

Department of Physics, IIT Kanpur
Journal Publications for the period of April 2019 to March 2020

| Journal Name | Title of the Paper/Publication | Author(s) | | Year | Volume | Page numbers (start to end) |
|--------------|--------------------------------|------------|-----------|------|--------|-----------------------------|
| | | First name | Last Name | | | |

Amit Dutta

| | | | | | | |
|--|---|----------------------------------|---|-------|------------|-----------------------|
| J. Phys. Condensed Matter | Critical phase boundaries of static and periodically kicked long-range Kitaev chain | Utso Somnath Diptiman Amit | Bhattacharya, Maity, Sen, Dutta | 2019 | 31 | 174003-1 to 174003-14 |
| Physical Review B | Temporal variation in the winding number due to dynamical symmetry breaking and associated transport in a driven SSH chain | Souvik Utso Amit | Bandyopadhyay, Bhattacharya, Dutta | 2019. | 100 | 054305-1 to 054305-12 |
| Physical Review B | Dynamical preparation of a topological state and out-of-equilibrium bulk-boundary correspondence in a Su-Schrieffer-Heeger chain under periodic driving | Souvik Amit | Bandyopadhyay, Dutta | 2019 | 100 | 144302-1 to 144302-9 |
| Physical Review B | Dynamical Quantum Phase Transitions in Extended Toric-Code Models | Vatshal Utso Amit | Srivastav, Bhattacharya, Dutta | 2019 | 100 | 144203-1 to 144203-9 |
| New Journal of Physics | Quantum magnetometry using two-stroke thermal machines | Sourav Utso Wolfgang Victor Amit | Bhattacharjee, Bhattacharya, Niedenzu, Mukherjee, Dutta | 2020 | 22 | 013024-1 to 13024-14 |
| Physical Review B | Dynamical generation of Majorana edge-correlations in a ramped Kitaev chain coupled to non-thermal dissipative channels | Souvik Sourav Amit | Bandyopadhyay Bhattacharjee, Dutta | 2020 | 101 | 104307-1 to 104307-10 |
| J. Phys. A: Mathematical and Theoretical | One-dimensional quantum many body systems with long-range interactions | Somnath Utso Amit | Maity, Bhattacharya, Dutta | 2020 | 53 | 013001-1 to 013001-30 |

Tarun Kanti Ghosh

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|-------------------|--|------------------------|--------------------|------|-----|------------------------|
| Physical Review B | Thermoelectric and optical probes for a Fermi surface topology change in noncentrosymmetric metals ermoelectric and optical probes for a Fermi surface | Sonu Tutul Tarun Kanti | Verma Biswas Ghosh | 2019 | 100 | 045201-1 to 0425201-11 |
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| | topology change in noncentrosymmetric metals | | | | | |
| Physical Review B | Floquet topological phase transition in α -T ₃ lattice | Bashab Tarun Kanti | Dey Ghosh | 2019 | 99 | 205429-1 to 205429-9 |
| Journal of Applied Physics | RKKY interaction in Mn-doped 4 x 4 Luttinger systems | Sonu Arijit Tarun Kanti | Verma Kundu Ghosh | 2019 | 125 | 233903-1 to 233903-8 |

Debashish Chowdhury

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|-------------------------------------|--|---|---|-----------|------|-----|--------|
| PHYSICAL REVIEW E | Biologically motivated asymmetric exclusion process: Interplay of congestion in RNA polymerase traffic and slippage of nascent transcript" | S | | Ghosh | 2019 | 99 | 052122 |
| | | A | | Dutta | | | |
| | | S | | Patra | | | |
| | | J | | Sato | | | |
| | | K | | Nishinari | | | |
| | | D | | Chowdhury | | | |
| PHYSICAL REVIEW E | "Biologically motivated three-species exclusion model: Effects of leaky scanning and overlapping genes on initiation of protein synthesis", | B | | Mishra | 2019 | 100 | 022106 |
| | | D | | Chowdhury | | | |
| BIOPHYSICAL JOURNAL | "Laying tracks for poison delivery to "kiss of death": search for immune synapse by microtubules", <i>"New & Notable"</i> article (solicited by Editor), | D | | Chowdhury | 2019 | 116 | 2057 |
| JOURNAL OF PHYSICS CONDENSED MATTER | "Soft mechano-chemistry of molecular hubs in mitotic spindle: biomechanics and mechanical proofreading at microtubule ends", | D | | Chowdhury | 2020 | 32 | 284001 |
| | | D | | Ghanti | | | |
| PHYSICAL REVIEW E | "Stochastic thermodynamics and modes of operation of a ribosome: a network theoretic perspective" | A | | Dutta | 2020 | 101 | 032402 |
| | | G | M | Scheutz | | | |
| | | D | | Chowdhury | | | |

R. Vijaya

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|-------------------|---|---|------------------------------|------|----|---------|
| Optical Materials | Diffraction imaging of cracks in self-assembled photonic crystals | Sravya Rahul Dipak Govind Vijaya Shilpi | Rao Shaw Rout Kumar R. Gupta | 2019 | 91 | 189-194 |
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| ACS Applied Nanomaterials | Optical Heterostructures with dual features of broad spectral distribution and wide spatial diffraction | Arpita Govind Vijaya | Haldar Kumar R. | 2019 | 2 | 6655-6661 |
| Journal of Nanophotonics | Interplay of dual photonic stopband in fluorescence enhancement from dye-doped photonic crystal heterostructures | Dipak Govind Vijaya | Rout Kumar R. | 2019 | 13 | 046005 |
| Optics Communications | Narrowband ultraviolet generation in dispersion-shifted few-mode fiber via combined effect of intermodal four-wave mixing and nonlinear mode coupling | Sudip Vijaya | Chatterjee R. | 2020 | 458 | 124816 |

