nano Mat.* 2022, 8, e202200220.
- Gupta S, Aggarwal S, **Munde M.**, New Insights into the Role of Ligand Binding Modes in GC-DNA Condensation through Thermodynamic and Spectroscopic Study”, *ACS Omega*, 8, 4554-4565, 2023
- Aggarwal S, Tanwar N, Singh A, **Munde M.**, Formation of Protamine and Zn-Insulin Assembly: Exploring Biophysical Consequences. *ACS Omega*. 7, 41044-41057, 2022
- Scaling analysis of anomalous Hall resistivity and magnetoresistance in the quasi-two-dimensional ferromagnet Fe₃GeTe₂. P Saha, M Singh, V Nagpal, P Das, **Patnaik, S.**, *Physical Review B* 107 (3), 035115 (2023).
- Superconductivity and weak anti-localization in nodal-line semimetal SnTaS₂. M Singh, P Saha, V Nagpal, **Patnaik, S.**, *Superconductor Science and Technology*, 35-8, 084003 (2022).
- Structural and weak antilocalization analysis of topological single-crystal SnSb₂Te₄. Ankush Saxena, MM Sharma, Prince Sharma, Yogesh Kumar, Poonam Rani, M Singh, **Patnaik, S.**, VPS Awana, *Journal of Alloys and Compounds* 895, 162553 (2022).
- Emergence of magnetoelectric-relaxor phase in La₃Ni₂TaO₉. J Saha, G Sharma, S Chaudhary, R Athira, RK Singh, RJ Choudhary, SD Kaushik, **Patnaik, S.**, CV Tomy, *Journal of Magnetism and Magnetic Materials* 546, 168825 (2022).
- Growth parameters of Bi_{0.1}Y_{2.9}Fe₅O₁₂ thin films for high frequency applications. Ganesh Gurjar, Vinay Sharma, **Patnaik, S.**, Bijoy K Kuanr, *Thin Solid Films*, 758, 139446 (2022).
- Substantial enhancement in thermoelectric figure-of-merit of half Heusler ZrNiPb alloys. Amardeep Sagar, Aman Bhardwaj, Andrei Novitskii, Vladimir Khovaylo, **Patnaik, S.**, arXiv: 2208. 13563 (2022).
- Evidence of ferromagnetic clusters in magnetic Weyl semimetal Co₃Sn₂S₂. V Nagpal, S Chaudhary, P Kumar, **Patnaik, S.**, *Journal of Magnetism and Magnetic Materials*, 564, 170059 (2022).
- Crystal orientation dependent spin pumping in Bi_{0.1}Y_{2.9}Fe₅O₁₂/Pt interface, Ganesh Gurjar, Vinay Sharma, Avirup De, Sunil Nair, **Patnaik, S.**, Bijoy K Kuanr, *Journal of Physics D: Applied Physics*, 56, 385302 (2023).
- Two-fold anisotropic superconducting state in topological superconductor Sn₄Au. MM Sharma, Ganesh Gurjar, **Patnaik, S.**, Veerpal PS Awana, *Europhysics Letters*, 142 (2), 26004 (2023).
- Effects of heat-flux vector and Braginskii viscosity on wave dissipation and instabilities in rotating gravitating anisotropic plasmas, E. T. Desta, **Prajapati, R.P.**, and T. H. Eritro, *European Physical Journal Plus* 137, 437 (2022). [Springer, I.F.- 3.758].
- Effects of cosmic radiation pressure on the gravitational instability of rotating plasmas, **Prajapati, R.P.**, and IshaShailesh, *J. Astrophysics & Astronomy*, 43, 33 (2022). [Springer, I.F.- 1.610]
- Editorial: Waves, Instabilities and Structure Formation in Astrophysical Plasmas, **Prajapati, R.P.**, and Vinod Krishan, *J. Astrophysics & Astronomy*, 43, 19 (2022). [Springer, I.F.-1.610]

