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**Monthly Bulletin of Publications:
Faculty, Scientists and Students of IISER Pune.
MAY 2022**

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BIOLOGY

Author(s) DAVE, BRUHAD; KANYAL, ABHISHEK; MAMATHARANI, D. V.; KARMODIYA, KRISHANPAL
Title Pervasive sequence-level variation in the transcriptome of Plasmodium falciparum
Citation NAR Genomics and Bioinformatics, 4(2), lqac036.
Publisher Oxford University Press
URI <https://doi.org/10.1093/nargab/lqac036>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7002>
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Author(s) Garg, Tushar; VARAPPARAMBATHU, VIJINA; PRASAD, KALIKA et. al.
Title Species-specific function of conserved regulators in orchestrating rice root architecture
Citation Development, 149(9).
Publisher The Company of Biologists
URI <https://doi.org/10.1242/dev.200381>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7011>
Date of Publication 2022-05

Author(s) KALE, TANVI; CHITNIS, SHIVAM S.; ATHALE, CHAITANYA A.
Title Scaling of Cell Growth and Macromolecules
Citation Resonance, 27(3), 325-337.
Publisher Indian Academy of Sciences
URI <https://doi.org/10.1007/s12045-022-1324-3>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7000>
Date of Publication 2022-03

Author(s) KHATRI, DHRUV; Brugiere, Thibault; ATHALE, CHAITANYA A.; Delattre, Marie
Title Evolutionary divergence of anaphase spindle mechanics in nematode embryos constrained by antagonistic pulling and viscous forces
Citation Molecular Biology of the Cell, 33(6).
Publisher American Society for Cell Biology
URI <https://doi.org/10.1091/mbc.E21-10-0532>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6999>
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Author(s) SAHARAN, OJAL; MEHENDELE, NEELAY; KAMAT, SIDDHESH S.

Title Phagocytosis: A (Sphingo) Lipid Story

Citation Current Research in Chemical Biology, 2, 100030.

Publisher Elsevier B.V.

URI <https://doi.org/10.1016/j.crchbi.2022.100030>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6974>

Date of Publication 2022-05

Author(s) SHAIKH, MAROOF; Bahulikar, Rahul; Chitnis, Akhilesh; PANDIT, SAGAR

Title GA₃-mediated reforestation pioneering mechanism of actinorhizal *Elaeagnus conferta* Roxb. in the slashed and burnt shifting cultivation lands in India's megadiversity hotspot

Citation Restoration Ecology.

Publisher Wiley

URI <https://doi.org/10.1111/rec.13705>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7005>

Date of Publication 2022-04

Author(s) TENDULKAR, SHWETA; HEGDE, SUSHMITHA; GARG, LOVLEEN; THULASIDHARAN, APARNA; KADUSKAR, BHAGYASHREE; Ratnaparkhi, Anuradha; RATNAPARKHI, GIRISH S.

Title Caspar, an adapter for VAPB and TER94, modulates the progression of ALS8 by regulating IMD/NF κ B-mediated glial inflammation in a *Drosophila* model of human disease

Citation Human Molecular Genetics.

Publisher Oxford University Press

URI <https://doi.org/10.1093/hmg/ddac076>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6981>

Date of Publication 2022-04

Author(s) THUKRAL, SAMEER; Kaity, Bivash; MITRA, DEBASMITA; DEY, BIPASHA; Dey, Pampa; UTTEKAR, BHAVIN; Mitra, Mithun K.; Nandi, Amitabha; RIKHY, RICHA

Title Pseudocleavage furrows restrict plasma membrane-associated PH domain in syncytial *Drosophila* embryos

Citation Biophysical Journal.

Publisher Elsevier B.V.

URI <https://doi.org/10.1016/j.bpj.2022.05.015>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6990>

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CHEMISTRY

Author(s) MONDAL, BARNALI; POOVATHAN, ATHUNYA; SHEIKH, TARIQ; NAG, ANGSUMAN
Title Yb³⁺-Doped Phenylethylammonium Lead Bromide 2D Layered Hybrid Perovskite for Near-Infrared Emission
Citation ChemNanoMat.
Publisher Wiley
URI <https://doi.org/10.1002/cnma.202200104>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6983>
Date of Publication 2022-04