Manoj K Harbola

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|--|---|---|-------|--|-------------|-----|---------|
| JOURNAL OF PHYSICS B- ATOMIC MOLECULAR AND OPTICAL PHYSICS | Semianalytical wavefunctions and Kohn-Sham exchange-correlation potentials for two-electron atomic systems in two-dimensions | Rabeet Aashish Manoj | K | Singh Kumar Harbola | FEB 14 2020 | 53 | pp 1-10 |
| JOURNAL OF PHYSICS- CONDENSED MATTER | Simple correction to bandgap problems in IV and III-V semiconductors: an improved, local first-principles density functional theory | Sujoy Prashant Chhanda Debnarayan Manoj Duane Abhijit | B K D | Datta Singh Chaudhuri Jana Harbola Johnson Mookerjee | DEC 11 2019 | 31 | pp1-2 |
| JOURNAL OF CHEMICAL PHYSICS | Adiabatic connection in density functional theory in two-dimensions: A semi-analytic wavefunction based study for two-electron atomic systems | Rabeet Bikash Abhilash Manoj Prasanjit | K | Singh Patra Patra Harbola Samal | NOV 28 2019 | 151 | pp 1-10 |
| JOURNAL OF PHYSICS B- ATOMIC MOLECULAR AND OPTICAL PHYSICS | Universal nature of different methods of obtaining the exact Kohn-Sham exchange-correlation potential for a given density | Ashish Rabeet Manoj | K | Kumar Singh Harbola | APR 14 2019 | 52 | pp 1-8 |

Tapobrata Sarkar

| | | | | | | |
|-------------------|--|---------------------------|----------------------|------|-----|---------|
| Physics Letters B | Tidal effects away from the equatorial plane in Kerr backgrounds | Pritam Suvankar Tapobrata | Banerjee Paul Sarkar | 2019 | 795 | 29 - 36 |
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| Phys. Rev. D | Analytical approach to strong gravitational lensing from ultracompact objects | Rajibul Pritam Suvankar Tapobrata | Shaikh Banerjee Paul Sarkar | 2019 | 99 | 104040-1 to 104040-10 |
| Astrophysical Journal | Small Anisotropy in Stellar Objects in Modified Theories of Gravity | Shaswata Tapobrata | Chowdhury Sarkar | 2019 | 884:95 | 1 to 11 |
| Phys. Rev. D | New class of naked singularities and their observational signatures | Kaushik Dipanjan Arindam Tapobrata | Bhattacharya Dey Mazumdar Sarkar | 2020 | 101 | 043005-1 to 043005-19 |
| Journal of Cosmology and Astroparticle Physics | Strong gravitational lensing by wormholes | Rajibul Pritam Suvankar Tapobrata | Shaikh Banerjee Paul Sarkar | 2019 | 07(028) | 1 to 28 |
| Journal of Cosmology and Astroparticle Physics | Physics Title : Observational signatures of wormholes with thin accretion disks | Suvankar Rajibul Pritam Tapobrata | Paul Shaikh Banerjee Sarkar | 2020 | 03 | 1 to 21 |

Zakir Hossain

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|---------------------------|---|--|-----|--|------|-----|-----------|
| J. Appl. Phys. | Electrical resistivity under pressure and thermal expansion of LaPt ₂ Si ₂ single crystal | Ritu A. P. S. K. Zakir | P. | Gupta Thamizhavel Rodière Nandi Rajeev Hossain | 2019 | 125 | 143902 |
| Phys. Rev. B | Magnetotransport properties of the correlated topological nodal-line semimetal YbCdGe | Antu, Sudip Ratnadwip, Prabhat P. Zakir | V. | Laha Malick, Singha Mandal Rambabu Kanchana Hossain | 2019 | 99 | 241102(R) |
| J. Phys.: Condens. Matter | Ferromagnetic resonance studies of strain tuned Bi:YIG films | Ravinder Biswanath Zakir | | Kumar Samantaray Hossain | 2019 | 31 | 435802 |
| Phys. Rev. B | Electric field control of photoinduced effect in La _{0.7} Sr _{0.3} MnO ₃ /LaTiO ₃ /SrTiO ₃ heterostructure | Pramod Zakir | | Ghising Hossain | 2019 | 100 | 115119 |
| Phys. Rev. B | <u>Exchange bias and spin glass states driven by antisite disorder in the double perovskite compound LaSrCoFeO₆</u> | Rama Y Zakir | Ch. | Sahoo Takeuchi Hossain | 2019 | 100 | 214436 |
| Phys. Rev. B | <u>Spin inhomogeneities at the interface and inverted hysteresis loop in La 0.7 Sr 0.3 MnO 3/SrTiO 3</u> | Pramod Biswanath Zakir | | Ghising Samantaray Hossain | 2020 | 101 | 024408 |

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Gautam Sengupta

| | | | | | | |
|--------------------------------|---|---------------------------------|--------------------------------|------|--------------------------------------|----------|
| Journal of High Energy Physics | Time Evolution of Entanglement Negativity from Black Hole Interiors | Vinay Gautam Sayid | Malvimat Sengupta Mondal | 2019 | JHEP 05, 183 | 25 Pages |
| European Physical Journal | Covariant holographic entanglement negativity for disjoint intervals in AdS ₃ /CFT ₂ | Vinay Sayid Boudhayan Gautam | Malvimat Mondal Paul Sengupta | 2019 | <i>Eur.Phys.J.C</i> 79 (2019) 6, 514 | 17 Pages |
| Nuclear Physics B | Covariant holographic entanglement negativity for adjacent subsystems in AdS ₃ /CFT ₂ | Parul Vinay Sayid Gautam | Jain Malvimat Mondal Sengupta | 2019 | <i>Nucl.Phys.B</i> 945, 114683 | 18 pages |
| Physical Review D | Entanglement negativity in Galilean conformal field theories | Vinay Himanshu Boudhayan Gautam | Malvimat Parihar Paul Sengupta | 2019 | <i>Phys.Rev.D</i> 100,2, 026001 | 12 Pages |
| Physics Letters B | Holographic entanglement negativity conjecture for adjacent intervals in AdS ₃ /CFT ₂ | Parul Vinay Sayid Gautam | Jain Malvimat Mondal Sengupta | 2019 | <i>Phys.Lett.B</i> 793 | 104-109 |