- Kelvin–Helmholtz instability in sheared dusty plasma flows including dust polarization and ion drag forces, B. Dolai and **Prajapati, R.P.**, *Physica Scripta*, 97, 065603 (2022). [IOP (UK), IF 3.081]
- Dissipation of hydromagnetic waves in the viscous polytropic zone of the solar wind including FLR corrections, ohmic diffusion and the Hall effect, **Prajapati, R.P.**, E. T. Desta, Mei-Ching Fok and T. H. Eritro, *Month. Not. Roy. Astron. Soc.* 510, 2127 (2022). [Royal Astronomical Soc. (UK), IF-5.235].
- Cosmic ray-driven magnetohydrodynamic (MHD) waves in magnetized self-gravitating dusty molecular clouds, PallabBoro and **Prajapati, R.P.**, *Month. Not. Roy. Astron. Soc.* 522, 1752 (2023). [Royal Astronomical Soc. (UK), IF-5.235].
- Bhatti Imtiaz Noor, Rawat R, **Pramanik A.K.**, Weak Localization in the layered iridates $\text{Sr}_2\text{Ir}_{1-x}\text{M}_x\text{O}_4$ ($\text{M} = \text{Ru}, \text{Ti}$): Role of interplay between spin-orbit coupling and magnetism, *Phys. Rev. B*, 2023, 107:144410
- A. Vats, **Puri, S.**, and V. Banerjee, Emergence of Biaxiality in Nematic Liquid Crystals with Magnetic Inclusions: Some Theoretical Insights, *Phys. Rev. E* 106, 044701 (2022).
- S.S.H. Zaidi, P.K. Jaiswal, M. Priya and **Puri, S.**, Universal Fast Mode Regime in Wetting Kinetics, *Phys. Rev. E (Letters)* 106, L052801 (2022).
- M. Kumar, V. Banerjee, **Puri, S.**, and M. Weigel, Critical Behavior of the Three-state Random-field Potts Model in Three Dimensions, *Phys. Rev. Research (Letters)* 4, L042041 (2022).
- R. Singh and **Puri, S.**, Strain Fields and Critical Phenomena in Manganites I: Spin-Lattice Hamiltonians, *J. Stat. Mech.* 033205 (2023).
- R. Singh and **Puri, S.**, Strain Fields and Critical Phenomena in Manganites II: Spin-Lattice-Energy Hamiltonians, *J. Stat. Mech.* 033206 (2023).
- M.K. Verma, R. Agrawal, P.K. Yadav and **Puri, S.**, Nonlinear Energy Dissipation and Transfers in Coarsening Systems, *Phys. Rev. E* 107, 034207 (2023).
- **Rai, Amit**, Transfer of non-classical features and quantum states of light in circularly coupled waveguide arrays, *J. Opt.* 24 (2022) 125801 (2022) (IOP Publishing).
- Singh, P.K., Khunthey, B., Bhardiya, S.R., Singh, M., Rai V. K., **Rai, A.**, Co-operative visible-light and Cu/Cu₂O@g-C₃N₄ catalysis towards Hantzsch/Biginelli synthesis of dihydro-pyridine/pyrimidine; *J Heterocyclic Chem.* 2023, 60, 232–240.
- Shukla, P., Asati, A., Patel, D., Singh, M., Rai, V. K., **Rai, A.**, Novel Synergistic Catalysis by Ethylcarbodiimide Hydrochloride Salt and CuI Towards Morita-Baylis-Hillman Reaction; *Chemistry Select*, 2023, 8, e202202747 (1 of 4).
- Singh, M., Bhardiya, S.R., **Rai, A.**, Rai, V. K.: Graphene-based Nanomaterials for Electrochemical Sensing of Hydrazine: A Review: *Curr. Anal. Chem.*, 2023, 19, 27-37
- Kesar Tandekar, Marc Schmidtmann, Anjali Tripathi, Neeraj Kumar Mishra and **Sabbani S.**, Light-induced dissolution and concomitant crystallization of a Keggin-type polyoxometalate mimicking a naturally occurring phenomenon, *Chem. Commun.*, 2023, 59, 3241
- Neeraj K. Mishra, Anjali Tripathi, **Sabbani, S.**, Synthesis of polyoxometalate based copper-amino-triazole-inorganic-organic hybrid materials and related chemistry, *Results in Chemistry*, 2022, 4, 100454.
- Neeraj Kumar Mishra, Deepak Bansal, and Sabbani, S., Polyoxometalate-Supported Copper (I)–Pyrazole Complex: Unusual Stability, Geometrical Isomers, Organic Transformation, and Computation, *ACS Omega*, 2022, 7, 35, 31403–31412.
- Kesar Tandekar, Anjali Tripathi, Muvva D. Prasad and **Sabbani, S.**, Keggin based self-assembled mesoporous materials for the capture of selective guest molecules, *Mater. Adv.*, 2022, 3, 5521.
- Bina Kumari, **Subir K. Sarkar**, Pradipta Bandyopadhyay, Tests of a generalized Barker-Henderson perturbation theory for the phase coexistence diagram of an anisotropic potential, *Chemical Physics*, 559 (2022) 111533
- Yadav Y, Tyagi, R, Kumar, R, **Sagar, R.**,* Conformationally Locked Sugar Derivatives and Analogues as Potential Neuraminidase Inhibitors *Eur J Med Chem.*, 2023, 255, 115410.
- Singh, K, Behera, SS, Tyagi, R, Tiwari, G, **Sagar, R.**,* Metal free Synthesis of 2,3-dideoxy- α , β -unsaturated carbohydrate enals (Perlin aldehydes) *Carbohydr. Res.*, 2023, 531, 108890.
- Verma, N, Tyagi, R, Kumar, R, **Sagar, R.**,* Electro-organic green synthesis of dicyano-2-(2-oxoindolin-3-ylidene) malononitriles using molecular iodine as catalyst *RSC Adv*, 2023, 13, 15024-15030.
- Gupta A, Singh N, Gautam G, Dhakar N, Kumar S, **Sasmal P. K.**, Visible and NIR-Light Photoactivatable o-Hydroxycinnamate System for Efficient Drug Release with Fluorescence Monitoring. *RSC Med. Chem.*, 2023, 14, 1088–1100. (Cover Article)

