

A. Journal Articles

- Abbot R. *, Bhandare A., Chaturvedi M., Dave I., George J., Khursheed M., Malik A., Pai A., Pant B.C., Raja S., Rajan C., Sharma P., ShyamSundar S., Thondapu R., Verma Y. et al.
Search for gravitational waves from Scorpius X-1 with a hidden Markov model in O3 LIGO data
Physical Review D, 106, 062002 (2022)
- Abbot R. *, Bhandare A., Chaturvedi M., Dave I., George J., Khursheed M., Malik A., Pai A., Pant B.C., Raja S., Rajan C., Sharma P., ShyamSundar S., Thondapu R., Verma Y. et al.
Search for continuous gravitational wave emission from the milky way center in O3 LIGO-Virgo data
Physical Review D, 106, 042003 (2022)
- Abbot R. *, Bhandare A., Chaturvedi M., Dave I., George J., Khursheed M., Malik A., Pai A., Pant B.C., Raja S., Rajan C., Sharma P., ShyamSundar S., Thondapu R., Verma Y. et al.
All-sky, all-frequency directional search for persistent gravitational waves from advanced LIGO's and advanced Virgo's first three observing runs
Physical Review D, 105, 122001 (2022)
- Abbot R. *, Bhandare A., Chaturvedi M., Dave I., George J., Khursheed M., Malik A., Pai A., Pant B.C., Raja S., Rajan C., Sharma P., ShyamSundar S., Thondapu R., Verma Y. et al.
Search for subsolar-mass binaries in the first half of advanced LIGO's and advanced Virgo's third observing run
Physical Review Letters, 129, 061104(1-16) (2022)
- Abbot R. *, Bhandare A., Chaturvedi M., Dave I., George J., Khursheed M., Malik A., Pai A., Pant B.C., Raja S., Rajan C., Sharma P., ShyamSundar S., Thondapu R., Verma Y. et al.
First joint observation by the underground gravitational-wave detector KAGRA with GEO 600
Progress of Theoretical and Experimental Physics, 2022, 063F01 (2022)
- Ahlawat A., Khan A.A., Deshmukh P., Shirolkar M.S. *, Sinha A.K., Satapathy S., Sathe V.G. *, Choudhary R.J. *
Correlation between spin-phonon coupling and magneto-electric effects in $\text{CoFe}_2\text{O}_4/\text{PMN-PT}$ nanocomposite: Raman spectroscopy and XMCD study
Journal of Materials Science: Materials in Electronics, 33, 19766–19778 (2022)
- Alam M.A., Tiwari M.K., Trivedi A., Khooha A., Singh A.K.
Improvement of limit of detection sensitivities in the parts per billion range using conventional geometry synchrotron radiation excited EDXRF measurements
Journal of Analytical Atomic Spectrometry, 37, 575-583 (2022)
- Asirvatham J. *, Luong M.A. *, Baraik K., Ganguli T., Claverie A. *, Kanjilal A. *
Revealing the impact of prestructural ordering in GaSb thin films
Journal of Physical Chemistry C, 126, 15405–15414 (2022)
- Aswal D.K. *, Nakhe S.V., Shukla P. *, Chaudhary N. *, Ganguli T., Upadhyay B.N.
An overview of key enabling technologies for DAE's nuclear programme
Current Science, 123, 353-360 (2022)
- Bajaj N. *, Khandelwal A., Chattopadhyay M.K., Sagdeo A. et al.
Sublinear temperature dependence of thermal conductivity in the incommensurate phase of TlInTe_2
Physical Review B, 106, 214101(1-8) (2022)
- Banik S., Vijay K., Paul S., Mansuri N. *, Shukla D.K. *, Srivastava S. K., Sagdeo A., Kumar K. *, Tripathi S. *, Jha S.N. *
Spin reorientation transition driven by polaronic states in Nd_2CuO_4
Materials Advances, 3, 7559 (2022)
- Bharadwaj V., Rai A.K., Upadhyaya B.N., Singh R., Rai S.K., Bindra K.S.
A study on effect of heat input on mode of welding, microstructure and mechanical strength in pulsed laser welding of Zr-2.5wt.%Nb alloy
Journal of Nuclear Materials, 564, 153685 (2022)
- Bhartiya S., Singh R., Singh A., Balal M. *, Bhardwaj P. *, Kohli D.K., Singh M.K.
Nitrogen-doped carbon aerogel synthesis by solvothermal gelation for supercapacitor application
Journal of Solid State Electrochemistry, 26, 2829–2839 (2022)
- Bhisikar A., Singh M.N., Khantwal N., Sinha A.K. *
Effect of microstructural parameters of ball-milled Si powder on reactivity with water to produce H_2 : way forward for on-demand H_2 production
Materials Today Communications, 33, 104138(1-10) (2022)
- Biswal R., Prakash O., Dixit S.K.
Studies on high power second-harmonic deep-UV generation from a high repetition-rate Cu-HBr laser
Laser Physics, 32, 125002 (2022)
- Chakraborty S. *, Sivasubramanian V. *, Singh M.N., Upadhyay A. *, Sinha A.K., Ravindran T.R. *
Pressure-induced variations of medium-range order in B_2O_3 glasses