Pankaj Jain

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|---------------------------|--|-------------------------------|------|---------------------------|------|-----|-------------|
| <i>Astrophys. J.Lett.</i> | <u>Identification of QPO frequency of GRS 1915+105 as the relativistic dynamic frequency of a truncated accretion disk</u> | Ranjeev Divya JS Pankaj | | Misra Rawat Yadav Jain | 2020 | 889 | L36 |
| <i>Astrophys.J.</i> | The galaxy power spectrum from TGSS ADR1 and the effect of flux calibration systematics | Prabhakar Shamik Pankaj | | Tiwari Ghosh Jain | | 887 | 175 |
| Phys.Rev.D | Effect of orbital eccentricity on the dynamics of precessing compact binaries | Khun Anuradha Sukanta Pankaj | Sang | Phokon Gupta Bose Jain | 2019 | 100 | 12, 124 008 |
| MNRAS | A Pixel Space Method for Testing Dipole Modulation in the CMB Polarization | Shamik Pankaj | | Ghosh Jain | 2020 | 492 | 3, 3994 |
| Phys.Rev.D | Cosmological Dark Matter in a Conformal Model | Prasenjit Alekha Gopal Pankaj | | Sanyal Nayak Kashyap Jain | 2019 | 100 | 11, 115 032 |

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| Experimental Astronomy | <u>Simulation of atmospheric pressure dependence on GRAPES-3 particle density</u> | M. Zuberi, S. Ahmad, M. Chakraborty, A. Chandra, S. R. Dugad, S. K. Gupta, B. Hariharan, Y. Hayashi, P. Jagadeesan, A. Jain, P. Jain, V. B. Jhansi, S. Kawakami, S. Mahapatra, P. K. Mohanty, S. D. Morris, P. K. Nayak, A. Oshima, D. Pattanaik, P. S. Rakshe, K. Ramesh, B. S. Rao, L. V. Reddy, F. Varsi | 2020 | 49 | 61–71 |
|------------------------|---|---|------|----|-------|

SA Ramakrishna

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|---|--|--|------|----|-------------|
| Journal of Nanophotonics | <u>Simple trilayer metamaterial absorber associated with Fano-like resonance</u> | Raghwendra Kumar S. Anantha Ramakrishna | 2020 | 14 | 016011 |
| IEEE Transactions on Components, Packaging and Manufacturing Technology | <u>Optically transparent protective coating for ITO-coated PET-based microwave metamaterial absorbers</u> | Kajal Chaudhary, Gaganpreet Singh, J Ramkumar, S Anantha Ramakrishna, Kumar Vaibhav Srivastava, Praveen C Ramamurthy | 2020 | 10 | 378-388 |
| IEEE Transactions on Antennas and Propagation | <u>Frequency Shifted Reflection of Electromagnetic Waves Using a Time-modulated Active Tunable Frequency Selective Surface</u> | M Saikia, KV Srivastava, SA Ramakrishna | 2019 | 68 | 2937 - 2944 |
| Pramana – journal of Physics | <u>Alcohol sensor based on gold-coated nanoporous anodic alumina membrane</u> | Saleem Shaik, Anjani K Tiwari, SA Ramakrishna | 2019 | 93 | 30 |
| Journal of Physics D: Applied Physics | <u>Fabrication of a non-wettable wearable textile-based metamaterial microwave absorber</u> | Gaganpreet Singh, Harsh Sheokand, Kajal Chaudhary, Kumar Vaibhav Srivastava, J Ramkumar, S Anantha Ramakrishna | 2019 | 52 | 385304 |
| Journal of Lightwave Technology | <u>Enhanced Coupling of Light From Subwavelength Sources Into a Hyperbolic Metamaterial Fiber</u> | Abhinav Bhardwaj, Kumar Vaibhav Srivastava, S Anantha Ramakrishna | 2019 | 37 | 3064-3072 |
| Journal of Manufacturing Processes | <u>Numerical simulation of melt pool oscillations and protuberance in pulsed laser micro melting of</u> | Shashank Sharma, Vijay Mandal, SA Ramakrishna, J Ramkumar | 2019 | 39 | 282-294 |

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| | <u>SS304 for surface texturing applications</u> | | | | |
| Physical Review Applied | <u>Silver Columnar Thin-Film-Based Half-Wavelength Antennas for Bright Directional Emission from Nanodiamond Nitrogen-Vacancy Centers</u> | Rajesh Kumar, Faraz A Inam, Anh Ly, Carlo Bradac, S Anantha Ramakrishna | 2019 | 11 | 034002 |

Anjan K Gupta

| | | | | | | |
|---------------------|---|--|---|------|-----|--------|
| J. Mag. Mag. Mater. | Probing magnetism of individual nano-structures using Nb-SQUIDs in hysteresis free mode | Sagar Ganesh Harsh Hervé Clemens Anjan K. | Paul Kotagiri Parashari Courtois Winkelmann Gupta | 2020 | 503 | 166625 |
| Phys. Rev. B | Elimination of thermal bistability in superconducting weak links by an inductive shunt | Sourav C. B. H. Thierry Hillool Anjan K. | Biswas Winkelmann Courtois Dauxois Biswas Gupta | 2020 | 101 | 024501 |

Soumik Mukhopadhyay

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|-----------------------|---|--------------|-------|----------------------|------|-----|---------|
| J. Appl. Phys. | Influence of electronic structure parameters on electrical transport and magnetic properties of $Y_{2-x}Bi_xIr_2O_7$ pyrochlore iridates | Vinod Soumik | Kumar | Dwivedi Mukhopadhyay | 2019 | 126 | 165112 |
| J. Appl. Phys. | Coexistence of high electrical conductivity and weak ferromagnetism in Cr doped $Y_2Ir_2O_7$ pyrochlore iridates | Vinod Soumik | Kumar | Dwivedi Mukhopadhyay | 2019 | 125 | 223901 |
| J. Magn. Magn. Mater. | Suppression of long-range magnetic ordering and electrical conduction in $Y_{1.7}Bi_{0.3}Ir_2O_7$ thin film | Vinod Soumik | Kumar | Dwivedi Mukhopadhyay | 2019 | 484 | 313-319 |
| Physica B | Evolution of structural, magnetic and electrical transport properties of $Y_{1.7}Bi_{0.3}Ir_2O_7$ thin film grown on YSZ (100) substrate by PLD | Vinod Soumik | Kumar | | 2019 | 571 | 137-141 |