- Gupta A, Adarsh A, Manchanda V, **Sasmal P. K.**, Gupta S., Covid-19 Detection using AIE-Active Iridium Complexes. *Dalton Trans.*, 2023, 52, 1188–1192.
- Kumari G, Gupta A, Sah RK, Gautam A, Saini M, Gupta A, Kushawaha AK, Singh S, **Sasmal P.K.**, Development of Mitochondria Targeting AIE-Active Cyclometalated Iridium Complexes as Potent Antimalarial Agents. *Adv. Healthcare Mater.*, 2023, 12, 2202411
- Agarwal A, Kumar A, Garg P, Chakraborty A, Verma R, Sarwat M, Gupta A, **Sasmal P. K.**, Verma YK, Chowdhury C, Mukherjee M., Algal Biomass-Loaded Hydrogel Scaffolds as a Biomimetic Platform with Antibacterial and Wound Healing Activities. *ACS Appl. Polym. Mater.*, 2022, 4, 5800–5812
- Palit, Rajdip, Prajapati, Manoj and **Shah, R.**, “Dynamics of actions of automorphisms of discrete groups G and applications to lattices in Lie groups”, *Groups, Geometry and Dynamics*, 17, 185-213 (2023).
- Raj A, Kumar M, Kumar A, Amell, **Singh K.**, Sharma S, Avneesh A., “Effect of doping engineering in TiO₂ electron transport layer on photovoltaic performance of perovskite solar cells”, *Materials Letters*, 2022, 313 131692
- Kumar V, Chauhan HC, Nagal V, Hafiz AK, **Singh K.**, Lattice-Distortion-Induced Change in the Magnetic Properties in Br-Defect Host CsPbBr₃ Perovskite Quantum Dots, *The Journal of Physical Chemistry Letters*, 2023, 14 888-896
- Nagal V, Kumar V, Rahman S, Kumar K, **Singh K.**, Kumar M, Ahmad R, Hafiz AK., Insight into Hot Carrier Kinetics of CsPbBr₃/ZnO Heterostructures for Photodetector Application, *ACS Applied Optical Materials*, 2023, 1, 3, 779–787
- Singh AK, Prasad J, Kumar A, Srivastava A, Tyagi UP, Prajapati B, **Singh K.**, One-step facile synthesis of MoS₂ - reduced graphene oxide/ZnO nanostructure for high-performance microwave absorption, *Materials Science and Engineering: B* 2023, 293, 116450
- Kumar K, Sri S, Diman TK, Solanki PR, **Singh K.**, Biocompatible Nanoarchitectonics of Water-Soluble 2 Vanadium Dichalcogenides Quantum Dots Functionalized 3 with Capping Agents, *Phys. Status Solidi RRL*, 2023, 2300040, DOI: 10.1002/pssr.202300040
- Nagal V, Kumar V, Manjari Jain M, Saini SK, Kumar M, **Singh K.**, Bhattacharya S, Rafiq Ahmad R, Hafiz AK., Slow Cooling and Transfer Dynamics of Hot Excitons in CsPbBr₃ Perovskite Quantum Dots/g-CN Nanosheet Heterostructures: Implications for Optoelectronic Applications, *ACS Applied Nano Materials*, 2023 6 (10), 8894-8906

Books: (01)

- Editors: R. K. Sonkar, **Singh, K.**, R. Sonkawade, “Smart Nanostructure Materials and Sensor Technology”, ISBN: 978-981-19-2684-6, ISBN:978-981-19-2685-3 (eBook), Springer Nature, 2023

Chapters in Books : (09)