- Bulletin of Materials Science*, 45, 190 (2022)
17. Chaturvedi M., Bhandare R., Kumar S., Verma Y., Raja S.
A compact full stokes polarimeter
Optik, 267, 169645 (2022)
 18. Chetia S.K., Das A.K., Ajimsha R.S., Banik S., Singh S.,
Padhi P.S., Sharma T.K., Misra P.
Blocking Si-induced visible photoresponse in
n-Mg_xZn_{1-x}O/p-Si heterojunction UV photodetectors
using MgO barrier layer
Physica Status Solidi A, 219, 2200285 (2022)
 19. Chetia S.K., Rajput P.*, Ajimsha R.S., Singh S., Das A.K.,
Kumar R., Padhi P.S., Sinha A.K., Jha S.N.*, Sharma
T.K., Misra, P.
Bandgap tunability and local structure of Mg_xZn_{1-x}O
(0 ≤ x ≤ 1) thin films grown by RF magnetron co-
sputtering
Applied Physics A, 128, 724 (2022)
 20. Dubey D.N.*, Singh G., Singh A.K., Tripathi S.*
Role of phonon mode in the enhancement of ferroelectric
polarization in a perovskite-based eco-friendly functional
material
Europhysics Letters, 140, 26003 (2022)
 21. Dutt R., Bhattacharya J., Chakrabarti A.
Investigation of mechanical, lattice dynamical, electronic
and thermoelectric properties of half Heusler
chalcogenides: a DFT study
Journal of Physics and Chemistry of Solids,
167,110704 (2022)
 22. Gawai U.*, Kamble S.*, Kamble C.*, Waghmare Y.*,
Kulkarni S.*, Singh M., Yadav A.*, Jha S.*, Dole B.*
Local structural study of α-MoO₃ micro-strips using
synchrotron x-ray diffraction and x-ray absorption
spectroscopy at Mo K-edge
The European Physical Journal Applied Physics, 97, 1-
7 (2022)
 23. Gawai U.P.*, Singh M.N. et al.
Microwave-assisted coprecipitation synthesis and local
structural investigation on NiO, β-Ni(OH)₂/Co₃O₄
nanosheets, and Co₃O₄ nanorods using x-ray absorption
spectroscopy
ACS Omega, 7, 6700–6709 (2022)
 24. Ghosh S., Ghosh Haranath
Excitonic effects in Fe/As K-edge absorption for iron
based superconductors: a combined DFT and BSE
analysis
Advanced Theory and Simulations, 5, 2100525 (2022)
 25. Gupta M.*, Rambadey O.*, Shirbhate S.C.*, Acharya S.*,
Sagdeo A., Sagdeo P.*
Probing the signature of disordering and delocalization of
oxygen vacancies and anti-site defects in doped LaAlO₃
Journal of Physical Chemistry C, 126, 20251–20262
(2022)
 26. Gupta M.*, Rambadey O.V.*, Sagdeo A., Sagdeo P.R.*
Investigating the structural, vibrational, optical, and
dielectric properties in Mg-substituted LaAlO₃
Journal of Materials Science: Materials in Electronics,
33, 13352–13366 (2022)
 27. Gupta V.K., Ingale A.A., Aggarwal R.
Novel use of selectivity of resonance Raman
spectroscopy to study polytypism and mixed to pure
phase conversion in individual InAs NWs on laser
irradiation
Applied Surface Science, 600, 154091(1-9) (2022)
 28. Gurukrishna K.*, Mangavati, S.*, Rao A.*, Poornesh P.*,
Petwal V.C., Verma, V.P., Dwivedi, J.
On the high-energy electron beam irradiation-induced
defects in Cu₂SnSe₃ system: an effort towards modifying
the structure, microstructure, and thermoelectric transport
Journal of Materials Science: Materials in Electronics,
33, 22270–22280 (2022)
 29. Jangid D.K.*, Makde R.D., Kumar A., Jangir R. et al.
Dithiophosphonate anchored heterometallic
(Ag(I)/Fe(II)) molecular catalysts for electrochemical
hydrogen evolution reaction
Inorganic Chemistry, 61, 13342–13354 (2022)
 30. Jogi J.K.*, Singhal S.K.*, Jangir R., Dwivedi, A.*, Tanna
A.R.*, Singh, R., Gupta, M.*, Sagdeo, P.R.*
Investigation of the structural and optical properties of
zinc ferrite nanoparticles synthesized via a green route
Journal of Electronic Materials, 51, 5482–5491 (2022)
 31. Kaushik S.*, Khanderao A.*, Gupta P., Reddy V.R.*,
Kumar D.*
Growth of ultra-thin Cobalt on fullerene (C₆₀) thin-film:
in-situ investigation under UHV conditions
Materials Science and Engineering: B, 284, 115911
(1-7) (2022)
 32. Khan S., Khan S., Jayabalan J., Khamari S.K., Sharma
T.K.
Role of intra-band relaxation of holes and tunneling of
electrons in carrier relaxation in AlGaAs/GaAs quantum
well
Physica Status Solidi B, 259, 2100329 (2022)
 33. Khatua D.P., Singh A., Gurung S., Jayabalan J.
Excitation density dependent carrier dynamics in a
monolayer MoS₂: exciton dissociation, formation and
bottlenecking
Micro and Nanostructures, 165, 207205 (2022)
 34. Khursheed M., Muguli H.*, Chellan R., Pant B.C.,
George J., Raja S.

- Alternate method to measure transmission and internal losses in non-planar ring oscillator laser
Optical Engineering, 61, 086108 (2022)
35. Kim H.T.*, Pathak V.B.*, Hojbota C.I.*, Rao B.S.
Laser wakefield electron acceleration with PW lasers and future applications
Journal of the Korean Physical Society, 80, 670–683 (2022)
36. Kumar R.*, Banik S., Sen S.*, Jha S.*, Bhattacharyya D.*
Theoretical and experimental investigations on Mn doped Bi₂Se₃ topological insulator
Physical Review Materials, 6, 114201(1-11) (2022)
37. Kumar Y., Tripathy S., Nand M., Singh R., Srihari V.*, Das A., Singh R., Deshpande U.*, Jha S.N., Arya A.*
Structural and optical properties of Nd doped LaPO₄
Journal of Alloys and Compounds, 925, 166772(1-9) (2022)
38. Kumar Y., Tripathi S.*, Nand M.*, Sagdeo A., Jha S.N.*, Arya A.*
Synthesis and structural characterization of pure and Nd-doped zircon
Materialstoday: Proceedings, 62, 5201-5203 (2022)
39. Mairaj A.*, Ansari M.S., Singh M.P.
Artificial neural network-based modeling of flashlamp characteristics
Electrical Engineering, 104, 1-20 (2022)
40. Majumdar A.*, Dutta P.*, Sikdar A.*, Lee H.*, Ghosh D.*, Jha S.N., Tripathi S., Oh Y.*, Maiti U.N.*
Impact of atomic rearrangement and single atom stabilization on MoSe₂@NiCo₂Se₄ heterostructure catalyst for efficient overall water splitting
Small, 18, 2200622 (2022)
41. Mayya Y.S.*, Das D., Marathe P.P.*
Bhabha and electronics
Current Science, 123, 330-342 (2022)
42. Mishra S., Rao B.S., Moorti A., Chakera J.A.
Enhanced betatron x-ray emission in a laser wakefield accelerator and wiggler due to collective oscillations of electrons
Physical Review Accelerators and Beams, 25, 090703(1-9) (2022)
43. Mohanty S.*, Behera S.*, Sen S.*, Parida B.N.*, Singh R.
Dielectric, optical, and magnetic behaviors of magnesium iron-based double perovskite
Journal of Solid State Science and Technology, 11, 113003 (2022)
44. Nand M.*, Mandal S.K., Urkude R., Rai S.K. et al.
Different polymorphs of Y doped HfO₂ epitaxial thin films: insights into structural, electronic and optical properties
Journal of Alloys and Compounds, 928, 167099(1-11) (2022)
45. Nanda S.S.*, Nayak P.*, Gupta S.K.*, Rawat N.S.*, Goutam U.K., Das S.*
Structural, optical spectroscopy and energy transfer features of Tb³⁺-activated (Y, Gd)F₃ nanophosphors for UV-based LEDs
New Journal of Chemistry, 46, 15617-15627 (2022)
46. Nayak S.K.*, Jinoop A.N.*, Paul C.P., Kumar V.A.*, Subburaj D.*, Singh R., Bindra K.S.
On the hot isostatic pressing of Inconel 625 structures built using laser powder bed fusion at higher layer thickness
The International Journal of Advanced Manufacturing Technology, 121, 4065–4078 (2022)
47. Pal S.*, Chandra L.S.S., Chattopadhyay M.K., Roy S.B.*
Interesting magnetic response of the nuclear fuel material UO₂
Phase Transitions, 95, 120-130 (2022)
48. Panda M.R.*, Sau S.*, Gangwar R., Pandey D., Chakrabarti A., Banerjee A., Sagdeo A. et al.
An excellent and fast anodes for lithium-ion batteries based on the 1T'-MoTe₂ phase material
ACS Applied Energy Materials, 5, 9625–9640 (2022)
49. Patel D.*, Trivedi K.A.*, Srivastava H., Kane S.R., Modi C.K.*
Green sustainable approach for carbon-carbon bond-forming reactions using FeNPs/DETA@rGO nano-catalyst
Inorganic Chemistry Communications, 136, 109175 (2022)
50. Patil J., Tokekar V.*, Rajan A.*, Rawat A.
IP source lockdown to detect and mitigate multi-destination, multi-port, multi-protocol DDoS attacks in SDN
International Journal of Innovative Technology and Exploring Engineering, 11, 29-40 (2022)
51. Patil J., Tokekar V.*, Rajan A., Rawat A.
Discriminate, locate and mitigate DDoS traffic in presence of flash crowd in software defined network
Journal of Super Computing, 78, 16770-16793 (2022)
52. Patri T.*, Ghosh A.*, Mahesh M.L.V.*, Babu P.D.*, Mandal S.*, Singh M.N.
Fortified relaxor ferroelectricity of rare earth substituted 4-layered BaBi₃₋₉RE₀₋₁Ti₄O₁₅ (RE = La, Pr, Nd, and Sm) aurivillius compounds
Scientific Reports, 12, 16508(1-19) (2022)