Manas Khan

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| Phys. Rev. Lett. | Optical Tweezers Microrheology Maps the Dynamics of Strain-Induced Local Inhomogeneities in Entangled Polymers | Manas Kathryn Rae | M | Khan Regan Robertson Anderson | 2019 | 123 | 038001-1 to 6 |
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M K Verma

| | | | | | | | |
|--|--|--|--|--|------|----------|-----------|
| Transactions of the Indian National Academy of Engineering | COVID-19 Pandemic: Power Law Spread and Flattening of the Curve | Mahendra Kumar Verma, Ali Asad, and Soumyadeep Chatterjee | | | 2020 | 5 | 1 |
| Physics of Plasmas | Turbulent drag reduction in magnetohydrodynamic and quasi-static magnetohydrodynamic turbulence | Mahendra Kumar Verma, Shadab Alam, and Soumyadeep Chatterjee | | | 2020 | 27 | 052301 |
| Philosophical Transactions A | Boltzmann equation and Hydrodynamic equations: Their equilibrium and nonequilibrium behaviour | Mahendra Kumar Verma | | | 2020 | In press | |
| S. N. Computer Science | Challenges in fluid flow simulations using Exascale computing | Mahendra Kumar Verma, Roshan Samuel, Soumyadeep Chatterjee, Shashwat Bhattacharya, and Ali Asad | | | 2020 | 1 | 178 |
| Journal of Fluid Mechanics | Inverse cascade of energy in helical turbulence | Franck Plunian, Andrei Teimurazov, Rodion Stepanov, and Mahendra Kumar Verma | | | 2020 | 865 | A13 |
| Physical Review Fluids, | Modelling Ekman and quasi-static magnetohydrodynamic turbulence using Pao's hypothesis | Mohammad Anas, and Mahendra Kumar Verma | | | 2019 | 4 | 104611 |
| Physical Review E | Energy and enstrophy spectra and fluxes for the inertial-dissipation range of two-dimensional turbulence | Akanksha Gupta, Rohith Jayaram, Anando Gopal Chatterjee, Shubhadeep Sadhukhan, Ravi Samtaney, and Mahendra Kumar Verma | | | 2019 | 100 | 053101 |
| Physics of Fluids | Similarities between the structure functions of thermal convection and hydrodynamic turbulence | Shashwat Bhattacharya, Shubhadeep Sadhukhan, Anirban Guha, and Mahendra Kumar Verma | | | 2019 | 31 | 115107 |
| J. Plasma Phys. | On uniqueness of transfer rates in magnetohydrodynamic turbulence | Franck Plunian, Rodion Stepanov, and Mahendra Kumar Verma | | | 2019 | 85 | 905850507 |
| Int. Commun. Heat Mass Transfer | Transient flows and reorientations of large-scale convection in a cubic cell | Andrei Vasilev, Peter Frick, Abhishek Kumar, Rodion Stepanov, Andrei Sukhanovskii, and Mahendra Kumar Verma | | | 2019 | 108 | 104319 |
| European Physical Journal B | Asymmetric energy transfers in driven nonequilibrium systems and arrow of time | Mahendra Kumar Verma | | | 2019 | 90 | 190 |

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| Physics of Fluids | Anisotropic energy transfers in rapidly rotating turbulence | Manohar Kumar Sharma, Mahendra Kumar Verma, and Sagar Chakraborty | 2019 | 31 | 085117 |
| Physical Review Fluids | Enstrophy transfers in helical turbulence | Shubhadeep Sadhukhan, Roshan Samuel, Franck Plunian, Rodion Stepanov, Ravi Samtaney, and Mahendra Kumar Verma | 2019 | 4 | 084607 |
| Physica Scripta | Turbulence in a stably stratified fluid: Onset of global anisotropy as a function of the Richardson number | Jayanta Kumar Bhattacharjee, Abhishek Kumar, and Mahendra Kumar Verma | 2019 | 94 | 125008 |
| Physics of Fluids | On heat transport and energy partition in thermal convection with mixed boundary conditions | Yada Nandukumar, Suman Chakraborty, Mahendra Kumar Verma, and Rajaram Lakkaraju | 2019 | 31 | 066601 |
| Journal of Fluid Mechanics | Revisiting Bolgiano-Obukhov scaling for moderately stably stratified turbulence | Shadab Alam, Anirban Guha, and Mahendra Kumar Verma | 2019 | 875 | 961 |
| Physics of Fluids | Scaling and spatial intermittency of thermal dissipation in turbulent convection | Shashwat Bhattacharya, Ravi Samtaney, and Mahendra Kumar Verma | 2019 | 31 | 075104 |
| Physica Scripta | Contrasting turbulence in stably stratified flows and thermal convection | Mahendra Kumar Verma | 2019 | 94 | 064003 |
| Physics of Fluids | Large eddy simulation of hydrodynamic turbulence using renormalized viscosity | Sumit Vashishtha, Roshan Samuel, Anando Gopal Chatterjee, Ravi Samtaney, and Mahendra Kumar Verma | 2019 | 31 | 065102 |

Chanchal Sow

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|------------------|--|---|---|------|-----|--------|
| PNAS | Momentum-resolved superconducting energy gaps of Sr_2RuO_4 from quasiparticle interference imaging | R. SD Z. A C | Sharma Edkins Wang Kostin Sow | 2020 | 117 | 5222 |
| <i>Sci. Rep.</i> | Anomalous anisotropic behaviour of spin-triplet proximity effect in $\text{Au}/\text{SrRuO}_3/\text{Sr}_2\text{RuO}_4$ junctions | MS M R SR C JWA S. TW Y | Anwar Kunieda Ishiguro Lee Sow Robinson Yoneazawa Noh Maeno | 2019 | 9 | 15827 |
| Phys. Rev. B | Strong spin-phonon coupling unveiled by coherent phonon oscillations in Ca_2RuO_4 | M-C. CH. I CW C F | Lee Kim Kwak Seo Sohn Nakamura | 2019 | 99 | 144306 |