Author(s) PUNIA, BHAWAKSHI; CHAUDHURY, SRABANTI
Title Influence of Nonspecific Interactions between Proteins and In Vivo Cytoplasmic Crowders in Facilitated Diffusion of Proteins: Theoretical Insights
Citation Journal of Physical Chemistry B, 126(16), 3037-3047.
Publisher American Chemical Society
URI <https://doi.org/10.1021/acs.jpccb.2c01021>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7003>
Date of Publication 2022-04

Author(s) SINGH, DIVYA; CHAUDHURY, SRABANTI
Title A single-molecule stochastic theory of protein-ligand binding in the presence of multiple unfolding/folding and ligand binding pathways
Citation Biophysical Chemistry, 285, 106803.
Publisher Elsevier B.V.
URI <https://doi.org/10.1016/j.bpc.2022.106803>
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Author(s) DESWAL, SWATI; PANDAY, RISHUKUMAR; Naphade, Dipti R.; Dixit, Prashant; Praveenkumar, Balu; Zareba, Jan K.; Anthopoulos, Thomas D.; OGALE, SATISHCHANDRA; BOOMISHANKAR, RAMAMOORTHY

Title Efficient Piezoelectric Energy Harvesting from a Discrete Hybrid Bismuth Bromide Ferroelectric Templated by Phosphonium Cation

Citation Chemistry-A European Journal.

Publisher Wiley

URI <https://doi.org/10.1002/chem.202200751>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6801>

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EARTH AND CLIMATE SCIENCE

Author(s) LAHA, SOURAV; Winter-Billington, Alex; BANERJEE, ARGHA; Shankar, R.; Nainwal, H. C.; Koppes, Michele

Title Estimation of ice ablation on a debris-covered glacier from vertical debris-temperature profiles

Citation Journal of Glaciology.

Publisher Cambridge University Press

URI <https://doi.org/10.1017/jog.2022.35>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7010>

Date of Publication 2022-05

Author(s) Dutta, Saurav; CHATTOPADHYAY, DEVAPRIYA

Title Response of the Oligo-Miocene Bivalve fauna of the Kutch Basin (Western India) to regional tectonic events

Citation Palaios, 37(3), 73-87.

Publisher Society for Sedimentary Geology

URI <https://doi.org/10.2110/palo.2020.040>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6979>

Date of Publication 2022-03

Author(s) Lone, Aasif Mohmad; Singh, Satinder Pal; Shah, Rayees Ahmad; Achyuthan, Hema; Ahmad, Nafees; Qasim, Abul; TRIPATHY, GYANA RANJAN; SAMANTA, ANUPAM; Kumar, Pankaj

Title The late Holocene hydroclimate variability in the Northwest Himalaya: Sedimentary clues from the Wular Lake, Kashmir Valley

Citation Journal of Asian Earth Sciences, 229, 105184.

Publisher Elsevier B.V.

URI <https://doi.org/10.1016/j.jseaes.2022.105184>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6651>

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MATHEMATICS

Author(s) ARVIND, NAMRATA; PANJA, SAIKAT
Title On $Z_n \rtimes Z_2$ -Hopf-Galois structures
Citation Journal of Algebra, 596, 37-52.
Publisher Elsevier B.V.
URI <https://doi.org/10.1016/j.jalgebra.2021.12.035>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7009>
Date of Publication 2022-04

Author(s) Berchio, Elvise; Ganguly, Debdip; ROYCHOWDHURY, PRASUN
Title Hardy-Rellich and second order Poincaré identities on the hyperbolic space via Bessel pairs
Citation Calculus of Variations and Partial Differential Equations, 61, 130.
Publisher Springer Nature
URI <https://doi.org/10.1007/s00526-022-02232-5>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6988>
Date of Publication 2022-05

Author(s) Bhattacharyya, Tirthankar; Kumar, Poornendu; SAU, HARIPADA
Title Distinguished varieties through the Berger-Coburn-Lebow theorem
Citation Analysis & PDE, 15(2), 477-506.
Publisher Mathematical Sciences Publishers
URI <https://doi.org/10.2140/apde.2022.15.477>
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Date of Publication 2022-04