53. Phadte D., Upadhyay A., Prasad Y.B.S.R.
Electron beam acceleration using colliding pulses injection in parabolic plasma channel
Optik, 265, 169402 (2022)
54. Preeti, Pandey A., Selvamani R., Gupta S.M., Shekhar C.*
Synthesis, structural and dielectric studies of magnetoelectric lead nickel niobate ceramics
Journal of the Australian Ceramic Society, 58, 963–972 (2022)
55. Preeti, Pandey A., Selvamani R., Gupta S.M., Shekhara C.*
Synthesis, structural and Raman investigations of $\text{PbNi}_{1/3}\text{Nb}_{2/3}\text{O}_3$ ceramics
Transactions of the Indian Ceramic Society, 81, 133-137 (2022)
56. Rajendiran P., Parihar Y.S., Bhushan I., Pattnaik J.K., Rajan A.
A study of research publications of Raja Ramanna Centre for Advanced Technology from 1987 to 2020
Journal of Indian Library Association, 58, 90-101 (2022)
57. Ramadas H.* , Nath A.K.* , Sarkar S.* , Ganesh P., Kaul R., Majumdar J.T.*
Fatigue crack growth rate and fracture toughness evaluation of 15-5 precipitation hardening stainless steel fabricated by laser powder bed fusion process
Materials Science and Engineering A, 861, 144356 (2022)
58. Ramjan S.K.* , Chandra L.S.S., Singh R., Chattopadhyay M.K.
Strong paramagnetic response in the superconducting state of Y-containing $\text{V}_{0.6}\text{Ti}_{0.4}$ alloys
Superconductor Science and Technology, 35, 105006 (1-8) (2022)
59. Raut S.* , Sharma R.K. et al.
Effect of reentrant spinglass-like states on Schottky anomaly and exchange bias in polycrystalline $\text{Sm}_{0.5}\text{Y}_{0.5}\text{Fe}_{0.58}\text{Mn}_{0.42}\text{O}_3$
Journal of Magnetism and Magnetic Materials, 563, 169950(1-10) (2022)
60. Reddy Y.P.* , Narayana K.L.* , Mallik M.K.* , Paul C.P., Singh C.P.
Experimental evaluation of additively deposited functionally graded material samples-microscopic and spectroscopic analysis of SS-316L/Co-Cr-Mo alloy
AIMS Materials Science, 9, 653-667 (2022)
61. Saxena M.K., Sharma R.K., Kumar S., Nathwani R.K., Gupta A.M., Kumar A., Kumar A., Bhatnagar V.K., Dixit S.K.
Studies on thermal profile measurement and fire detection in a power supply cable of a synchrotron radiation source by Raman optical fiber distributed temperature sensor system
Optical Fiber Technology, 73, 103020(1-9) (2022)
62. Seema*, Tayal A.* , Gupta P., Chakravarty S.* , Gupta M.*
Thickness-dependent structural and magnetic properties of thin films
Journal of Magnetism and Magnetic Materials, 563, 169999(1-6) (2022)
63. Selvamani, R., Pandey, A.H.* , Gupta, S.M., Karnal, A.K.
Complex impedance spectroscopy and dielectric relaxation studies of lead-free layered perovskite $\text{Bi}_{4-x}\text{La}_x\text{Ti}_3\text{O}_{12}$ ceramics: a ferroelectric to relaxor crossover
Journal of Materials Science: Materials in Electronics, 33, 5396–5410 (2022)
64. Sharma A., Yadav P., Bhatt R., Banik S., Singh G., Bhaumik I.
Effect of Nb substitution on the electronic property of lead-free piezoelectric $(\text{Na}_{0.41}\text{K}_{0.09}\text{Bi}_{0.50})\text{TiO}_3$ single crystal: optical absorption and photoelectron study
Journal of Applied Physics, 132, 205103(1-9) (2022)
65. Sharma A.K.
Theoretical and experimental studies on dispersive characteristics of a sequence of tilted lenses with centration errors
Applied Physics B, 128, 65 (2022)
66. Sharma S.K., Gupta H.* , Jain V.K., Ganesh P., Gupta R.K., Yadav D.P., Kaul R.
Investigation of ultra-high vacuum compatible weld joints of AA5083 and AA6061 materials for synchrotron radiation source
Journal of Materials Engineering and Performance, 31, 4795–4810 (2022)
67. Sharma V.P., Ganguli T., Shukla R.
Computational analysis of vertical comb-drive microactuator with extended mirror for manipulation of light
Journal of Vacuum Science & Technology B, 40, 063001(1-9) (2022)
68. Sheikh M. S.* , Ghosh A., Roy A.* , Bhandari S.* , Sundaram S.* , Mallick T.K.* , Ghosh Haranath, Sinha T.P.*
High open-circuit voltage in double perovskite oxide A_2NdSbO_6 (A = Ba, Sr) photoanode-based dye-sensitized solar cells
Journal of Electronic Materials, 51, 4281–4287 (2022)
69. Shukla B.* , Kumar N.R.S.* , Jena H.* , Upadhyay A., Shekar N.V.C.*
Compressibility studies of $\text{RE}_6\text{UO}_{12}$ at extreme conditions of pressure

Bulletin of Materials Science, 45, 215 (2022)

70. Sterling C.M.*, Kamal C., Garcia-F.A.*, Man G.J.*, Svanstrom S.*, Nayak P.K.*, Butorin S.M.*, Rensmo H.*, Cappel U.B.*, Odelius M.*
Electronic structure and chemical bonding in methylammonium lead triiodide and its precursor methylammonium iodide
Journal of Physical Chemistry C, 126, 20143–20154 (2022)
71. Tavar D.*, Kamlesh Prakash, S.*, Ashiq M.*, Singh P.*, Raizada P.*, Sharma R.K., Srivastava A.K., Singh A.*
Investigation of Li-rich manganese oxide spinel structures for electrochemical water oxidation catalysis
Dalton Transactions, 51, 12558-12568 (2022)
72. Varghese P.*, Vetrivendan E.*, Krupa B.R.V.*, Shukla P.K.*, Gupta R.K., Rao E.H.*, Puppala G., Ningshen S.*
Degradation of thermally sprayed Al₂O₃ coatings in reactor-grade liquid-sodium and its mitigation by laser treatment
Ceramics International, 48, 13914-13926 (2022)
73. Verma H.*, Le G.K.*, Gupta S., Dhawan R., Modi M.H., Jonnard P.*
Interface analysis of Mg/Sc and Sc/Mg bilayers using x-ray reflectivity
Thin Solid Films, 763, 139595 (2022)
74. Verma P.*, Raut S.*, Sarkar D.*, Rajput P.*, Singh M.N., Chakravarty S.*, Sharma R.*, Giri S.*
Tracing local disorder in near-infrared-upconverting crystals of Li⁺-doped Gd₂O₃ through the Gd(III)-O bond distance
Journal of Physical Chemistry C, 126, 19849–19857 (2022)
75. Verma D.K., Saxena G., Paraye A., Rajan A., Rawat A., Verma R.K.
Classifying COVID-19 and viral pneumonia lung infections through deep convolutional neural network model using chest x-ray images
Journal of Medical Physics, 47, 57–64 (2022)
76. Yadav P., Sharma A., Bhaumik I., Singh G.
Effect of electric field induced structural ordering on photo-luminescence and piezoelectric response of praseodymium doped (Na_{0.41}K_{0.09}Bi_{0.5})TiO₃ ceramics
Journal of Applied Physics, 132, 224104(1-11) (2022)
77. Yadav S.*, Chandra M.*, Rawat R.*, Khandelwal A., Chandra L.S.S., Choudhary R.J.*, Sathe V.*, Sinha A.K., Singh K.*
Temperature-dependent structural, dielectric, and Raman spectroscopy studies on magnetoelectric Co₂Nb₂O₉
Journal of Physical Chemistry C, 126, 14986–14994 (2022)