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| | | C. Y EA TW KW | Sow Maeno Kim Noh Kim | | | |
| <i>Phys. Rev. X</i> | Nano-Resolved Current-Induced Insulator-Metal Transition in the Mott Insulator Ca_2RuO_4 , | J. Zhang, AS. McLeod, Q. Han, X. Chen, HA. Bechtel, Z. Yao, SNG. Corder, T. Ciavatti, TH. Tao, M. Aronson, GL. Carr, MC. Martin, C. Sow , S. Yonezawa, F. Nakamura, I. Terasaki, DN. Basov, AJ. Millis, Y. Maeno and M. Liu. | | 2019 | 9 | 011032 |

Amit Agarwal

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|-------------------------------|---|--|--|------|------|-------------|
| Advanced functional materials | Transition-metal dichalcogenide NiTe_2 : an ambient-stable material for catalysis and nano- electronics | S. Nappini and A Agarwal | | 2020 | | 2000915 |
| <i>Phys. Rev. Lett.</i> | Novel Undamped Gapless Plasmon Mode in a Tilted Type-II Dirac Semimetal | K. Sadhukhan, A. Politano, A. Agarwal | | 2020 | 124 | 046803 |
| <i>Phys. Rev. Research</i> | Thermal and gravitational chiral anomaly induced magneto-transport in Weyl semimet- als | K. Das and A. Agarwal | | 2020 | 2 | 013088 |
| <i>Phys. Rev. B</i> | Saddle-point Van Hove singularity and dual topological state in Pt_2HgSe_3 | B. Ghosh, S. Mardanya, B. Singh, X. Zhou, B. Wang, T.-R. Chang, C. Su, H. Lin, A. Agarwal, and A. Bansil | | 2019 | 100, | 235101 |
| <i>Phys. Rev. B</i> | Observation of bulk states and spin-polarized topological surface states in transition metal dichalcogenide Dirac semimetal candidate NiTe_2 | B. Ghosh, D. Mondal, C.-N. Kuo, C. S. Lue, J. Nayak, J. Fujii, I. Vobornik, A. Politano, and A. Agarwal | | 2019 | 100, | 195134 |
| <i>Phys. Rev. B</i> | Topological crystalline insulator state with type-II Dirac fermions in transition metal dipnictides | W.-C. Chiu, M. M. Hosen, Q. Zhang, Li Ying, M. Neupane, A. Agarwal, H. Lin, and A. Bansil | | 2019 | 100 | 205118 |
| <i>Phys. Rev. B</i> | Giant optical activity and Kerr effect in type-I and type-II Weyl semimet- als, | K. Sonowal, A. Singh and A. Agarwal | | 2019 | 100 | 100, 085436 |
| <i>Phys. Rev. B</i> | Berry curvature induced thermopower in type-I and type-II Weyl semimetals | K. Das and A. Agarwal | | 2019 | 100 | 085406 |

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| Phys. Rev. Materials | Prediction of three-fold fermions in a nearly-ideal Dirac semimetal BaAgAs | S. Mardanya, B. Singh, S.-M. Huang, T.-R. Chang, C. Su, H. Lin, A. Agarwal, and A. Bansil | | 2019 | 3 | 071201R |
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Kaushik Bhattacharya

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|--|--|--|--|------|-----|--------|
| Journal of Cosmology and Astroparticle Physics | Evolution of scalar and vector cosmological perturbations through a bounce in metric $f(R)$ gravity in flat FLRW spacetime | Kaushik Bhattacharya, Pritha Bari | | 2019 | 11 | 19 |
| Physical Review D | New class of naked singularities and their observational signatures | Kaushik Bhattacharya, Dipanjan Dey, Arindam Mazumdar, Tapobrata Sarkar | | 2020 | 101 | 043005 |

KP Rajeev

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|----------------------------|---|-------------------------------|---|---|------|-----|----------------------------|
| Journal of Applied Physics | Electrical resistivity under pressure and thermal expansion of LaPt ₂ Si ₂ single crystal | Ritu A P S K Z | P | Gupta Thamizhavel Rodiere Nandi Rajeev Hossain | 2019 | 125 | 143902 (Article number) |
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Joydeep Chakraborty

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|-------------------|--|----------------------------|-------------------------|------|--------|--------|
| Eur.Phys.J.C | FCC Physics Opportunities : Future Circular Collider Conceptual Design Report Volume 1 | FCC | Collaboration | 2019 | 79, 6 | 474 |
| Eur.Phys.J.ST | HE-LHC: The High-Energy Large Hadron Collider : Future Circular Collider Conceptual Design Report Volume 4 | FCC | Collaboration | 2109 | 228, 5 | 1109 |
| Eur.Phys.J.ST | FCC-hh: The Hadron Collider : Future Circular Collider Conceptual Design Report Volume 3 | FCC | Collaboration | 2019 | 228, 4 | 755 |
| Eur.Phys.J.ST | FCC-ee: The Lepton Collider : Future Circular Collider Conceptual Design Report Volume 2 | FCC | Collaboration | 2019 | 228, 2 | 261 |
| Physical Review D | Unification, Proton Decay and Topological Defects in non-SUSY GUTs with Thresholds | Joydeep, Rinku, Stephen F. | Chakraborty, Maji, King | 2019 | 99, 9 | 095008 |

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| Journal of High Energy Physics | Hilbert Series and Plethystics: Paving the path towards 2HDM- and MLRSM-EFT | Anisha, Supratim, Joydeep, Suraj | Anisha, Das Bakshi, Chakraborty, Prakash | 2019 | 1909 | 035 |
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Supratik Banerjee

