

School of Physical Sciences (SPS)

Journals /Research Articles: (93)

- P S Pillai, **Agarwal S.**, B Kumar, R Alagirusamy, A Das, Chandra Shakher, “Digital holographic interferometry for the measurement of temperature distribution around textile conductive yarn embedded in heating garments”, *Optical Engineering*, 60 (12), 2021
- Dwivedi B, Kumar S, **Das D.**, “Selective inclusion of p-xylene by bis-hydrazone compounds”, *CrystEngComm*. 2022, 24: 1161 – 1165.
- Mondal B, Jagadeesh C, **Das D.**, Saha J., “An acid-promoted pseudocine substitution manifold of c-aminocyclopentenone enables divergent access to polycyclic indole derivatives”, *Chem. Commun.* 2022, 58: 2504 – 2507.
- L. Premkumar, F. Ahmad, and **Das Shankar P.**, “Localization, Disorder, and Entropy in a Coarse-Grained Model of the Amorphous Solid”, *Entropy*, 23, 1171 (2021). <https://doi.org/10.3390/e23091171>
- Prakash Vardhan and **Das Shankar P.**, Configurational entropy from replica approach: A density functional model, *Physical Review E*, 105, 024110 (2022).
- **Ghosh, S.**, with Harish C. Chaun, Birendra Kumar, Ankita Tiwari, J. Tiwari “Different critical exponents on two sides of transition: Observation of crossover from Ising to Heisenberg exchange in skyrmion host Cu₂OSeO₃”, *Physical Review Letters*, 128, 015703-6 (2022).
- **Ghosh, S.**, with P. K. Srivastava, Yasir Hassan, D. de Sousa, Y. Gebredingle, M. Joe, F. Ali, Y. Zheng, W. J. Yoo, J. T. Teherani, B. Singh, T. Low, C. Lee, “Resonant tunneling through twisted black phosphorus homostructures”, *Nature Electronics*, 4, 269–276 (2021).
- **Ghosh, S.**, with Birendra Kumar, Jeetendra K. Tiwari, Harish C. Chauhan, “Multiple magnetic phase transitions with different universality classes in bilayer La_{1.4}Sr_{1.6}Mn₂O₇ manganite”, *Scientific Reports*, 11, 21184-17 (2021).
- **Ghosh, S.**, with Jeetendra K. Tiwari, Birendra Kumar, Harish Chandr Chauhan “Critical scaling and magnetic phase diagram of bi-skyrmion host quasi-two-dimensional La_{1.37}Sr_{1.63}Mn₂O₇ bi-layer manganite”, *Journal of Magnetism and Magnetic Materials*, 535, 168020-10 (2021).
- **Ghosh, S.**, with Jeetendra Kumar Tiwari, Birendra Kumar, Harish C. Chauhan, “Magnetism in quasi-two-dimensional tri-layer La_{2.1}Sr_{1.9}Mn₃O₁₀ manganite”, *Scientific Reports*, 11, 14117-14 (2021).
- **Ghosh, S.**, with Nasir Ali, B. Singh, Vijaya, S. Lal, C. S. Yadav, K. Tarafder, “Ferromagnetism in Mn-Doped ZnO: A Joint Theoretical and Experimental Study”, *Journal Physical Chemistry C*, 125, 7734–7745 (2021).
- Dutta, Parikshit and **Ghoshal, Debashis**, “Pseudo differential operators on Q_p and L-series” in p-Adic numbers, ultrametric analysis and applications, vol 13 (4) pp 280—290, October, 2021
- Dutta, Parikshit and **Ghoshal, Debashis**, “A p-artin model for modular cusp forms in Theor. Math. Phys., vol 209 (1) pp 1403—1422, October, 2021.
- Sharma, Prem; Bansal, Meenakshi; Sethi, Aaftaab; Singh, Poonam; Pena, Lindomar, Grishina, Maria; **Goel, Vijay**, Chaturvedi, Shubhra; Kumar, Dhruv; Rathi, Brijesh “Computational Methods Directed Towards Drug Repurposing For COVID-19: Advantages and Limitations”, *RSC Adv.*, 2021, 11, 36181.
- **Gupta V. P.**, R. Jain and B. Talwar, “On closed Lie ideals and center of generalized group algebras”, *Journal of Mathematical Analysis and Applications*, 502 (1), 2021, Paper No. 125228 (24 pages).
- K. C. Bakshi and **Gupta V. P.**, “Lattice of intermediate subalgebras”, *Journal of the London Mathematical Society*, 104 (5), 2082-2127 (2021).
- K. C. Bakshi and **Gupta V. P.**, “A few remarks on Pimsner-Popa bases and regular subfactors of depth 2”, *Glasgow Mathematical Journal*, Published online in December 2021. Doi: <https://doi.org/10.1017/S0017089521000379>
- D. Dawra, M. Dimri, A. K. Singh, **Jha, Alok K. S.**, R. K. Pandey and M. Mohan, “Theoretical calculations of the photoionization cross sections for the ground and lowest two excited states of Ni XVIII ion”, *Eur. Phys. J. D*, 76, 59, 2022.
- M. Dimri, D. Dawra, A. K. Singh, **Jha, Alok K. S.**, R. K. Pandey, R. Sharma and M. Mohan, “Fine structure calculations of excitation energies, lifetimes and radiative properties of S-like Kr-XXI”, *Radiation Physics and Chemistry*, 189, 109756, 2021.
- M. Dimri, D. Dawra, A. K. Singh, **Jha, Alok K. S.**, R. K. Pandey, R. Sharma, and M. Mohan, “Electron impact excitation of Na-like Cu XIX using the Breit–Pauli R-matrix method”, *Eur. Phys. J. D*, 75, 157, 2021.