Author(s) BISWAS, ANUP; Hoang-Hung Vo
Title Harnack inequality and principal eigentheory for general infinity Laplacian operators with gradient in R^N and applications
Citation Calculus of Variations and Partial Differential Equations, 61(4), 122.
Publisher Springer Nature
URI <https://doi.org/10.1007/s00526-022-02227-2>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6987>
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Author(s) Biswas, Indranil; DASGUPTA, JYOTI; Hanumanthu, Krishna; Khan, Bivas
Title Seshadri constants on Bott towers
Citation Journal of Algebra, 601, 178-197.
Publisher Elsevier B.V.
URI <https://doi.org/10.1016/j.jalgebra.2022.03.003>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7004>
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Author(s) Jun, Jaiung; RAY, SAMARPITA; Tolliver, Jeffrey
Title Lattices, spectral spaces, and closure operations on idempotent semirings
Citation Journal of Algebra, 594, 313-363.
Publisher Elsevier B.V.
URI <https://doi.org/10.1016/j.jalgebra.2021.12.007>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6986>
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PHYSICS

Author(s) BHAT, BHAGYASHRI DEVARU
Title Dielectric-dependent hybrid functional calculations on the electronic band gap of 3d transition metal doped SnS₂ and their optical properties
Citation Physical Review B, 105(19), 19520.
Publisher American Physical Society
URI <https://doi.org/10.1103/PhysRevB.105.195205>
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Date of Publication 2022-05

Author(s) BHATTACHARJEE, ARINDAM; Neetu
Title Matrix model with 3D BMS constraints
Citation Physical Review D, 105(6), 066012.
Publisher American Physical Society
URI <https://doi.org/10.1103/PhysRevD.105.066012>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6802>
Date of Publication 2022-03

Author(s) CMS Collaboration; Sirunyan, A.M.; DUBE, SOURABH; KANSAL, B.; KAPOOR, A.; KOTHEKAR, K.; PANDEY, S.; RANE, A.; RASTOGI, A.; SHARMA, SEEMA et al.
Title Using Z Boson Events to Study Parton-Medium Interactions in Pb-Pb Collisions
Citation Physical Review Letters, 128(12), 122301.
Publisher American Physical Society
URI <https://doi.org/10.1103/PhysRevLett.128.122301>
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Author(s) CMS Collaboration; Tumasyan, A.; ALPANA, K.; DUBE, SOURABH; KANSAL, B.; LAHA, S.; PANDEY, S.; RANE, A.; RASTOGI, A.; SHARMA, SEEMA et al.

Title Search for single production of a vector-like T quark decaying to a top quark and a Z boson in the final state with jets and missing transverse momentum at $\sqrt{s} = 13$ TeV

Citation Journal of High Energy Physics, 2022(5), 93.

Publisher Springer Nature

URI [https://doi.org/10.1007/JHEP05\(2022\)093](https://doi.org/10.1007/JHEP05(2022)093)

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7007>

Date of Publication 2022-05

Author(s) CMS Collaboration; Tumasyan, A.; ALPANA, K.; DUBE, SOURABH; KANSAL, B.; LAHA, S.; PANDEY, S.; RASTOGI, A.; SHARMA, SEEMA et al.

Title Measurement of the inclusive and differential $t\bar{t}\gamma$ cross sections in the dilepton channel and effective field theory interpretation in proton-proton collisions at $\sqrt{s} = 13$ TeV

Citation Journal of High Energy Physics, 2022(5), 91.

Publisher Springer Nature

URI [https://doi.org/10.1007/JHEP05\(2022\)091](https://doi.org/10.1007/JHEP05(2022)091)

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7006>

Date of Publication 2022-05

Author(s) CMS Collaboration; Tumasyan, A.; ALPANA, K.; DUBE, SOURABH; KANSAL, B.; LAHA, S.; PANDEY, S.; RASTOGI, A.; SHARMA, SEEMA et al.

Title Search for higgsinos decaying to two Higgs bosons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV

Citation Journal of High Energy Physics, 2022(5), 14.

Publisher Springer Nature

URI [https://doi.org/10.1007/JHEP05\(2022\)014](https://doi.org/10.1007/JHEP05(2022)014)

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7013>

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Author(s) CMS Collaboration; Tumasyan, A.; ALPANA, A.; DUBE, SOURABH; KANSAL, B.; LAHA, A.; PANDEY, S.; RANE, A.; RASTOGI, A.; SHARMA, SEEMA et al.

Title Search for supersymmetry in final states with two or three soft leptons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV

Citation Journal of High Energy Physics, 2022(4), 91.

Publisher Springer Nature

URI [https://doi.org/10.1007/JHEP04\(2022\)091](https://doi.org/10.1007/JHEP04(2022)091)

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6976>

Date of Publication 2022-04

Author(s) CMS Collaboration; Tumasyan, A.; ALPANA, A.; DUBE, SOURABH; KANSAL, B.; LAHA, A.; PANDEY, S.; RANE, A.; RASTOGI, A.; SHARMA, SEEMA et al.