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| The Astrophysical Journal | On Exact Laws in Incompressible Hall Magnetohydrodynamic Turbulence | Renaud Sebastien Fouad Romain Nahuel Supratik | Ferrand Galtier Sahraoui Meyrand Andres Banerjee | 2019 | 881 | 50 (1-6) |
| Physical Review E | Determination of energy flux rate in homogeneous ferrohydrodynamic turbulence using two-point statistics | Sukhdev Supratik | Mouraya Banerjee | 2019 | 100 | 053105 (1-6) |

JS Yadav

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| The Astrophysical Journal Letters | Identification of QPO Frequency of GRS 1915+105 as the Relativistic Dynamic Frequency of a Truncated Accretion Disk | Ranjeev Misra, Divya Rawat, J. S. Yadav, Pankaj Jain | | 2020 | 889L | 36-42 |
| The Astrophysical Journal Letters | Unveiling the Temporal Properties of MAXI J1820+070 through AstroSat Observations | Sneha Prakash Mudambi, Bari Maqbool, Ranjeev Misra, Sobhya Hebbar, J. S. Yadav, Shivappa B. Gudennavar, S. G. Bubby | | 2020 | 889L | 17-20 |
| Monthly Notices of the Royal Astronomical Society | Unravelling the unusually curved X-ray spectrum of RGB J0710 + 591 using AstroSat observations | Pranjupriya Goswami, Atreyee Sinha, Sunil Chandra, Ranjeev Misra, Varsha Chitnis, Rupjyoti Gogoi, Sunder Sahayanathan, C. S. Stalin, K. P. Singh and J. S. Yadav | | 2020 | 492 | 796-803 |
| Monthly Notices of the Royal Astronomical Society | A variable-frequency HFQPO in GRS 1915+105 as observed with AstroSat | Tomaso M. Belloni, Dipankar Bhattacharya, Pietro Caccese, Verun Bhalerao, Santosh Vadawale, J. S. Yadav | | 2019 | 489 | 1037-1043 |
| Research in Astronomy and Astrophysics | AstroSat observation of GX 5-1: spectral and timing evolution | Yashpal Bhulla, Ranjeev Misra, J. S. Yadav, S. N. A. Jaaffrey | | 2019 | 19 | 114-125 |

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| Monthly Notices of the Royal Astronomical Society | A stochastic propagation model to the energy dependent rapid temporal behaviour of Cygnus X-1 as observed by AstroSat in the hard state | Bari Maqbool, Sneha Prakash Mudambi, R. Misra, J. S. Yadav, S. B. Gudennavar, S. G. Bubbly, A. Rao, S. Jogadand, M. K. Patil, S. Bhattacharyya, K. P. Singh | 2019 | 486 | 2964-2975 |
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Asima Pradhan

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| Biomedical Physics & Engineering Express | Two dimensional multifractal detrended fluctuation analysis of low coherence images for diagnosis of cervical precancer | Gyana Rajib Nandan Nirmalya Asima | Ranjan | Sahoo Dey Das Ghosh Pradhan | 2020 | 6 | 025011 |
| Sensors and Actuators B: Chemical | MWCNT and α -Fe ₂ O ₃ embedded rGO-nanosheets based hybrid structures for room temperature chloroform detection using fast response/ recover cantilever based sensors | Aviru Amar Mayank Prabhat Asima Shantanu | Kumar Nath Manjul K | Basu Sah Dubey Dwivedi Pradhan Bhattacharya | 2020 | 305 | 127457 |
| Applied Optics | Assessment of anisotropy of collagen structures through spatial frequencies of Muller matrix images for cervical precancer detection | Mohammad Asima | | Zafar Pradhan | 2020 | 59 | 1237-1248 |
| Lasers in Medical Science | In vivo detection of oral precancer using a fluorescence based, in-house fabricated device: a Mahalanobis distance-based classification | Pavan Surendra Asutosh Asima | Kumar | Kumar Kanaujia Singh Pradhan | 2019 | 34 | 1243-1251 |
| Applied Optics | Comparative study of one-step and two-step quantitative fluorescence photo-acoustic tomography | Prabodh Omprakash Naren Asima | Kumar | Pandey Gottam Naik Pradhan | 2019 | 58 | 3116-3127 |

Arijit Kundu

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| Journal of Applied Physics | RKKY interaction in Mn-doped 4×4 Luttinger systems | Sonu Arijit Tarun Kanti | Verma Kundu Ghosh | 2019 | 125 | 233903-1-8 |
| Physical Review B (Rapid Communication) | Quantized large-bias current in the anomalous Floquet-Anderson insulator | Arijit Mark Erez Netanel | Kundu Rudner Berg Lindner | 2020 | 101 | 041403-1-6 |
| Physical Review B | RKKY coupling in Weyl semimetal thin films | Sonu Debasmita Herb Arijit | Verma Giri Fertig Kundu | 2020 | 101 | 085419-1-12 |

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Sudeep Bhattacharjee

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| AIP Advances | Steady state densities in a plasma confined by a dipole magnet: Diffusion induced transport explored through direct measurements and modelling | Anuj Ayesha Sargam Sudeep | Ram | Baitha Nanda Hunjan Bhattacharjee | 2020 | 10 | 045328-1 to 13 |
| Plasma Research Express | Particle balance in a steady state plasma in a dipole magnetic field | Anuj Ayesha Sargam Sudeep | Ram | Baitha Nanda Hunjan Bhattacharjee | 2019 | 1 | 045005-1 to 12 |
| Physics of Plasmas | Effect of plasma and beam parameters on focal dimensions in micrometer charged particle optics: enhanced nonlinear demagnification below the Debye length | Sanjeev Sushanta Nandita Sudeep | Kumar | Maurya Barman Pan Bhattacharjee | 2019 | 26 | 063103-1 to 15 |

Krishnacharya

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| Langmuir | Mobility of Aqueous and Binary Mixture Drops on Lubricating Fluid-Coated Slippery Surfaces | Meenaxi, Pritam, Jitesh, Krishnacharya | Kumar | Sharma, Roy, Barman | 2019 | 35 | 7672–7679 |
| Applied Physics A | Mechanically tunable single-component soft polydimethylsiloxane (PDMS)-based robust and sticky superhydrophobic surfaces | Pritam, Sanjeev, Sneha, Sumana, Reeta, Krishnacharya | Kumar , Kumar , | Roy, Ujjain, Dattatreya, Kumar, Pant | 2019 | 125 | 535 (1-10) |
| Journal of Colloid and Interface Science | Evaporation dynamics of pure and binary mixture drops on dry and lubricant coated slippery surfaces | Meenaxi, Samrat, Pritam, krishnacharya | Sohel, Kumar | Sharma, Mondal, Roy | 2020 | 569 | 244-253 |