- D. Dawra, M. Dimri, A. K. Singh, **Jha, Alok K. S.**, R. K. Pandey, R. Sharma and M. Mohan, “Influence of strong coupled plasma environment on photoionization of H-like O^{7+} ion”, *Physics of Plasma*, 28, 112706, 2021.
- **Kashyap Manish K.**, “Enhanced figure of merit of TaIrGe Half-Heusler alloy for thermoelectric applications under the effect of isotropic strain”, co-authored with Nisha, Hardev S. Saini, Sunita Srivastava, *Journal of Solid State Chemistry* 303, 122524 (2021).
- **Kashyap Manish K.**, “Effect of hydrostatic pressure on thermoelectric performance of topological half-Heusler LuPdBi compound”, co-authored with Nisha, Hardev S. Saini, Sunita Srivastava, *Physica Scripta*, 96 (12), 125702 (2021).
- **Kashyap Manish K.**, “Enhancement in magnetic parameters of L10-FeNi on Pd-substitution for permanent magnets”, co-authored with Priti Rani, Renu Singla, Jyoti Thakur, Ali H. Reshak, *Indian J. Physics* (2021) doi:10.1007/s12648-021-02221-y
- **Kashyap Manish K.**, “Half metallicity and long-range magnetic order in graphene/hematene van der Waals heterostructure”, co-authored with Renu Singla, *Indian Journal of Physics*, (2021), doi: 10.1007/s12648-021-02133-x.
- Singh Amit Kumar, Yadav Saurabh, **Kulriya P. K.**, Katharria Y. S., “Sapphire substrate induced effects on β -Ga₂O₃ thin films”, *J. of Materials Science: Materials in Electronics*, (2022) <https://doi.org/10.1007/s10854-022-08212-x>
- Sharma S. K., Grover V., Shukla R., Hussain A., Mishra A., Meena R. C., **Kulriya P. K.**, “Evidence of improved tolerance to electronic excitation in nanostructured Nd₂Zr₂O₇,” *J. of Applied Physics*, 2021, 129:115902.
- Panghal Asha, Kumar Yogendra, **Kulriya P. K.**, Shiarge Parasharam M, Singh N. L., “Atomic order-disorder engineering in the La₂Zr₂O₇ pyrochlore under low energy ion irradiation”, *Ceramics International*, 2021, 47:20248-20259.
- Kanwar Komal, Coondoo Indrani, Anas M, Malik Vivek K, Kumar Pradip, Kumar Sandeep, **Kulriya Pawan K.**, Kaushik S D, Panwar Neeraj, “A comparative study of the structural, optical, magnetic and magnetocaloric properties of HoCrO₃ and HoCr_{0.85}Mn_{0.15}O₃ orthochromites”, *Ceramics International*, 2021, 47:7386-7397.
- Panghal Asha, Kumar Yogendra, **Kulriya P. K.**, Shirage Parasharam M, Singh N. L., “Structural assessment and irradiation response of La₂Zr₂O₇ pyrochlore: Impact of irradiation temperature and ion fluence”, *Journal of Alloys and Compounds*, 2021, 862:158556.
- Kaur Rajveer, Gupta M., **Kulriya P. K.**, Ghumman S. S., “Waste loading capability of zirconolite—A review”, *AIP Conference Proceedings*, 2021, 2352:050040.
- Sahu Rajesh, Jain S. K., Singh F., **Kulriya P. K.**, Jain Ankur, Tripathi Balram, “Effect of multiwall carbon nanotubes on photo catalytic activity of CdS nanocrystals”, *Materials today Proceeding*, 2021, 38:1218-1221.
- Patel Gnansagar B, Singh N. L., Singh Fouran, **Kulriya P. K.**, “Effect of swift heavy ions irradiation on physicochemical and dielectric properties of chitosan and chitosan-Ag nanocomposites, Radiation Physics and Chemistry”, 2021, 181: 109288
- Singh Jitendra, Gupta Himanshi, Singh R. G., Ojha S., **Kulriya P. K.**, Fouran Singh, “Photoluminescence quenching and photo-induced charge transfer processes in poly (3-octylthiophene) polymer based hybrid nano-composites by ion irradiation for possible optoelectronic applications”, *Journal of Electronic Materials*, 2021, 50:85-99.
- 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 Gd₂Ti₂-yZr_yO₇ (0.0 ≤ y ≤ 2.0) pyrochlore under electronic stopping regime, *Journal of Nuclear Materials*, 2022, 564: 153682.
- 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.
- Meghadeepa Adhikary, Arnaud Ralko and **Kumar Brijesh**, “Quantum paramagnetism and magnetization plateaus in a kagome-honeycomb Heisenberg antiferromagnet”, *Phys. Rev. B* 104, 094416 (2021) .
- Priyanka Bisht, Meenakshi, Arpit Gaur, and **Mahato Rabindra Nath**, “Structural and magnetocaloric properties of (0.75)La_{0.7}Ca_{0.3}MnO₃/ (0.25) La_{0.84}Sr_{0.16}MnO₃ nanocomposite”, *Physica B: Condensed Matter*, 619, 413216 (October, 2021).
- Arpit Gaur, Meenakshi, Vipin Nagpal, Priyanka Bisht, and **Mahato Rabindra Nath**, “Effect of Bi-doping on structural, magneto-caloric, and magneto-resistive properties of La_{0.67-x}Bi_xCa_{0.33}MnO₃ perovskites”, *Solid State communications*, 340, 114504 (December, 2021)
- Sheeba Shafaq and **Mehta Poonam**, “Enhanced violation of Leggett–Garg inequality in three flavour neutrino oscillations via non-standard interactions”, *J.Phys.G*, 48 (2021) 8, 085002.