Title Search for heavy resonances decaying to a pair of Lorentz-boosted Higgs bosons in final states with leptons and a bottom quark pair at $\sqrt{s} = 13$ TeV

Citation Journal of High Energy Physics, 2022(5), 74.

Publisher Springer Nature

URI [https://doi.org/10.1007/JHEP05\(2022\)005](https://doi.org/10.1007/JHEP05(2022)005)

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6989>

Date of Publication 2022-05

Author(s) CMS Collaboration; Tumasyan, A.; DUBE, SOURABH; KANSAL, B.; PANDEY, S.; RANE, A.; RASTOGI, A.; SHARMA, SEEMA et al.

Title Search for $W\gamma$ resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV using hadronic decays of Lorentz-boosted W bosons

Citation Physics Letters B, 826, 136888.

Publisher Elsevier B.V.

URI <https://doi.org/10.1016/j.physletb.2022.136888>

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Author(s) DESWAL, SWATI; PANDAY, RISHUKUMAR; Naphade, Dipti R.; Dixit, Prashant; Praveenkumar, Balu; Zareba, Jan K.; Anthopoulos, Thomas D.; OGALE, SATISHCHANDRA; BOOMISHANKAR, RAMAMOORTHY

Title Efficient Piezoelectric Energy Harvesting from a Discrete Hybrid Bismuth Bromide Ferroelectric Templated by Phosphonium Cation

Citation Chemistry-A European Journal.

Publisher Wiley

URI <https://doi.org/10.1002/chem.202200751>

DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6801>

Date of Publication 2022-03

Author(s) GARG, CHARU; Cervellino, Antonio; NAIR, SUNIL

Title Frustration, strain and phase co-existence in the mixed valent hexagonal iridate $Ba_3NaIr_2O_9$

Citation Journal of Physics: Condensed Matter, 34(28), 285602.

Publisher IOP Publishing

URI <https://doi.org/10.1088/1361-648X/ac6923>

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Date of Publication 2022-07

Author(s) HASHIM, MOHAMED; GHOSH, PRASENJIT

Title Identifying resonant dopants in $BaCu_2S_2$ for thermoelectric applications: A density functional theory based study

Citation Solid State Communications, 342, 114592.

Publisher Elsevier B.V.

URI <https://doi.org/10.1016/j.ssc.2021.114592>

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Date of Publication 2022-02

Author(s) LIGO Scientific Collaboration; Virgo Collaboration; KAGRA Collaboration; Abbott, R.; RAPOL, UMAKANT D.; SOURADEEP, TARUN et al.

Title Constraints on dark photon dark matter using data from LIGO's and Virgo's third observing run

Citation Physical Review D, 105(6), 063030.

Publisher American Physical Society

URI <https://doi.org/10.1103/PhysRevD.105.063030>

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Author(s) MOHANTA, SANDIPAN; SARYAL, SUSHANT; AGARWALLA, BIJAY KUMAR
Title Universal bounds on cooling power and cooling efficiency for autonomous absorption refrigerators
Citation Physical Review E, 105(3), 034127.
Publisher American Physical Society
URI <https://doi.org/10.1103/PhysRevE.105.034127>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6972>
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Author(s) RAM, M. HARSHANTH; KRITHIKA, V. R.; BATRA, PRIYA; MAHESH, T. S.
Title Robust quantum control using hybrid pulse engineering
Citation Physical Review A, 105(4).
Publisher American Physical Society
URI <https://doi.org/10.1103/PhysRevA.105.042437>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/7008>
Date of Publication 2022-04

Author(s) SANTHANAM, M.S.; Paul, Sanku; KANNAN, BHARATHI J.
Title Quantum kicked rotor and its variants: Chaos, localization and beyond
Citation Physics Reports, 956.
Publisher Elsevier B.V.
URI <https://doi.org/10.1016/j.physrep.2022.01.002>
DR URI <http://dr.iiserpune.ac.in:8080/xmlui/handle/123456789/6598>
Date of Publication 2022-04

Author(s) SARYAL, SUSHANT; DHAR, DEEPAK
Title Exact results for interacting hard rigid rotors on a d-dimensional lattice
Citation Journal of Statistical Mechanics: Theory and Experiment, 2022, 043204.
Publisher IOP Publishing
URI <https://doi.org/10.1088/1742-5468/ac6038>
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