Saurabh Mani Tripathi

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| Journal of Non-Crystalline Solids | <i>Chalcogenide glass microstructured optical fiber as a potential candidate for slow-light generation via stimulated Brillouin scattering</i> | D.K. Sharma, <u>S.M. Tripathi</u> | | | 2020 | 542 | 120114 |
| IEEE Sensors Journal | <i>Single-Multi-Single Mode Fiber Optic Structure Based Water Depth Sensor</i> | Garima Bawa, Krishnendu Dandapat, Gyanendra Kumar, Indrajeet Kumar, and <u>S.M. Tripathi</u> | | | 2019 | 19 | 6756 – 6762 |

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| Materials Chemistry and Physics | <i>Synopsis on optical attributes of chalcogenide glass solid-core hexagonal microstructured optical fibers in infrared regime</i> | D.K. Sharma and <u>S.M. Tripathi</u> | 2019 | 243 | 122632 |
| Optical Fiber Technology | <i>Splicing of silica-based MOF and standard SMF: Loss evaluation using an enhanced field model</i> | D.K. Sharma and <u>S.M. Tripathi</u> | 2019 | 53 | 102030 |
| Physica B: Condensed Matter | <i>Theoretical analysis for exploring the optical performance of solid-core polymer based microstructured optical fibers</i> | D.K. Sharma and <u>S.M. Tripathi</u> | 2019 | 572 | 279-290 |
| Optical and Quantum Electronics | <i>Implications of theoretical analysis to explore the functional core dimension in one-rod core microstructured optical fibers</i> | D.K. Sharma and <u>S.M. Tripathi</u> | 2019 | 51 | 318 |
| Sensing and Bio-Sensing Research | <i>Gold coated dual-resonance long-period fiber gratings (DR-LPFG) based aptasensor for cyanobacterial toxin detection</i> | <u>S.M. Tripathi</u> , K. Dandapat, W.J. Bock, P. Mikulic, J. Perreault, and B. Sellamuthu | 2019 | 25 | 100289 |
| Opto-Electronics Review | <i>Analysis of the beam divergence for one-rod core microstructured optical fibers</i> | D.K. Sharma and <u>S.M. Tripathi</u> | 2019 | 27 | 224-231 |
| Optical Materials | <i>Optical performance of tellurite glass microstructured optical fiber for slow-light generation assisted by stimulated Brillouin scattering</i> | D.K. Sharma and <u>S.M. Tripathi</u> | 2019 | 94 | 196-205 |
| <i>Journal of Non-Crystalline Solids</i> | <i>Modal analysis of high-index core tellurite glass microstructured optical fibers in infrared regime</i> | D.K. Sharma, <u>S.M. Tripathi</u> and A. Sharma | 2019 | 511 | 147-160 |
| <i>Optics and Laser Technology</i> | <i>Optimum splicing of high-index core microstructured optical fibers and traditional single-mode fibers using improved field model</i> | D. K. Sharma, A. Sharma, and <u>S.M. Tripathi</u> | 2019 | 109 | 157-167 |

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Jayita Nayak

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|--------------------|--|---|--|--|------|-----|---------|
| Advanced Materials | Signatures of six-fold degenerate exotic fermions in a superconducting metal PdSb ₂ | <u>Nitesh Mengyu</u> <u>Jayita Maia</u> , <u>Jörn Zhijun</u> <u>Niels Vladimir</u> <u>Lukas Wujun</u> <u>Emile J.</u> <u>Chandra Stuart Jörg</u> <u>Gerhard Yan</u> <u>Andrei</u> <u>Claudia</u> | G. B.M. N. D. L. L. S. P. H. B. | Kumar* Yao* Nayak* Vergniory Bannies Wang Schröter Strocov Müchler Shi Rienks Mañes Shekhar Parkin Fink Fecher Sun Bernevig Felser | 2020 | 32 | 1906046 |
| Phys. Rev. B | Evidence of hot and cold spots on the Fermi surface of LiFeAs | J. J. E. J. S. S. I. R. M. L. H. C. B | D. L. A. | Fink Nayak Rienks Bannies Wurmehl Aswartham Morozov Kappenberger ElGhazali Craco Rosner Felser Büchner | 2019 | 99 | 245156 |
| Phys. Rev. B | Low-energy type-II Dirac fermions and spin-polarized topological surface states in transition-metal dichalcogenide NiTe ₂ | <u>Barun Debashis</u> <u>Chia-Nung</u> <u>Chin Jayita</u> <u>Jun</u> <u>Ivana</u> <u>Antonio</u> <u>Amit</u> | Shan | Ghosh Mondal Kuo Lue Nayak Fujii Vobornik Politano Agarwal | 2019 | 100 | 195134 |
| Phys. Rev. B | Anomalous Hall effect and the role of Berry curvature in Co ₂ TiSn Heusler films | Benedikt Roshnee, Yan Jayita Lukas Ajaya Nitesh Jacob Anastasios Gerhard Claudia | K H.. | Ernst Sahoo Sun Nayak Müchler Nayak Kumar Gayles Markou Fecher Felser | 2019 | 100 | 054445 |