- Jogesh Rout, Sheeba Shafaq, Mary Bishai, and **Mehta Poonam**, “Physics prospects with the second oscillation maximum at the Deep Underground Neutrino Experiment”, *Phys. Rev. D*, 103, 116003 (2021).
- Mehedi Masud, **Mehta Poonam**, Christoph A. Ternes and Mariam Tortola, “Non-standard neutrino oscillations: perspective from unitarity triangles”, *JHEP* 05 (2021) 171.
- **Mohanty Tanuja**, “Substrate assisted Fermi level shifting of CVD graphene by swift heavy ions”, co-authored with Sanjeev Kumar, Jyoti Shakya, T. Mahanta and D. Kanjilal, *Surfaces and Interfaces* 2022, 28, 101625
- **Mohanty Tanuja**, “Fermi level modulation of boron nitride nanosheets by vacancy driven compressive strain, co-authored with Tanmay Mahanta, *Applied Physics Letters*, 2021, 119, 091902
- **Mohanty Tanuja**, “Defect-induced strain assisted surface electronic response of layered materials, co-authored with Sanjeev Kumar and Tanmay Mahanta, *Bulletin of Materials Science*, 2021, 21, 256
- **Mohanty Tanuja**, “Work function modulation of few layer graphene by swift heavy ion irradiation”, coauthored with P.K. Kasana and J. Shakya, *Journal of Nanoscience and Nanotechnology*, 2021, 21, 5603
- DNA damage, cell cycle perturbation and cell death by naphthalene diimide derivative in gastric cancer cells. S. K. Gurung, S. Kumari, S. Dana, K. Mandal, **Sen Sobhan**, **Mukhopadhyay P.**, N. Mondal. *Chemico-Biological Interactions*, 2022, 358, 109881.
- Kandari D, Joshi H, Tanwar N, **Munde M.**, Bhatnagar R, Delineation of the Residues of Bacillus anthracis Zinc Uptake Regulator Protein Directly Involved in Its Interaction with Cognate DNA. *Biol Trace Elem Res.* 199, 3147-3158, 2021.
- Tiwari N., Mishra R, Gupta S, Srivastava R, Aggarwal S, Bandopadhyay P, **Munde M.**, Synthetic Tunability and Biophysical Basis for Fabricating Highly Fluorescent and Stable DNA Copper Nanoclusters *Langmuir*, 37, 9385-9395, 2021.
- Hooda P, Ishtikhar M, Saraswat S, Bhatia P, Mishra D, Trivedi A, Kulandaisamy R, Aggarwal S, **Munde M.**, Ali N, AlAsmari AF, Rauf MA, Inampudi KK, Sehgal D. Biochemical and Biophysical Characterization of the Hepatitis E Virus Guanine-7-Methyltransferase, *Molecules*. 2022, 27, 1505.
- Chiral anomaly induced negative magnetoresistance and weak anti-localization in Weyl semimetal Bi_{0.97}Sb_{0.03} alloy, Kumar, Pawan and Nagpal, Vipin and **Patnaik, S.**, *Journal of Physics: Condensed Matter*, 34, 5, 055601, (2021)
