

A. Journal Articles

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101. Upadhyay R., Badapanda M.K., Tripathi A., Lad M.
Low voltage high current modular DC power supply for solid state RF amplifiers
Journal of Instrumentation, 16, P03010 (2021)
102. Vavilapalli D.S.*, Banik S., Kandasami A.*, Rao M.S.R.*, Singh S.*
Nitrogen-ion implantation induced bandgap tailoring in multifunctional brownmillerite KBiFe₂O₅
ECS Journal of Solid State Science and Technology, 10, 061010 (2021)
103. Yadav P.K., Gupta R.K., Choubey A.K., Ali S., Goutam U.K.*, Modi M.H.
Carbon removal from a mirror-like gold surface by UV light, RF plasma, and IR laser exposure: a comparative study
Applied Optics, 60, 89–97 (2021)
104. Yadav S., Puntambekar T.A., Varde P.V.*
Modeling and control of transverse coupled bunch mode levels in Indus-2 using artificial neural network
Review of Scientific Instruments, 92, 034704(1-11) (2021)

B. Invited Talks

1. Banerjee A.
Lectures on basics of quantum optics
IIA Course II on Quantum Metrology during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10–11, 2021
2. Banik S.
Photoemission studies on spintronic materials using Indus synchrotron.
E-workshop for skill development on energetic beam technology: from materials engineering to diagnostics, Amity University, Noida, Jun. 21–25, 2021
3. Dhamgaye V.
Material modification and micro-fabrication using synchrotron x-rays
International Conference on Light Matter Interaction (ICLMIN-2021), IGCAR, Kalpakkam, May 19–21, 2021



4. Dixit S.K.
Optical fiber sensors and their applications
ILA Course I on LASER: A Versatile tool for Research and Technology Development during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10-11, 2021
5. George J.
Squeezed light sources
ILA Course II on Quantum Metrology during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10-11, 2021
6. Kamal C.
Hydrogen bonding arrangement of water on TiO₂ (110) surface from core-level binding energy
CONEXS Conference 2021, Newcastle University, Newcastle upon Tyne, England, Mar.17-19, 2021
7. Modi M.H.
Soft x-ray reflectivity, absorption and emission spectroscopy techniques on soft x-ray reflectivity beamline of Indus-2, versatile tools to study optical, electronic and structural properties
E-conference on synthesis, characterization, & applications of emerging materials with special reference to sustainable technologies, Jabalpur Engineering College, Jabalpur, Feb. 22-24, 2021
8. Nayak M.
Overview of INDUS synchrotrons for condensed matter
Webinar series on Indus synchrotrons and its utilization for condensed matter research, IISER, Berhampur, Feb. 2-4, 2021
9. Nayak M.
1D periodic nano-scaled layered structure: interfacial phenomena and its application for manipulation of x-rays,
Webinar series on Indus synchrotrons and its utilization for condensed matter research, IISER, Berhampur, Feb. 2-4, 2021
10. Nayak M.
Soft x-ray reflection spectroscopy: a novel technique to map interface of nano-scale layered structured materials
Webinar series on Indus synchrotrons and its utilization for condensed matter research, IISER, Berhampur, Feb. 2-4, 2021
11. Nayak M.
Science and technology with x-rays
One day national webinar on science and technology with x-rays, Keonjhar Autonomous College, Odisha, Feb. 20, 2021
12. Raja S.
Introduction to Optomechanics
ILA Course II on Quantum Metrology during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10-11, 2021
13. Ram S.P.
Cold atomic clock: modern time standards
ILA Course II on Quantum Metrology during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10-11, 2021
14. Tiwari V.B.
Introduction to atom cooling
ILA Course II on Quantum Metrology during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10-11, 2021
15. Tiwari V.B.
Cold atom interferometer: application to precision measurements
ILA Course II on Quantum Metrology during 29th DAE-BRNS National Laser Symposium (NLS-29), SVVV, Indore, Feb. 10-11, 2021