B. Invited Talks

1. Arya R.
Laser power supplies and controllers for laser based nuclear field applications
DAE-BRNS 31st National Laser Symposium (NLS-31), IIT Kharagpur, Kharagpur, Dec. 3-6, 2022
2. Banik S.
Photoemission study of localized and itinerant electronic states in complex magnetic materials.
National Conference on Electronic Structure (NCES 2022), Goa University, Goa, Nov. 14-16, 2022
3. Chakera J.A.
Laser Plasma Based Particle Accelerators and Some Recent Studies
37th National Symposium on Plasma Science & Technology (Plasma-2022), IIT Jodhpur, Jodhpur, Dec. 12-14, 2022
4. Chattopadhyay M.K.
FEL based facility for IR-THz spectroscopy of materials
66th DAE-Solid State Physics Symposium, (DAE-SSPS 2022), Birla Institute of Technology Mesra, Ranchi, Jharkhand, Dec. 18-22, 2022
5. Ganguli T.
Indus synchrotron beamlines: a tool for advanced materials research
1st HBNI Theme Meeting on Life Sciences (HBNI-TM-LS), RRCAT, Indore, Sept. 7-10, 2022
6. Kamal C.
Hydrogen bonding motifs of water on TiO₂ (110) surface
66th DAE-Solid State Physics Symposium, (DAE-SSPS 2022), Birla Institute of Technology Mesra, Ranchi, Jharkhand, Dec. 18-22, 2022
7. Karnewar A.K.
Characterization and measurement of beam parameters for industrial electron linac
Workshop on Recent Developments in Beam Diagnostics System (DBDS-2022), Inter University Accelerator Centre, New Delhi, Sep. 23, 2022
8. Khare P., Ghosh R., Gilankar S., Arzare D., Patel H.K., Shrivastava A., Patidar S.C., Shukla A.K., Jain A., Sinnarkar D., Gupta C., Agrawal G., Lakshminarayan A., Kushwah M.
Development of liquid nitrogen based refrigerated transportable system for perishables
National Symposium on Cryogenics and Superconductivity (NSCS28), IIT Kharagpur, Kharagpur, Oct. 18-21, 2022
9. Majumder S.K.

Biophotonics for improved healthcare
1st HBNI Theme Meeting on Life Sciences (HBNI-TM-LS), RRCAT, Indore, Sept. 7-10, 2022

10. Mukhopadhyay P.K.
Generation of pulses in diverse temporal formats from modelocked all-normal dispersion fiber laser
DAE-BRNS 31st National Laser Symposium (NLS-31), IIT Kharagpur, Kharagpur, Dec. 3-6, 2022
11. Nayak M.
An innovative approach to reconstruct spatio-chemically resolved interfacial map of nano-scaled complex interfaces
Condensed Matter Seminar, Institute of Physics, Bhubaneswar, Dec. 5, 2022
12. Nayak M.
Nano-scale multilayered x-ray optics for technological applications: trends & challenges
National conference on Advances in Condensed Matter Physics, Post Graduate Dept. of Physics, Govt. Autonomous College, Angul, Odisha, Dec. 3-4, 2022
13. Paul C.P.
LAM activities at RRCAT
DAE-BRNS 31st National Laser Symposium (NLS-31), IIT Kharagpur, Kharagpur, Dec. 3-6, 2022
14. Raghavendra S.
Cryogenic infrastructure and testing facilities for superconducting RF cavities at RRCAT
National Symposium on Cryogenics and Superconductivity (NSCS28), IIT Kharagpur, Kharagpur, Oct. 18-21, 2022
15. Shrivastava R.
Emerging paradigms in biophotonics for diagnosis and management of diseases
DAE-BRNS 31st National Laser Symposium (NLS-31), IIT Kharagpur, Kharagpur, Dec. 3-6, 2022
16. Upadhyaya B.N.
Recent results on high power fiber laser development activity at RRCAT
XLV Symposium of Optical Society of India, Conference on Optics, Photonics and Quantum Optics (COPaQ 2022), Indian Institute of Technology Roorkee, Roorkee, India, Nov. 10-13, 2022
17. Yadav S.
Application of AI techniques for enhancement of beam diagnostics systems and operational performance of Indus-2 synchrotron radiation source
Workshop on Recent Developments in Beam Diagnostics System (DBDS-2022), Inter University Accelerator Centre, New Delhi, Sep. 23, 2022

C. Seminar/Conference Presentations
C.1. 1st HBNI Theme Meeting on Life Sciences (HBNI-TM-LS), RRCAT, Indore, Sept. 7-10, 2022

1. Bhakar S.K., Deshmukh P., Satapathy S., Majumder S.K.
Magnetic Nanoparticles in Biomedical Applications
2. Chatterjee S., Dube A., Majumder S.K.
Photodynamic treatment efficacy of cycloimide purpurin-8, a near-infrared absorbing photosensitizer in drug sensitive and resistant cancer cells
3. Chowdhury A., Verma S., Krishna H., Majumder S.K.
Single cell absorption spectroscopy of red blood cells
4. Chowdhury A., Verma S., Krishna H., Majumder S.K.
Diffraction Phase Microscopy coupled with Optical Tweezers
5. Debnath C., Shukla A., Kar S., Chakraborty S., Sahu K., Verma S., Majumder S.K.
Lithium Niobate nanoparticles: Synthesis, characterization and their potential biomedical applications
6. Deshmukh P., Sharma B., Satapathy S., Majumder S.K.
Strategies to develop colour tunable NaGdF based phosphor having multimodal imaging probe capability
7. Deshmukh P., Sharma B., Chakraborty S., Sahu K., Satapathy S., Majumder S.K.
Upconversion nanophosphor for image-guided cancer surgery
8. Kar S., Saha D.*, Debnath C., Shrivastava R., Verma S., Majumder S.K.
Synthesis and characterization of ytterbium-doped strontium zirconate (Yb:SrZrO) long persistent nanophosphor and evaluation of its cytotoxicity for bioimaging applications
9. Maharwal N., Punetha M., Shrivastava R., Majumder S.K.
Cell based therapeutic approaches for diabetes management: insulin secretion studies
10. Maharwal N., Bansal A., Shrivastava R., Majumder S.K.
Effect of simvastatin on insulin secretion in MIN 6 ellsc
11. Mund S.S., Sahu K., Chakraborty S., Majumder S.K.
Evaluation of combined action of antimicrobial photodynamic therapy and probiotics derived cell free supernatant on methicilin resistant staphylococcus aureus
12. Mund S.S., Chakraborty S., Sahu K., Majumder S.K.
Photobiomodulation pre conditioning to enhance anti-bacterial action of probiotics