- Structural and superconducting analysis of topologically non-trivial alloy of Sn_{1-x}Sb_x (x= 0.4, 0.5, 0.6), Sharma, MM and Sharma, Prince and Gurjar, Ganesh and **Patnaik, S.**, and Awana, VPS, *Journal of Physics and Chemistry of Solids*, 156, 110136, (2021)
- Magnetoresistance and scaling laws in type-II Weyl semimetal WP₂, Nagpal, V and Jat, KS and **Patnaik, S.**, *Physica B: Condensed Matter*, 616, 413062, (2021)
- Control of magnetization dynamics by substrate orientation in YIG thin films, Gurjar, Ganesh and Sharma, Vinay and **Patnaik, S.**, and Kuanr, Bijoy K, *Materials Research Express*, 8,6, 066401, (2021)
- Superconductivity with Topological non-trivial surface states in NbC, Karn, NK and Sharma, MM and Sharma, Prince and Gurjar, Ganesh and **Patnaik, S.**, and Awana, VPS, *Journal of Superconductivity and Novel Magnetism*, 34, 11, 2717--2724, (2021)
- Structural and WAL analysis of Topological single-crystal SnSb₂Te₄, Saxena, Ankush and Sharma, MM and Sharma, Prince and Kumar, Yogesh and Rani, Poonam and Singh, M and **Patnaik, S.**, and Awana, VPS, arXiv:2107.03014, (2021)
- Effect of magnetic (Nd) doping on electrical and magnetic properties of topological Sb₂Te₃ single crystal, Kumar, Kapil and Kumar, Yogesh and Singh, M and **Patnaik, S.**, and Felner, I and Awana, VPS, *Journal of Superconductivity and Novel Magnetism*, 34, 10, 2463, (2021)
- SnAs: A 4K weak type-II superconductor with non-trivial band topology, Sharma, MM and Karn, NK and Sharma, Prince and Gurjar, Ganesh and **Patnaik, S.**, and Awana, VPS}, *Solid State Communications*, 340, 114531, (2021)
- Structural and weak antilocalization analysis of topological single-crystal SnSb₂Te₄, Saxena, Ankush and Sharma, MM and Sharma, Prince and Kumar, Yogesh and Rani, Poonam and Singh, M and **Patnaik, S.**, and Awana, VPS}, *Journal of Alloys and Compounds*, 895,162553, (2022)
- Emergence of magnetoelectric-relaxor phase in La₃Ni₂TaO₉, Saha, J and Sharma, G and Chaudhary, S and Athira, R and Singh, RK and Choudhary, RJ and Kaushik, SD and **Patnaik, S.**, and Tomy, CV, *Journal of Magnetism and Magnetic Materials*, 546, 168825, (2022)
- **Prajapati Ram Prasad**, and Pallab Boro, “Suppression of the Kelvin–Helmholtz instability due to polarization force in nonuniform magnetized sheared dusty plasmas”, *AIP Advances* 11, 095202 (2021)