C. Seminar/Conference Presentations

C.1. 29th DAE-BRNS National Laser Symposium (NLS-29), Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV), Indore, Feb. 12-15, 2021

1. Ahlawat S., Singh A., Mukhopadhyay P.K., Singh R., Bindra K.S.
Nanosecond laser texturing with in-situ glass particle deposition on steel mesh for oil water separation
2. Ansari A., Kumar M., Singhal H., Chakera J.A.
Study of spatio-temporal reshaping of ultrashort laser pulse due to plasma defocusing
3. Bairwa M.K., Bhardwaj V., Jain R.K., Shukla V., Sharma S.K., Singh R., Saini B.K., Paul B., Kumar P., Ekka B., Kumar P., Beshra J., Raju A.A., Sah S.K., Bhawsar V., Khanwalkar J., Arya R., Upadhyaya B.N., Bindra K.S.
Laser cutting of up to 30 mm thick SS316L using 500 W average power pulsed Nd:YAG laser for nuclear field applications
4. Barnwal S., Nigam S., Aneesh K., Sharma M.L., Prasad Y.B.S.R., Bindra K.S.
Energy enhancement in capillary discharge soft x-ray laser operating at 46.9 nm
5. Bhardwaj K., Ram S.P., Sarkar S., Tiwari V.B., Mishra S.R.
Loading a magneto-optical trap in UHV using a Rb atomic beam source
6. Bhardwaj V., Kumar P., Kumar P., Bairwa M. K., Singh R., Sindal B.K., Yadav D.P., Upadhyaya B.N., Bindra K. S.
Development of UHV compatible SS 316L-Kovar welding joint using fiber coupled pulsed Nd:YAG laser for accelerator applications
7. Bhawsar V., Kushwaha S., Penumala S., Khanwalkar J., Upadhyaya B.N., Arya R.
Programmable power supply for laser based welding system