- Gaur, A., Bisht, P., **Mahato, R.N.**, (2022). Fundamentals of Nanomaterials and Design Concepts for Sensing Devices. In: Sonker, R.K., Singh, K., Sonkawade, R. (eds) Smart Nanostructure Materials and Sensor Technology. Springer, Singapore. https://doi.org/10.1007/978-981-19-2685-3_2
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Impact of cross-section uncertainties on supernova neutrino spectral parameter fitting in the Deep Underground Neutrino Experiment e-Print: arXiv:2303.17007 [physics.ins-det] URL - <http://arxiv.org/abs/2303.17007>
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Highly-parallelized simulation of a pixelated LArTPC on a GPU, e-Print: arXiv: 2212.09807 [physics.comp-ph] URL - <https://arxiv.org/abs/2212.09807>
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Identification and reconstruction of low-energy electrons in the ProtoDUNE-SP detector, e-Print arXiv: 2211.01166 [hep-ex] URL - <https://arxiv.org/abs/2211.01166>
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): DUNE Offline Computing Conceptual Design Report, e-Print: 2210.15665 [physics.data-an] URL - <https://arxiv.org/abs/2210.15665>
- Abud, A. A. et al (including Parveen, S. and **Mehta, P.**): Reconstruction of interactions in the ProtoDUNE-SP detector with Pandora, e-Print: 2206.14521 [hep-ex] URL - <https://arxiv.org/abs/2206.14521>
- **Kulriya, P.K.**, Waseem Ashraf, Manika Khanuja, Abid Hussain, “Functional 2D nanomaterials for selective detection/sensing of hydrogen gas: An Overview”, “Gas Sensors Manufacturing, Materials, and Technologies”, Ed. Ankur Gupta, Mahesh Kumar, Rajeev Kumar Singh, Shantanu Bhattacharya, CRC Press, United Kingdom, 2022, 23

- Ankita Rawat, Kedar Singh, **Kulriya, P.K.**, “2D/3D materials for gas sensors”, “Smart Nanostructure Materials and Sensor Technology”, Ed. Rakesh Kumar Sonker, Kedar Singh, Rajendra Sonkawade, Springer Nature Singapore, 25 August 2022, 373
- **Sagar, R.**, et al, Recent Advances in Synthesis of Diverse Glycopeptides and Glycohybrids Elsevier Publication, 2023

Conference Proceedings: (08)

- **Agarwal, S.**, and Chandra Shakher, “In-plane coplanarity measurement by Talbot interferometer”, in Optical Metrology and Inspection for Industrial Applications IX, vol. 12319, p. 123190U. SPIE, (2022).
- **Agarwal, S.**, “Measurement of temperature and temperature profile of nanoparticle additive liquid fuel by interferometry”, in Optical Metrology and Inspection for Industrial Applications IX, vol. 12319, pp. 36-40. SPIE, (2022).
- Sheeba Shafaq and **Mehta, P.**, “Impact of Non-standard Interactions on Violation of Leggett-Garg Inequality in Three-Flavour Neutrino Oscillations”, Proceedings of the 24th DAE-BRNS High Energy Physics Symposium”, Springer Proc. Phys. 277 (2022) 617-620
- Jogesh Rout, Samiran Roy, Mehedi Masud, Mary Bishai and **Mehta, P.**, “Enhancing the Sensitivities to Standard Unknowns in Neutrino Oscillation Framework Using High-Energy Beams at DUNE”, Proceedings of the 24th DAE-BRNS High Energy Physics Symposium”, Springer Proc. Phys. 277 (2022) 559-563
- Structural and Transport Study in Transition Metal Dichalcogenide 2H-TaS₂, M. Singh, A. Mallik, K. Yadav, M. Lamba, **Patnaik, S.**, 66th DAE-SSPS, BIT Mesra, Ranchi, 18 – 22 December, 2022
- Anomalies in the in-plane hall resistivity of Fe₃GeTe₂, P. Saha, M. Singh, P. Das, P. Kumar, M. Lamba, K. Yadav, **Patnaik, S.**, 66th DAE-SSPS, BIT Mesra, Ranchi, 18 – 22 December, 2022
- Structural, magnetic and magneto-capacitance study of alpha-Mn₂O₃ and Mn_{2-x}V₂O₃ (x=0.05), P. Kumar, M. Sahu, U. Shankar, S. Chaudhary, P. Das P. Saha, **Patnaik, S.**, B. K. Kuanr, 66th DAE-SSPS, BIT Mesra, Ranchi 18-22 Dec, 2022. 66th DAE-SSPS, BIT Mesra, Ranchi, 18 – 22 December, 2022
- Temperature-dependent reversal of Hall resistivity in Weyl semimetal Co₃In₂S₂, P. Das, N. S Anand, P. Kumar, P. Saha, M. Singh, U. Shankar, **Patnaik, S.**, 66th DAE-SSPS, BIT Mesra, Ranchi, 18 – 22 December, 2022