13. Pal S., Kumar N., Krishna H., Majumdar S.K.
Development of Hyper Spectral Imaging (HSI) system for microscopic imaging of the biological tissues
14. Pradhan S., Satapathy S., Majumder S.K.
Superparamagnetic BiFeO/P(VDF-TrFE) nano composite magnetoelectric sensor for biological applications
15. Ramani N., Trivedi A., Tiwari M.K., Sharma D.
Possible use of TXRF for estimation of copper as surrogate marker for pharmacokinetics of chlorophyllin
16. Rastogi M., Chakraborty S., Sahu K., Majumder S.K.
In-vitro study of possible synergistic effect of tigecycline and 5-ALA photodynamic therapy on MCF-7 cell line
17. Rastogi M., Chakraborty S., Sahu K., Chowdhury A., Majumder S.K.
Characterization of single stem cells using Raman micro spectroscopy
18. Satapathy S., Chouhan P., Upadhyaya D., Sharma B., Deshmukh P., Chakraborty S., Sahu K., Majumder S.K.
A study on antibacterial activity of ZnO-chitosan nanocore-shell
19. Singh Y., Chowdhury A., Dasgupta R., Majumder S.K.
Study of the lithium ion exposure effects on human red blood cells using optical spectroscopy and laser trapping
6. Raghavendra S., Kumar M., Gupta P.K., Sharma R.K., Nema V., Doohan R.S., Kokil S.V., Chauhan S.K., Suhane S., Shrivastava P.
Cryogenic commissioning of horizontal test stand
7. Sharma R.K., Gupta P.K., Raghavendra S.
Design of liquid nitrogen cooled 80 K thermal shield and flexibility analysis of internal piping for cryogenic distribution box of horizontal test stand
8. Tiwari A., Gilankar G., Ghosh R., Jain A. Patel H.K., Agrawal G., Lakshminarayan A., Khare P.
Analysis exploring fast cool down possibility of 50K thermal shield with finger welds for HB 650MHz cryomodule

C.3. DAE-BRNS 31st National Laser Symposium (NLS-31), IIT Kharagpur, Kharagpur, Dec. 3-6, 2022
C.2. National Symposium on Cryogenics and Superconductivity (NSCS 28), IIT Kharagpur, Kharagpur, Oct. 18-21, 2022

1. Agrawal G., Tiwari A., Gilankar S., Ghosh R., Khare P.
Design of vacuum vessel for LB650 cryomodule
2. Bhardwaj A., Singh A.P., Singh S., Padiyar A.S., Kumar A., Mundra G.
Design for manufacturing of stainless steel helium vessel superconducting cavity
3. Gilankar S.G., Ghosh R., Patel H.K., Tiwari A., Sinnarkar D., Agrawal G., Khare P., Raghavendra S., Gupta P.K., Sharma R.K., Ozelis J.*, Roger V.*, Chandrasekaran S.*, Rowe A.*
Overview of 650 MHz cryomodule developmental activities at RRCAT
4. Gupta P.K., Sharma R.K., Raghavendra S.
Vertical test stand cryogenic safety analysis for testing superconducting radio frequency cavities
5. Patidar S.C., Gupta C., Khare P., Tiwari A., Patel H.K., Gilankar S.G., Agrawal G., Sinnarkar D.
PLC based control system for LN2 based reefer SHIVAY
1. Alka, Sahu K., Kumawat J., Krishna H., Verma S., Majumder S.K.
Bacterial load dependent wound healing progress study in mouse model using combined off-confocal Raman spectroscopy (OCRS) and swept source optical coherence tomography (SSOCT) system
2. Ansari A., Kumar M., Singhal H., Chakera J.A.
Selection of electron trajectory in high harmonic generation from neon filled cells using an annular laser beam
3. Bairwa M.K., Meena R.S., Singh R., Sharma S.K., Bhardwaj V., Kumar P., Bhawsar V., Upadhyaya B.N., Arya R., Bindra K.S.
Experimental investigation on performance of 500 W average power pulsed Nd:YAG laser with different Nd³⁺-doping concentration
4. Bhardwaj K., Singh S., Kumar V., Ram S.P., Tiwari V.B., Mishra S.R.
Excitation and detection of stimulated Raman transition in an atomic fountain
5. Bhawsar V., Kushwaha S., Shryner P., Khanwalkar J., Upadhyaya B.N., Arya R.
Digital control for power source for hex flash lamp pumped 1.5 kW long pulse Nd:YAG laser
6. Bhuvnesh, Singh C.P., Gupta P.K., Mukhopadhyay P.K., Dixit S.K., Bindra K.S.
New experimental observations in rains of solitons in ytterbium doped fiber laser
7. Bhuvnesh, Singh C.P., Gupta P.K., Hedao P., Mukhopadhyay P.K., Dixit S.K., Bindra K.S.
Development of an engineered 5W narrow line width all-fiber laser system at 1550 nm

8. Biswal R., Prakash O., Dixit S.K.
A study on design considerations of a femtosecond laser based advanced system for fiber-grating inscription
9. Chakraborty S., Malakar K.K., Verma Y., Raja S.
Theoretical study of power coupling efficiency of various Hermite-Gaussian (HG) modes for the Fabry Perot (FP) cavity in the arms of 10m prototype interferometer at RRCAT
10. Chakraborty S., Sahu K., Shivangi, Majumder S.K.
Preparation and evaluation of a light activable drug loaded composite film for antimicrobial photodynamic therapy application
11. Chakravarty U., Kuruvilla A., Shajahaan S., Ekka B., Upadhyaya B.N., Arya R., Bindra K.S.
Study of amplified spontaneous emission from thulium-doped fiber
12. Chakravarty U., Biswas S., Joshi M.P., Khare J., Mohan R., Mukherjee C., Singh R.
Utilizing high roughness of hydrophobic leaves as substrates for pulsed laser deposition based fabrication of Cu nanostructures for efficient solar-to-thermal conversion
13. Chatterjee S., Dube S., Majumder S.K.
Spectroscopic and fluorescence microscopic studies on role of serum albumin in cellular delivery of cycloimide purpurin-18, a near infrared absorbing photosensitizer in cancer cells
14. Chaturvedi M., Kumar S., Verma Y., Raja S.
Large aperture liquid crystal array characterization using polarimeter
15. Chaubey S., Biswal R., Sahu T.K., Haridas G., Prakash O., Dixit S.K.
Distributed gamma radiation detection at two different spatial locations using optical time domain reflectometry
16. Choudhary H., Mishra R.K., Agrawal P.K., Ansari M.S.
Design and simulation of 1 kV, 24 kJ/sec fourth order resonant converter based capacitor charging power supply
17. Daiya D., Patidar R.K., Moorti A., Benerji N.S.
Studies on spatio-temporal coupling in grating based laser pulse compressors
18. Deepak, Manoranjan S. P.
Pair production in time-dependent electric field at finite times
19. Deshmukh P., Sharma B., Satapathy S., Majumder S.K.
Synthesis and characterization of nano rods of NaGdF₄: a multimodal bioimaging contrast agent
20. Dubey V.K., Saxena P., Singh I.J., Singh A., Madan J.,
Multiplexed sensing using single point and distributed FBGs interrogation System
21. Gautam A., Tyagi P., Rao B.T, Rana L.B., Yadav R.K., Verma S., Kumar M., Kaul R.
Synthesis and characterization of noble-metal reducible oxide catalyst towards the development of sealed-off glass tube CO₂ laser
22. Jain B., Singh S., Bhardwaj K., Ram S.P., Pathak A.K., Tiwari S., Tiwari V.B., Mishra S.R.
On automation of cold atom interferometry setup
23. Jain R.K., Singh R., Bairwa M.K., Pawan Kumar, Meena R.S., Sharma S.K., Shukla V., Saini B.K., Narwat D., Upadhyaya B.N., Arya R., Bindra K.S.
Development of underwater laser cutting tool and technique for removal of central cobalt pin from 19-pin PHWR fuel bundle
24. Karn R., Mantri P., Soharab M., Saxena A., Bhatt R., Bhaumik I.
Investigation of the optical properties of Co-doped β -Ga₂O₃ crystal for saturable absorption application
25. Kaushik R., Pant B. C., Raja S.
Design optimization of an “egg-crate core” light weighted diffusion bonded zerodur mirror of 500 mm diameter
26. Khan K.M., Kumar V., Krishna H., Sahu K, Jain N.K., Majumder S.K.
Transmission Raman spectroscopy for authentication of active pharmaceutical ingredient (API) in hydroxychloroquine tablets
27. Khandelwal A., Chandra L.S.S., Sharma S., Sidam H,N., Samatham S., Rajagiri P., Chattopadhyay M.K.
Study of the temperature dependent terahertz dielectric properties of Mn-Zn ferrite using laser light
28. Khursheed M., Chakraborty S., George J., Raja S.
Study of multi-longitudinal mode threshold in a non-planar ring oscillator
29. Kumar A., Misra P., Upadhyaya B.N., Arya R., Bindra K.S.
Theoretical investigation on effect of pump wavelength on generation of high power CW output from Yb-doped fiber lasers
30. Kumar D., Ittoop M.O., Singh B., Tamboli D., Kaul R.
Development of 5 W, 81.36 MHz RF source for RF power module for CO₂ laser
31. Kumar S., Mahakud R., Kumar J., Saini J.K., Srivastava V.K., Prakash O.
Evaluation of surrounding refractive index sensitivity of modes of long period grating based chemical sensor