- **Prajapati Ram Prasad**, Gravitational instability in radiative molecular clouds including cosmic ray diffusion and ion Larmor radius corrections, *Monthly Notices of the Royal Astronomical Society*, Volume 510, Issue 2, February 2022, Pages 2127–2138
- Gondh Shobha, Patidar Manju Mishra, Kumar Kranti, Saravanan M.P., Ganesan V., **Pramanik A. K.**, Large exchange bias and low-temperature glassy state in the frustrated triangular-lattice antiferromagnet $\text{Ba}_3\text{NiIr}_2\text{O}_9$, *Phys. Rev. B*, 2021, 104: 014401
- Mall A.K., Gondh Shobha, **Pramanik A.K.**, Magnetic and electronic properties of $\text{YCr}_{1-x}\text{Ni}_x\text{O}_3$ ($0 \leq x \leq 0.15$) polycrystalline ceramics, *J. Magn. Magn. Mater.*, 2021, 539: 168326
- A. Vats, V. Banerjee and **Puri S.**, Domain Growth in Ferronematics: Slaved Coarsening, Emergent Morphologies and Growth Laws, *Soft Matter* 17, 2659 (2021)
- S. Pattanayak, S. Mishra and **Puri S.**, Ordering Kinetics in the Active Model B, *Phys. Rev. E* 104, 014606 (2021).
- S. Kumari, **Puri S.**, and V. Banerjee, Dipolar Ising Model: Phases, Growth Laws and Universality, *Phys. Rev. E* 104, 024126 (2021)
- S. Pattanayak, S. Mishra and **Puri S.**, Domain Growth in the Active Model B: Critical and Off-critical Composition, *Soft Materials*, 19, 286 (2021).
- R. Agrawal, M. Kumar and **Puri S.**, Domain Growth and Aging in the Random Field XY model: A Monte Carlo Study, *Phys. Rev. E*, 104, 044123 (2021)
- R. Agrawal, A. Pandey and **Puri S.**, Enhancement in Breaking of Time-reversal Invariance in the Quantum Kicked Rotor, *Phys. Rev. E*, 104, 064202 (2021)
- N. Birdi, T. Underwood, N. Wilding, **Puri S.**, and V. Banerjee, Equilibrium Phases and Domain Growth Kinetics of Calamitic Liquid Crystals, *Phys. Rev. E*, 105, 024706 (2022)
- R. Agrawal, F. Corberi, F. Insalata and **Puri S.**, Asymptotic States of Ising Ferromagnets with Long-range Interactions, *Phys. Rev. E*, 105, 034131 (2022)
- Rai, V. K., Verma, F., Bhardiya, S. R., Sheshma, H., **Rai, Ankita**, 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* 2021, 17 (01), 0070
- Bhardiya, S. R., Asati, A., Sheshma, H., **Rai, Ankita**, 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
- Singh, M.; Bhardiya, S. R.; Asati, A.; Sheshma, H.; **Rai, Ankita**, Rai, V. K.; Design of a sensitive electrochemical sensor based on Ferrocene-Reduced Graphene Oxide/Mn-spinel for hydrazine detection, *Electroanalysis*, 2021, 33, 464-472
- Singh, M.; Bhardiya, S. R.; Asati, A.; Sheshma, H.; **Rai, Ankita**, Rai, V. K.; Sensitive electrocatalytic determination of p-phenylenediamine using bimetallic nanocomposite of Cu-Ag nanoalloy and ionic liquid-graphene oxide, *Electroanal. Chem.*, 2021, 894, 115360-115368.
- Shukla, P., Singh, M., Rai, V.K., **Rai, Ankita**, Regioselective installation of enolizable ketones and unprotected mercaptoacetic acid into olefins using GO as phase transfer catalyst, *New J. Chem.* 2022, 46, 3297
- Pragya Naulakha, Neeraj Kumar Misra, N. Tanmaya Kumar and **Sabbani Supriya**, Unusual redox activity of the central heteroatom manganese in Anderson anion: Modulating its oxidation state in a gas solid reaction, *Inorganica Chimica Acta*, 2021, 525, 120471.
- Ajay Gupta, Aryan Gautam, and **Sasmal Pijus K.**, “Photoactivatable o-Hydroxycinnamic Platforms for Bioimaging and Therapeutic Release” *J. Med. Chem.* 2022, 65, 5274–5287.
- Neelu Singh, Ajay Gupta, Puja Prasad, Raj Kumar Sah, Arvind Singh, Sunil Kumar, Shailja Singh, Shalini Gupta, and **Sasmal Pijus K.**, “Mitochondria-Targeted Photoactivatable Real-Time Monitoring of a Controlled Drug Delivery Platform” *J. Med. Chem.* 2021, 64, 17813–17823.
- Neelu Singh, Ajay Gupta, Puja Prasad, Pritam Mahawar, Shalini Gupta, and **Sasmal Pijus K.**, “Iridium-Triggered Allylcarbamate Uncaging in Living Cells” *Inorg. Chem.* 2021, 60, 12644–12650. This work is selected as Featured Article and the ACS Editor’s Choice.
- “Molecular Picture of the Effect of Cosolvent Crowding on Ligand Binding and Dispersed Solvation Dynamics in G-Quadruplex DNA”, Kavita Yadav, Deepika Sardana, Him Shweta, Ndege Simisi Clovis, **Sen Sobhan*** *J. Phys. Chem. B* 2022, 126, 168. (Invited Article in Kankan Bhattacharyya Festschrift)