8. Bhuvnesh, Singh C.P., Gupta P.K., Sahu S., Mukhopadhyay P.K., Bindra K.S.
Development and characterization of a 40 W narrow line width all-fiber multistage amplifier at 1064 nm.
9. Bhuvnesh, Singh C.P., Gupta P.K., Hedao P., Sahu S., Mukhopadhyay P.K., Bindra K.S.
Development and characterization of a 1 W engineered narrow line width all-fiber multistage amplifier system at 1550 nm.
10. Biswal R., Prakash O., Dixit S.K.
Studies on second harmonic ultraviolet generation at 255 nm from a low temperature (~500 °C) copper vapour laser with different optical resonators
11. Bundel H.R., Tiwari S., Singhal H., Kumar M., Chakera J.A., Bhanage V.
Automation of delay scan photoelectron spectroscopy experiments
12. Chaubey S., Saxena M. K., Kishore J., Sahu T.K., Haridas G., Prakash O., Dixit S.K.
Investigation of gamma radiation response of multimode graded index fiber in visible region for distributed dosimetry applications
13. Chakravarty U., Kumar A., Kuruvilla A., Ashok A., Jain R.K., Singh R., Upadhyaya B.N., Bindra K.S.
Generation of more than 100 W of CW output power from all-fiber Tm-doped fiber laser
14. Chakravarty U., Khare J., Joshi M.P., Mukherjee C., Singh R.
Pulsed laser deposition assisted fabrication and characterization of bio-inspired plasmonic nanostructures for efficient absorption of broadband optical radiation
15. Choubey A., Jinoop A.N., Ali S., Mishra S.K., Paul C.P., Bindra K.S.
Effect of melt pool geometry on laser polishing of laser additive manufactured SS
16. Chouhan H.S., Joshi O.P., Singh B., Ansari M.S.
Development of EPICS based control system for Nd:Glass laser amplifier
17. Daiya D., Patidar R.K., Amalraj S.W., Moorti A., Kamath M.P., Sharma S. K., Benerji N.S., Bindra K.S.
A compact intensity auto-correlator for ultra-short laser pulse width measurement
18. Dalal A., Srivastava A., Alka, Kumar N., Krishna H., Majumder S.K.
Studies on Raman spectroscopy of pure ghee and vanaspati
19. Debnath C., Verma S., Kar S., Tiwari V.S., Karnal A.K.
Linear and 3rd order nonlinear optical properties of LiNbO₃/PMMA nanocomposite
20. Dubey V.K., Saxena P., Vivek G., Singh I., Kumar J., Prakash O., Dixit S.K., Arya R., Nakhe S.V.
Intensity referencing in fibre optics based temperature sensing
21. Gupta P.K., Singh C.P., Mukhopadhyay P.K., Bindra K.S.
All-normal dispersion ytterbium doped fiber laser mode locked by nonlinear multimode interference based saturable absorber
22. Gupta R.K., Rai A.K., Nagpure D.C., Biswal R., Ganesh P., Rai S.K., Ranganathan K., Bindra K.S., Kaul R.
Suppression of stress corrosion cracking susceptibility of shear cut surface of 304L stainless steel through laser shock peening
23. Kamalesh T.*, Karuppasamy P.*, Pandian M.S.*, Ramasamy P.*, Verma S., Karnal A.K.
Bulk growth of organic non-linear optical triphenylphosphine oxide 4-nitrophenol (TP4N) single crystals by Sankaranarayanan-Ramasamy (SR) method
24. Kar S., Debnath C., Verma S., Tiwari V.S., Karnal A.K.
Synthesis of copper doped lithium tetraborate (Cu:Li₂B₄O₇) nanoparticles and their characterization for structural and thermoluminescence properties
25. Karmakar S., Selvamani R.*, Gupta S.M., Tiwari V.S., Karnal A.K.
Oxygen vacancies effect on ferroelectric and dielectric properties in Sr_{0.5}Ba_{0.5}Nb₂O₆ Ceramic for micro-positioner
26. Karuppasamy P.*, Kamalesh T.*, Pandian M.S.*, Ramasamy P.*, Verma S., Karnal A.K.
Growth of bulk size organic single crystal by a novel immersing ampoule: Sankaranarayanan-Ramasamy (ISR) method for NLO applications
27. Kumar A, Misra P., Jain R.K., Singh R., Bhardwaj V., Upadhyaya B.N., Bindra K. S.
Development of compact engineered 500 W of single transverse mode all-fiber Yb doped CW fiber laser
28. Kumar A., Barnwal S., Sharma M.L., Singh A., Jain S., Kulkarni A.P., Nigam S., Prasad Y.B.S.R., Benerji N.S., Bindra K.S.
X-ray spectral measurements from laser plasmas using a gated micro-channel plate detector
29. Kumar J., Mahakud R., Kumar S., Kumbhkar U., Prakash O., Dixit S.K., Nakhe S.V.
High temperature chirped FBG fabrication by thermal stretching of regenerated FBG
30. Kumar M., Ansari A., Singhal H., Chakera J.A.
Complete temporal reconstruction of attosecond pulse trains from high-harmonic generation in an argon filled cell