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Satyajit Banerjee

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| Phys. Rev. B | Imaging the effect of drive on the low-field vortex melting phenomenon in Ba _{0.6} K _{0.4} Fe ₂ As ₂ single crystal | Ankit Kumar, Amit Jash, Tsuyoshi Tamegai, S. S. Banerjee* | 2020 | 101 | 184516 |
| Journal of Applied Physics | Localized spin waves at low temperatures in a Cobalt Carbide nanocomposite | Nirmal Roy, Arpita Sen, Prasenjit Sen, S. S. Banerjee* | 2020 | 127 | 124301 |
| Phys. Rev. B | Coupling-decoupling of conducting topological surface states in thick Bi ₂ Se ₃ single crystals | Amit Jash, Sayantan Ghosh, A. Bharathi, and S. S. Banerjee* | 2020 | 101 | 165119 |
| Phys. Rev. B | Low-field vortex melting in a single crystal of Ba _{0.6} K _{0.4} Fe ₂ As ₂ | Ankit Kumar, Sayantan Ghosh, Tsuyoshi Tamegai, and S. S. Banerjee* | 2020 | 101 | 14502 |
| Phys. Rev. Applied | A non-contact mutual inductance based measurement of an inhomogeneous topological insulating state in Bi ₂ Se ₃ single crystals with defects | Amit Jash, Kamalika Nath, T. R. Devidas, A. Bharathi, S. S. Banerjee* | 2019 | 12 | 14056 |
| Journal of Magnetism and Magnetic Materials | Flipping anisotropy and changing magnetization reversal modes in nano-confined Cobalt structures | Kamalika Nath, Jaivardhan Sinha, S.S Banerjee* | 2019 | 476 | 412-416 |

Sagar Chakraborty

| | | | | | | | |
|---|--|------------------------------|-------------|----------------------------------|------|---------------------------|---------------|
| Journal of Statistical Mechanics: Theory and Experiment | Re-examining Einstein's B coefficient and rate equations with the Rabi model | Najirul Tanmoy Sagar Shyamal | | Islam Mondal Chakraborty Biswas | 2019 | No volume number assigned | 113104 (1-22) |
| Physics of Fluids | Anisotropic energy transfers in rapidly rotating turbulence | Manohar Mahendra Sagar | Kumar Kumar | Sharma Verma Chakraborty | 2019 | 31 | 085117 (1-12) |
| Physica D | Understanding order-chaos-order in the planar elastic pendulum | Anurag Basudeb Jayanta Sagar | Kumar | Mondal Bhattacharjee Chakraborty | 2020 | 402 | 132256 (1-14) |

Avinash Singh

| | | | | | | | |
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| Phys. Rev. B | Octahedral Tilting Induced Isospin Reorientation Transition in Iridate Heterostructures | Shubhajyoti Sreemayee Rohit Avinash | | Mohapatra Aditya Mukherjee Singh | 2019 | 100 | 140409(R) |
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Arjun Bagchi

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| Journal of High Energy Physics | Field Theories with Conformal Carrollian Symmetry | Arjun Bagchi, Aditya Mehra, Poulami Nandi. | 2019 | 05 (2019) | 108 |
| Journal of High Energy Physics | BMS Characters and Modular Invariance | Arjun Bagchi, Amartya Saha, Zodinmawia. | 2019 | 07 (2019) | 138 |
| Physical Review Letters | The Tensionless Path from Closed to Open Strings | Arjun Bagchi, Aritra Banerjee, Pulastya Parekh. | 2019 | 123 (2019) 11 | 111601 |
| Journal of High Energy Physics | Field Theories on Null Manifolds | Arjun Bagchi, Rudranil Basu, Aditya Mehra, Poulami Nandi. | 2020 | 02 (2020) | 141 |
| Physics Letters B | Exotic Origins of Tensionless Superstrings | Arjun Bagchi, Aritra Banerjee, Shankhadeep Chakraborty, Pulastya Parekh. | 2020 | 801 | 135139 |
| Journal of High Energy Physics | A tale of three: tensionless strings and vacuum structure | Arjun Bagchi, Aritra Banerjee, Shankhadeep Chakraborty, Sudipta Dutta, Pulastya Parekh. | 2020 | 04 (2020) | 061 |

Debtosh Chowdhury

| | | | | | | | |
|--|---|---|--------------|---|------|-----|-----------------|
| Journal of Cosmology and Astroparticle Physics | Dark matter seeping through dynamic gauge kinetic mixing | Avik Gautam Debtosh Yann | | Banerjee Bhattacharyya Chowdhury Mambrini | 2019 | 12 | 009 (1 – 14) |
| Journal of High Energy Physics | BPS solutions for generalised Wess-Zumino models and their applications | Steven Quentin Debtosh | | Abel Bonney Chowdhury | 2019 | 10 | 242 (1 – 15) |
| Physical Review D | Forays into the dark side of the swamp | Iason Debtosh Michel | H. G. | Baldes Chowdhury Tytgat | 2019 | 100 | 095009 (1 – 13) |
| The European Physical Journal C | HEPfit: a code for the combination of indirect and direct constraints on high energy physics models | Jorge Debtosh Marco Antonio Otto Marco Enrico Giovanni Victor Satoshi Ayan Ana Maurizio Laura Luca Mauro Ryoutaro Norimi | de M. | Blas Chowdhury Ciuchini Coutinho Eberhardt Fedele Franco Grilli di Cortona Miralles Mishima Paul Peñuelas Pierini Reina Silvestrini Valli Watanabe Yokozaki | 2020 | 80 | 456 (1 – 31) |

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Anand Kumar Jha

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|-------------------|---|--|------|----|--------|
| JOSA B | Intrinsic degree of coherence of classical and quantum states | Abu-Saleh Musa Patoary, Girish Kulkarni, and Anand Kumar Jha | 2019 | 36 | 2765 |
| Journal of Optics | Generation of a Gaussian Schell-model field as a mixture of its coherent modes | Abhinandan Bhattacharjee, Rishabh Sahu, and Anand Kumar Jha | 2019 | 21 | 105601 |
| JOSA B | Intrinsic degree of coherence of two-qubit states and measures of two-particle quantum correlations | Nilakantha Meher, Abu-Saleh Musa Patoary, Girish Kulkarni, and Anand Kumar Jha | 2020 | 37 | 1224 |

YN Mohapatra

TIPS-pentacene based MIS structure using a polymer insulator: role of interface traps studied using HMDS treatment, frequency and light intensity, S Singh, **YN Mohapatra** - Physica Scripta, 2020 - iopscience.iop.org