32. Kumar V., Khan M.K., Krishna H., Sahu K., Kumar Jain N., Majumder S.K.
Comparative evaluation of conventional back-scattered Raman spectroscopy and transmission Raman spectroscopy for monitoring authenticity of APIs in fixed-dose combination drug of ibuprofen and paracetamol
33. Kumar Y. P., Tiwari S.K., Singh S., Rishipal, Biswas A. K., Kamath M. P., Benerji N.S., Bindra K.S.
Long radius measurement of curved optical mirrors with increased sensitivity using a lateral shearing interferometer
34. Kushwaha S., Bhawsar V., Raju A.A., Narwat D., Sah S.K., Penumala S., Pant K.K., Khanwalkar J., Upadhyaya B.N., Arya R.
Power supply system for long pulse 1.5 kW Nd:YAG laser for material processing
35. Maity K., Chatterjee A., Porwal S., Kumar R., Dixit V.K., Sharma T.K.
Role of lattice mismatch and epilayer thickness on the dislocation density in hetero-epitaxially grown GaN
36. Maharwal N., Shrivastava R., Majumder S.K.
Light mediated compositional modulation of hormonal secretion from β cells
37. Malakar K.K., Chakraborty S., Pant B.C., Reddy T.S., Verma Y., Raja S.
High precision measurement of effective thermal expansion coefficients of low-coefficient of thermal expansion (CTE) materials using low-coherence interferometry
38. Malik A., Chaturvedi M., Pant B.C., Raja S.
Characterisation of piezo-actuated scanning stage for optical metrology systems using a Fabry-Perot interferometer
39. Mandal T., Arora V., Moorti A., Chakera J. A.
Investigation of complex transport phenomena of MeV fast electrons using novel multilayer targets in ultra-short ultra-intense laser foil interaction
40. Misra P., Padhi P.S.
Structural, optical and dielectric properties of ZnO/MgO multilayer nanolaminates grown by pulsed laser deposition
41. Mishra R.K., Choudhary H., Shah R.*, Kawade N.*, Agrawal P.K.*, Ansari M.S.
Development of drift corrected 6.25 kHz high voltage solid state pulse power supply for copper vapour laser
42. Mukherjee C., Rajiv K., Subrahmanyam V.V.V., Benerji N.S.
Development of high damage threshold anti-reflection and high reflection coated large area optics for high energy, high power laser
43. Mukhopadhyay P.K., Singh C.P., Gupta P.K., Nigam A., Buhvnes, Dixit S.K., Bindra K.S.
Investigation on self-starting of modelocked Mamyshev type fiber oscillator from noise
44. Mund S.S., Chakraborty S., Sahu K., Majumder S.K.
Effect of red light preconditioning on anti-pathogenic action of Lactobacillus acidophilus cell free supernatant
45. Nigam A., Singh C.P., Bhuvnes, Gupta P.K., Mukhopadhyay P.K., Dixit S.K., Bindra K.S.
Switchable single and twin pulse operation in modelocked ytterbium doped fiber oscillator
46. Pal S., Kamparath R., Subramaniam V.V.V., Mukherjee C., Benerji N.S.
Optical properties of thin film Ta₂O₅ fabricated by sol-gel method for high power laser application
47. Pal A., Kar S., Debnath C., Agrawal A.K., Verma S., Majumder S.K.
Bridgman growth of large diameter trans-stilbene crystal and fabrication of device element as well as its testing at Indus-2 for x-ray imaging applications
48. Patidar R.K., Daiya. D., Varshnay N. K., Singh A., Gurram S., Benerji N.S.
Surface contamination/oxide removal in Copper sheet using pulsed laser ablation
49. Patidar R.K., Daiya D., Varshnay N.K., Jain S., Singh A., Gurram S., Benerji N.S., Bindra K.S.
Development of two beam pre-amplifier system for seeding high energy Nd: glass laser system
50. Pradeep K., Gupta Singh C.P., Mukhopadhyay P.K., Dixit S.K., Bindra K.S.
Pulse shaping of dispersion-managed solitons by intracavity spectral filtering
51. Rajiv K., Yadav B.S., Rawat, Rana L B., Gautam A., Kumar M., Kaul R.
Design, development and testing of a compact & digitally controlled spark gap switch triggered He-free TEA CO₂ laser
52. Rana L.B., Yadav R.K., Kumar M., Kaul R.
Design and development of mechanical system for laser assisted tritium filled glass tube cutting and sealing
53. Rastogi M., Chakraborty S., Chowdhury A., Sahu K., Majumder S.K.
Investigations on photobiomodulation of stem cells using Raman spectroscopy
54. Saini P. K., Kumar J., Mahakud R., Kumar S., Prakash O., Nakhe S.V.