- “Graphene Quantum Dot-Based Optical Sensing Platform for Aflatoxin B1 Detection via the Resonance Energy Transfer Phenomenon”, Avinash Kumar Singh, Smriti Sri, Lakshmi BVS Garimella, Tarun Kumar Dhiman, **Sen Sobhan**, Pratima R Solanki* *ACS Appl. Bio. Mater.* 2022, 5, 1179
- Mandal, Arunava and **Shah, Riddhi**, The structure of Cartan subgroups in Lie Groups, *Mathematische Zeitschrift* 299 (3-4), 1587-1606 (2021)
- Yadav, Alok K., **Shah, Riddhi**, Distal actions of automorphisms of Lie groups G SubG, Mathematical Proceedings of Cambridge Philosophical Society, Published online in December, 2021. doi:10.1017/S0305004121000694
- Jagdees Prasad, Ashwani Kumar Singh, Monika Tomar, Vinay Gupta and **Singh Kedar**, “Hydrothermal synthesis of micro-flower like morphology aluminum-doped MoS₂/rGOnanohybrids for high efficient electromagnetic wave shielding materials”, *Ceramics International*, 47 (2021) 15648-15660.
- Amar Nath Yadav, Pramod Kumar, **Singh Kedar**, Femtosecond photoluminescence up-conversion spectroscopy in Cu doped CdS quantum dotsz Materials Letters 297, 159(2021) 129925
- Jagdees Prasad, Ashwani Kumar Singh, Ajay Pratap Singh, Gahlot, Monika Tomar, Vinay Gupta, **Singh Kedar**, “Electromagnetic interference shielding properties of hierarchical core-shell palladium-doped MoS₂/CNT nanohybrid materials”, *Ceramics International*, (2021), doi.org/10.1016/j.ceramint.2021.06.183
- Vandana Nagal, Virendra Kumar, Rafiq Ahmad, Marya Khan, Zishan H. Khan, **Singh Kedar**, Hidemitsu Furukawa, Ajit Khosla, Yoon Bong Hahn, and A. K. Hafiz, “Emerging Applications of g-C₃N₄ Films in Perovskite-Based Solar Cells”, *ECS Journal of Solid-State Science and Technology*, 10 (2021)065001
- Vandana Nagal, Virendra Kumar, Marya Khan, Suliman Alomar, Nirmalya Tripathy, Singh Kedar, Ajit Khosla, Naushad Ahmad, Aurangzeb Khurram Hafiz, and Rafiq Ahmad. “Highly sensitive uric acid biosensor based on vertically arranged ZnO nanorods on ZnO nanoparticles seeded electrode”, *New Journal of Chemistry*, 2021,45, 18863-18870
- Virendra Kumar, Vandana Nagal, Dr. Shubhda Srivastava, Mahesh Kumar, Bipin K. Gupta, Dr. Aurangzeb K. Hafiz, and **Singh Kedar**, “Power Dependent Hot Carrier Cooling Dynamics in Trioctylphosphine Capped CsPbBr₃ Perovskite Quantum Dots Using Ultrafast Spectroscopy”, *Chemistry Select* (2021) <https://doi.org/10.1002/slct.202102450>
- Nagal, Vandana, Virendra Kumar, Rahul Kumar, **Singh Kedar**, Ajit Khosla, Rafiq Ahmad, and Aurangzeb Khurram Hafiz. “CsPbBr₃ Nanoplatelets: Synthesis and Understanding of Ultraviolet Light-Induced Structural Phase Change and Luminescence Degradation”, *ECS Journal of Solid State Science and Technology*, 10, 096002 (2021)
- Abhishek Raj, Manish Kumar, Arvind Kumar, Amel Laref, **Singh Kedar**, Subhash Sharma, Avneesh Anshul “Effect of doping engineering in TiO₂ electron transport layer on photovoltaic performance of perovskite solar cells”, *Materials Letters* 313 (2022) 131692

Books: (05)

- **Kashyap Manish K.**, “Chapter: Beyond 3D-traditional materials thermoelectric materials, Book: Thermoelectricity and Advanced Thermoelectric Materials, Editors: Ranjan Kumar Ranber Singh”, co-authored with Renu Singla, Chapter 8, pp. 163-193 (2021) Elsevier, Woodhead Publishing, ISBN: 978012819984.
- Sengar, Saurabh K, Singh, Vinod, **Kulriya, Pawan K.**, Khauja, Manika, Kumar. Ashok, “Synthesis of Deformation Resistant Palladium (Pd) Nanoparticle Layer”, Proceedings of the International Conference on Atomic, Molecular, Optical & Nano Physics with Applications, Springer Proceedings in Physics book series (SPPHY) 27, 2022:75-84
- Sushama Kumari, S. K. Sharma, **Kulriya Pawan K.**, Vinod Singh & Swati Bugalia. “Conductivity and Structure Correlation in Gd₂Zr₂O₇ Pyrochlore for Oxide Fuel Cell Technology”, Proceedings of the international conference on Atomic, Molecular, Optical & Nano Physics with Applications, Springer Proceedings in Physics book series (SPPHY) 271, 2022:211-219.
- **Rai, Ankita**, Singh, M., Rai, V. K., Advanced Nanocatalysis for Organic Syntheses and Electroanalyses, 2022, Bentham Science Publishers; ISBN (online): 978-981-5040-16-6.
- Rai, V. K., Singh, M., **Rai, Ankita**, Nanocomposite Materials for Sensors, 2022; Bentham Science Publishers; ISBN (online): 978-1- 68108-596-8; ISSN (online): 2589-2193

Chapters in Books: (11)