- Tilted fiber bragg grating cut-off mode based highly sensitive refractive index sensor
55. Saxena A., Soharab M., Karn R., Chandran V., Bhatt R., Bhaumik I.
Growth of cerium doped $Gd_3Ga_2Al_3O_{12}$ single crystal for optical application
56. Saxena M.K., Sharma R.K., Kishore J., Kumar S., Suman C.K., Prakash O., Nakhe S.V.
Effect of gamma radiation on performance of Agni Rakshak- a Raman optical fiber based distributed fire sensor system with 1 km sensing length
57. Sahu S., Singh A.J., Ahlawat S., Mukhopadhyay P.K., Dixit S.K., Bindra K.S.
Tunable nanosecond Ti:sapphire laser longitudinally pumped by in-house built DPSS green laser
58. Sharma N., Kamparath R., Rai S.K., Mukherjee C., Benerji N.S.
Optical properties of DC and pulsed-DC magnetron sputtered AlN thin films at different power levels
59. Sharma S.K., Singh R., T.R. Sajit Kumar, Bhardwaj V., Bairwa M.K., Meena R.S., Jain R.K., Kumar P., Upadhyaya B.N., Arya R., Bindra K.S.
Generation of 10 mJ of pulse energy from acousto-optic Q-switched Nd:YAG laser
60. Shukla V., Jain R.K., Singh R., Vinayak V., Rashankar, Kumar P., Meena R.S., Sharma S.K., Bairwa M.K., Saini B.K., Kumar P., Upadhyaya B.N., Arya R., Bindra K.S.
Development and deployment of periscopic optical viewing system for beam profile monitoring of infrared free electron laser
61. Singh C.H.P., Kumar U., Rai A.K., Mishra G.K., Paul C.P., Dixit S.K., Bindra K.S.
Laser cladding of tungsten carbide on SS 304 steel using LDED process
62. Singh R., Kumar P., Kumar A., Singh S., Muralidharan G, Ragoubady G., Kamath M. P., Gupta R. K., Benerji N. S., Bindra K.S.
Establishment of polishing technique for polishing all sides of large size neodymium glass slabs for high energy laser
63. Singh S., Bhardwaj K., Jain B., Ram S.P., Tiwari V.B., Mishra S.R.
On the effect of optical molasses temperature on flux in a cold atomic fountain
64. Singh V., Chaudhary A., Ram S.P., Pathak A., Tiwari S., Tiwari V.B., Mishra S.R.
Imaging of cold atoms on an atom-chip using grazing incidence absorption probe
65. Singh V, Supakar S., Tiwari S.K., Mukherjee C., Kamath M.P., Tiwari V.B., Mishra S.R.
Development of a single beam magneto-optical trap with a pyramidal mirror
66. Soharab M., Bhaumik I., Bhatt R., Karn R., Singh A.
Growth, optical investigation and laser performance of Nd doped $LuVO_4$ single crystals
67. Soni J. K., Rai A.K., Hedao P. S., Ganesh P., Ranganathan K., Paul C. P., Dixit S. K., Bindra K.S.
Effect of laser penning parameters on surface roughness, residual stress and hardness of laser based additively manufactured Inconel 718
68. Subrahmanyam V.V.V.V., Mukherjee C., K. Rajiv, Benerjee N.S.
Development of scatterometer and characterization of high reflecting multi layer dielectric coatings for scattering loss and surface roughness
69. Supakar S., Singh V., Tiwari V.B., Mishra S.R.
Effect of background Rb pressure on loading of magneto optical trap in ultra-high vacuum environment
70. Tiwari S.K., Kumar Y.P., Singh S., Muralidharan G., Biswas A.K., Kamparath R., Mukherjee C., Kamath M.P., Benerji N.S., Bindra K.S.
Design, development and laser based angle measurements of a pyramidal mirror
71. Upadhyay J., Kumar S., Saxena P., Arya R.
Single MOSFET based continuously variable slope ramp generator for electro-optic streak camera
72. Upadhyay J., Kumar S., Saxena P., Arya R.
Programmable versatile fast high voltage pulse generator with matched rise-fall times for paul trap experiments
73. Varshnay N.K., Singh A., Daiya D., Patidar R.K., Dongre O.B., Sharma S.K., Benerji N.S., Bindra K.S.
Development and characterization of large aperture pockels cell using ITO coated transparent electrodes
74. Yadav G., Kumar J., Kumar S., Kumbhkar U., Padiyar A.S., Mahakaud R., Saini P.K., Prakash O., Nakhe S.V.
Analysis and experimental studies on the strain sensitivity enhancement of fiber bragg grating sensor
75. Yadav R.K., Rana L.B., Murugan, Jayachandran N., Kumar M., Kaul R.
Control system for automated tube loading and fail safe operation of CO_2 laser assisted tritium filled glass tube cutting and sealing system

C.4. 37th National Symposium on Plasma Science and Technology (Plasma-2022), IIT Jodhpur, Jodhpur, Dec.12-14, 2022

1. Khan R.A., Moorti A., Chakera J.A., Tayyab M., Khan R.A., Bagchi S.
Development of an optical delay line for probing the high intensity laser foil interaction dynamics using optical reflectometry
2. Kumar A., Bhartiya S., Singh A., Jain S., Barnwal S., Singh A.K., Patidar R.K., Kohli D.K., Prasad Y.B.S.R., Benerji N.S., Singh M.K., Dixit S.K.
Enhancement of laser generated shocks in low density foam on Al- foil targets
3. Kumar M., Singhal H., Chakera J.A., Ansari A.
Time-frequency analysis of the attosecond pulse trains produced from high harmonics in argon filled cell
4. Mishra S., Bobbili S.R., Moorti A., Chakera J.A.
X-ray emission from collective betatron oscillations of electrons excited by chirped laser pulses in a plasma wiggler
5. Pathak M., Jain S.K.
Electromagnetic simulation of microwave coupling to resonant plasma cavity with ECR magnetic field configuration
6. Phadte D., Kommireddy M.B., Mishra S.R.
Numerical studies on controlled trapping and acceleration of electron bunch on a Gaussian density down ramp
7. Nath S.K., Sagdeo P.R.*, Ganguli T.
Structural and optical investigations of $(\text{Fe}_x\text{Sc}_{1-x})_2\text{O}_3$ solid solutions
8. Padhi P.S. Rai S.K., Srivastav H., Ajimsha R.S., Misra P.
High-k and low loss $\text{Al}_2\text{O}_3/\text{TiO}_2$ nanolaminates for new generation nano-electronics and energy storage applications
9. Pokhriyal A., Ghosh A.*, Sen S.*, Ghosh Haranath
Lifshitz transition and superconducting critical temperature in Fe-based compounds
10. Rao P.N., Swami M.K., Ghosh A., Rai S.K.
Influence of sputtering gas pressure on the residual stresses in niobium thin films
11. Selvamani R.*, Karmakar S., Gupta S.M., Sastry P.U.*
Structural phase transitions in lead free K, Nb-modified BaTiO_3 perovskite
12. Trivedi A., Khooha A., Singh A.K., Tiwari M.K.
Detection of low Z elements using synchrotron based total reflection x-ray fluorescence at BL-16, Indus-2
13. Yadav P., Deep P., Gupta S., Gupta R.K., Modi M.H.
Removal of carbon layer from top of boron carbide mirror like surface using RF plasma technique

C.5. 66th DAE-Solid State Physics Symposium, (DAE-SSPS 2022), Birla Institute of Technology Mesra, Ranchi, Jharkhand, Dec. 18 - 22, 2022

1. Baral M.
Crystal structure and physical properties of Co and Ni based half Heusler alloys: a combined theoretical and experimental study
2. Biswas A.*, Sarkar P.*, Modi M.H., Jha S.N.*, Bhattacharyya D.*
Depth profiling of nanoscale Cr/Sc and Cr/B₄C/Sc water window multilayer by GIXR and GIXRF techniques
3. Chandra J. Manekar M.
Hierarchical relaxation in the vortex matter of superconducting Nb₉₉Zr₀₁ alloy
4. Dhawan R., Yadav P.K.
Synthesis of gold thin films in nitrogen environment by DC magnetron sputtering
5. Karmakar S., Pathak S.K., Gupta S.M.
Inducing relaxor characteristics in morphotropic phase boundary PMN-PT composition for micro-positioner application
6. Nand M.*, Kesarwani R.*, Tripathi S.*, Kumar Y.*, Urkude R.*, Mandal S.K.*, Pothana N., Jha S.N.*

C.6. International Union of Materials Research Societies – International Conference in Asia– 2022 (IUMRS-ICA-2022), Indian Institute of Technology Jodhpur, Dec. 19-23, 2022

1. Baraik K., Banik S., Baral M., Paul S., Lal S., Garg S.R., Garg S.K., Raghuwanshi V.K., Ganguli T.
Planar undulator based Angle Resolved Photoelectron Spectroscopy (ARPES) beamline at Indus-2 for high resolution electronic structure studies
2. Bhakar A., Gupta P., Ganguli T., Rai S.K.
Determination of crystallite size distributions from various diffraction peak shapes simulated using Pseudo-Voigt profile function
3. Bhattacharya J., Chakrabarti A.
Spin polarized transport properties of Heusler alloy based magnetic tunneling junctions: an ab-initio study
4. Das A., Bhattacharjee J., Ganguli T., Singh S.D.
Improvement in high temperature chemical stability and reduction in degradation due to exposure to ambient conditions of BaSnO_3 by chromium substitution
5. Dutt R., Chakrabarti A.

- Ab-initio study of half Heusler chalcogenides and their transport properties
6. Dutt S., Sagdeo A.
Single crystal growth of hybrid perovskites $\text{MAPb}(\text{Br}_x\text{Cl}_{1-x})_3$ through modified ITC method
 7. Gupta N., Gupta M.*, Rai S.K., Kumar D.*, Gupta P.
Effect of preparation conditions on the thermal stability and in-plane magnetic anisotropy of CoFeB and W/CoFeB films
 8. Khare J., Karwal S.*, Rai S.K., Joshi M.P.
Analysis of band offset at CZTS/CdS interface
 9. Khan S., Khan S., Singh A., Porwal S., Sharma T.K.
Exciton-trion dynamics in full coverage monolayer MoS_2 using two colour ultrafast pump probe reflectivity
 10. Mahapatra A., Ajimsha R.S., Kumar D., Sharma A.*, Ittoop M.O., Shaikh A., Sankar P.R., Misra P.
Hybrid ZnO:PVDF based free standing piezoelectric nanogenerator for vibrational energy harvesting and sensor applications
 11. Singh M.K., Kumar K.V.A.N.P.S., Rao P.N., Rai S.K., Singh R., Singh M.K., Kumar Y.P., Kamath M.P., Nand M., Jha S.N., Yadav D.P., Sharma T.K.
Deposition of titanium nitride thin films targeting ultra-high vacuum applications in particle accelerators
 12. Taya P., Vashisht G., Sahu T.K., Haridas G., Tyagi M., Dixit V.K., Sharma T.K.
Spatial variation of gamma photon flux density measured by an indigenously developed CsI (Tl) coupled GaAs detector
 13. Vashisht G., Porwal S., Khamari S.K., Kumar R., Khakha A., Kamparath R., Mukherjee C., Sharma T.K., Dixit V.K.
Probing the exciton-photon coupling strength in InGaAs/GaAs quantum micro-cavity structure
 14. Vijay K., Vavilapalli D.S.*, Arya A.*, Kumar K.*, Banik S.
Electronic and magnetic properties of a 2D Van der Waal ferromagnetic semiconductor CrGeTe_3
- C.7. Other Seminar/Conference Presentations**
1. Agrawal S.K., Kant N., Siddiqui A.U.*, Raju D.V.S.*, Ansari M.A., Acharya S.*, Deshpande P.P., Gupta R.K., Chaube R.K.*, Bhanage V.P.
Development of machine vision based inspection system for inspection of chamfer on clad tube
International Conference on Characterization & Quality Control of Nuclear Fuel (CQCNF-2022), Nuclear Fuel Complex, Hyderabad, Nov. 17-19, 2022
 2. Alam M.A., Trivedi A., Tiwari M.K.
X-ray absorption fine structure study of Nickel ion implanted crystalline silicon substrate
18th International Conference on X-Ray Absorption and Fine Structure HYBRID (XAFS 2022), University of Sydney, Australia, Jul. 10-15, 2022
 3. Bhattacharya J., Chakrabarti A.
In search of an alternative to MgO as a spacer layer in a Heusler alloy based magnetic tunneling junction: a DFT study
11th International Conference on Fine Particle Magnetism (ICFPM), Yokohama, Oct. 16-21, 2022
 4. Chaudhari S., Thakur A.*, Rajan A.
Securing digital information using cryptography techniques to enhance IT security
4th International Conference on Machine Learning, Image Processing, Network Security and Data Sciences (MIND-2022), Maulana Azad National Institute of Technology, Bhopal, Dec. 21-22, 2022
 5. Dutt S., Rambadey O.V.*, Sagdeo P.R.*, Sagdeo A.
Behavior of Raman frequency shift and line width studied on mix halide hybrid perovskites, $\text{MAPb}(\text{Br}_{1-x}\text{Cl}_x)_3$
IX International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2022), UGC-DAE CSR & DAVV, Indore, Dec. 13-17, 2022
 6. Gupta A., Patil J., Soni S., Rajan A.
Email spam detection using multi-head CNN-BiGRU network
International Conference on Advanced Network Technologies and Intelligent Computing (ANTIC-2022), Institute of Science, Banaras Hindu University, Varanasi, Dec. 22-24, 2022
 7. Gupta N., Kumar D.*, Gupta M.*, Rai S.K., Gupta P.
Influence of growth conditions on the structure and magnetic properties of magnetron sputtered CoFeB alloy films
11th International Conference on Fine Particle Magnetism (ICFPM), Yokohama, Oct. 16-21, 2022
 8. Priya P., Raut S.D.*, Ansari M.A., Vishwakarma S.C., Deshpande P.P., Bhanage V.P.
Development of automated machine vision system for slot inspection of FBTR top plug
International Conference on Characterization & Quality Control of Nuclear Fuel (CQCNF-2022), Nuclear Fuel Complex, Hyderabad, Nov. 17-19, 2022
 9. Rathore R., Singhal H., Pathak A.*, Gupta M.*, Chakera J. A., Mittal R. *, Kulkarni R. *, Thamizhavel A. *, Said A. H. *, Bansal D. *



- Probing the amplitude mode dynamics in EuTe₄ using time resolved x-ray diffraction
IX International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2022), UGC-DAE CSR & DAVV, Indore, Dec. 13-17, 2022
10. Sahani P.K., Haridas G., Kulkarni M.S.*, Sahu R.K.
Radiation protection at synchrotron radiation beamlines-challenges
International Conference on Occupational Radiation Protection: Strengthening Radiation Protection of Workers – Twenty Years of Progress and the Way Forward, Geneva, Switzerland, Sept. 5-9, 2022
11. Siddiqui U., Agrawal S.K., Deshpande P.P., Patel A., Acharya S., Chaube R.K., Bhanage V.P.
Triangulation based metrology system for end cap of PHWR fuel element
International Conference on Characterization & Quality Control of Nuclear Fuel (CQCNF-2022), Nuclear Fuel Complex, Hyderabad, Nov. 17-19, 2022
12. Singhal H., Kumar M., Ansari A., Chakera J. A.
Performance of an in-house developed double-solenoid magnetic bottle photoelectron spectrometer for attosecond metrology
9th Theme Meeting on Ultrafast Sciences (UFS-2022), Indian Institute of Sciences Education and Research (IISER- TVM), Thiruvanthapuram, Nov. 3-5, 2022
13. Verma S., Bitra V.S.*, Rao T.B.
Indigenous development of automated cost-effective system for SERS measurements with data analysis and compound prediction
IX International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2022), UGC-DAE CSR & DAVV, Indore, Dec. 13-17, 2022
14. Vijay K., Banik S.
Tuning the electronic and magneto-transport properties in kagome semimetal CoSn by Fe doping
National Conference on Electronic Structure (NCES 2022), Goa University, Goa, Nov. 14-16, 2022
- A., Patel H., Gilankar S., Kush P.K., Khare P.,
“Chinese patent on portable refrigeration system based on liquid nitrogen for transporting refrigerated goods”, Chinese Patent No. ZL201810504018.3, dated 25.10.2022

Note: “*” indicates author affiliation other than RRCAT Indore.

D. Book Chapter

1. Nakhe S.V., Dixit S.K.
Laser based technologies and their applications: DAE's accomplishments
Atomic energy in India: achievements since independence
A.K. Tyagi and P.R. Vashudeva Rao (Ed.), Mumbai, HBNI, pp 237-257 (2022)

E. Patent

1. Patidar S.C., Arzare D., Ghosh R., Singh L., Lakshminarayanan A., Vora H., Saxena P., Jain A., Tiwari