- Dutta, Parikshit and **Ghoshal, Debashis**, “Phase operator on $L^2(Q_p)$ and the zeroes of Riemann and Fisher”, in “Advances in Non-Archimedean Analysis and Applications”, Springer, July, 2021 <https://doi.org/10.1007/978-3-030-81976-7>
- S. K. Gupta, **Kulriya Pawan K.**, Vinita Gupta, Radiation Stability of Nuclear Materials, Bulletin of Indian Association of Nuclear Chemists and Allied Scientists (IANCAS), Mumbai 2022; <https://www.iancas.org.in>
- Saurabh Kumar Sharma, Kumar Ajay, **Kulriya Pawan K.**, Radiation damage effects in pyrochlore structured ceramics, Radiation Stability of Nuclear Materials, Bulletin of Indian Association of Nuclear Chemists and Allied Scientists (IANCAS), Mumbai Vol. XVII(3), 2022;83 <https://www.iancas.org.in>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) Separation of track- and shower-like energy deposits in ProtoDUNE-SP using a convolutional neural network, e-Print: arXiv:2203.17053 [physics.ins-det] URL - <http://arxiv.org/abs/2203.17053>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) Scintillation light detection in the 6-m drift-length ProtoDUNE Dual Phase liquid argon TPC, e-Print: arXiv:2203.16134 [physics.ins-det] URL - <http://arxiv.org/abs/2203.16134>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) A Gaseous Argon-Based Near Detector to Enhance the Physics Capabilities of DUNE, e-Print: arXiv:2203.06281 [hep-ex] URL - <http://arxiv.org/abs/2203.06281>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) Snowmass Neutrino Frontier: DUNE Physics Summary, Contribution to 2022 Snowmass Summer Study, e-Print: arXiv:2203.062100 [hep-ex] URL - <http://arxiv.org/abs/2203.062100>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) Low exposure long-baseline neutrino oscillation sensitivity of the DUNE experiment, e-Print: arXiv:2109.01304 [hep-ex], Phys.Rev.D 105 (2022) 7, 072006, URL - <http://arxiv.org/abs/2109.01304>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) Design, construction and operation of the ProtoDUNE-SP Liquid Argon TPC, e-Print: arXiv:2108.01902 [physics.ins-det], JINST 17 (2022) 01, P01005, URL <http://arxiv.org/abs/2108.01902>
- Abud, A. A. et al (including Rout, J., Shafaq, S. and **Mehta, P.**) Searching for solar KDAR with DUNE, e-Print: arXiv:2107.09109 [hep-ex], JCAP 10 (2021) 065, URL <http://arxiv.org/abs/2107.09109>
- **Rai, Ankita**, Singh, M., Rai, V. K., Graphene-Based Nanomaterial Catalysis, 2022; Bentham Science Publishers; ISBN (online): 978-981-5040-49-4.

Conference Proceedings: (09)

- V Rastogi, **Agarwal S.**, SK Dubey, GS Khan, C Shakher Measurement of Temperature and Temperature Fluctuations in Micro Flame by Digital Holographic Interferometry using Volume Phase Holographic Grating, Digital Holography and Three-Dimensional Imaging, 2021.
- Prakash Vardhan, and **Das Shankar P.**, Replica theory for Structural Glass Transition using density functional Hamiltonian, Proceedings of the DAE Symposium, 2021
- Faizyab Ahmad, and **Das Shankar P.**, Elastic constants for the inhomogeneous amorphous states of the hard-sphere system. Proceedings of the DAE Symposium, 2021
- Mehedi Masud, **Mehta Poonam**, Christoph A Ternes and Mariam Tortola, “A geometrical look at neutrino oscillation probabilities with non-standard interactions”, Proceedings of “17th International Conference on Topics in Astroparticle and Underground Physics”, 26 August – 3 September, 2021, J.Phys.Conf.Ser. 2156 (2021) 012102.
- Sheeba Shafaq and **Mehta Poonam**, “Enhanced violation of Leggett-Garg Inequality in three flavor neutrino oscillations in presence of non-standard interactions”, Proceedings of “XIX International Workshop on Neutrino Telescopes”, published online in December, 2021, <http://doi.org/10.5281/zenodo.4672359>.
- Ferromagnetic Clusters and High Magnetocrystalline Anisotropy in Co₃Sn₂S₂, Nagpal, Vipin and Bhalothia, Sudesh and **Patnaik S.**, Bulletin of the American Physical Society,(2022), APS March Meeting 2022
- Aspects of topological superconductivity in SnTaS₂, Singh, Mainpal and Saha, Pallavi and Nagpal, Vipin and **Patnaik S.**, Bulletin of the American Physical Society, 2022, APS March Meeting 2022
- “Synthesis and Characterization of Topological Superconductor SnTaS₂”, M.Singh, P. Saha, V. Nagpal, **Patnaik S.**, “65th DAE-SSPS 2021”, 17 December, 2021

- “Effect of Excessive Mn Doping on Electrical Properties of Skyrmionic MnSi”, P. Saha, M. Singh, V. Nagpal, **Patnaik S.**, “65th DAE-SSPS 2021”, 17 December, 2021

Patents: (01)

- **Sasmal, P. K.**, Mitochondria-Targeted Photoactivatable Drug Delivery Platform: A Strategy for Real-Time Monitoring of Controlled Drug Release; Indian Patent Application No. 202111015826 and filed, 3 April, 2021