31. Kumar V., Shrivastava R., Kumawat J., Kumar N., Maru S.*, Majumder S.K.
Raman spectroscopy for dissolution testing of paracetamol tablets: an exploratory study
32. Kumar Y. P., Gupta S., Pai S., Daiya D., Singh I., Rishipal, Biswas A.K., Singh A., Kamath M.P., Jain R., Saxena P., Benerji N.S., Bindra K.S.
Development of automated polarization phase shifting laser Fizeau Interferometer for flatness measurement of polished optical surfaces
33. Mahakud R., Kumar J., Chaube S., Srivastava V.K., Kumar S., Kumbhakar U., Prakash O., Dixit S. K.
Inscription of long period fiber grating near phase matching turning point by frequency doubled copper vapour laser
34. Mandal T., Arora V., Moorti A., Uphadhyay A., Chakera J.A.
Study of laser polarization dependant JxB acceleration in relativistic ultrashort laser foil interaction
35. Mandal T., Arora V., Moorti A., Chakera J.A.
Study of fast electron transport in ultrahigh intensity laser matter interaction by 2D imaging of Cu K α x-rays
36. Mishra R.K., Kumar J., Naphade D., Agrawal P.K., Ansari M.S.
Performance characterization of IGBT based high voltage pulse power supply of CVL MOPA system for long hour operation
37. Mishra S., Rao B.S., Moorti A., Chakera J.A.
Tunable electron beams from laser wakefield acceleration by controlled injection
38. Pathak A.K., Tiwari S., Deshpande P.P., Bhanage V.
Development of control software for cold atom interferometry experiments
39. Paul N., Singh C.P., Gupta P.K., Mukhopadhyay P.K., Bindra K.S.
Investigation on rectangular dark pulse in mode-locked fiber laser
40. Rathore R., Singhal H., Roychowdhury R., Dixit V.K., Sharma T.K., Chakera J.A.
Ultra-fast lattice dynamics in GaP/Ge(111) heterostructure measured with time resolved x-ray diffraction
41. Sahu K., Kumar V., Kumar M.A., Taranikanti M.*, Srinivas M, Nakhe S.V., Majumder S.K.
Evaluation of an indigenously developed ultraviolet-C light based wide area disinfection device for inactivation of SARS-CoV-2 virus and pathogenic bacteria
42. Saini B.K., Bairwa M.K., Jain R.K., Raju A.A., Singh R., John B., Gopal B., Paul B., Beshra J., Bhawsar V., Ekka B., Bhardwaj V., Shukla V., Arya R., Upadhyaya B.N., Bindra K.S.
In-situ laser cutting for repair/replacement of injection valves of emergency core cooling system at KKNPP-2 reactor
43. Saini V.K., Tiwari G.N., Dixit S.K.
Three-Step Lithium photoionization by optogalvanic spectroscopy
44. Sarkar S., Ram S.P., Bhardwaj K., Tiwari V.B., Mishra S.R.
Trapping of laser cooled atoms in time averaged adiabatic potentials
45. Saxena A., Karn R., Darshan P.A.*, Soharab M., Bhatt R., Bhaumik I., Sajith B.K., Karnal A.K.
Growth and investigation of thermo-optic coefficient of cesium triborate single crystals for nonlinear optical application
46. Sharma A.K.
Volumetric propagation studies of ultrashort pulsed beams in nonlinear dispersive and aberrated optical systems
47. Sharma S.K., Bairwa M.K., Bhardwaj V., Paul B., Singh R., Bhawsar V., Raju A.A., Narwat D., Jain R.K., Kumar P., Sah S.K., Kushwaha S., Shryner P., Khanwalkar J., Arya R., Upadhyaya B.N., Bindra K.S.
Development of 1.5 kW average power and 30 kW peak power long pulse Nd: YAG laser
48. Sharma S.K., Singh Y., Bhaumik I., Karnal A.K.
A technique for directly cutting type-I SHG plates from as-grown KDP crystal and assessment of its orientation
49. Sherif Z.N.*, Lasalle B. S.I.*, Kamalesh T.*, Karuppasamy P.*, Verma S., Pandian M.S.*, Ramasamy P.*
Crystal growth and characterization of semi-organic piperazinium tetrachlorozincate monohydrate (PTCZ) single crystal for nonlinear optical (NLO) applications
50. Shrivastava R., Kumawat J., Srivastava A., Kumar N., Krishna H., Majumder S.K.
Raman spectroscopy based detection of microalbuminuria: a feasibility study
51. Shukla V., Paul B., Bairwa M.K., Bhardwaj V., Singh R., Vachhani D., Shukla R., Pant K.K., Panwar C.B., Narwat D., Arya R., Upadhyaya B.N., Bindra K.S.
Development of 0.9 J pulse energy microsecond pulse Nd:YAG laser and its application to cutting of MEMS devices from ceramic substrate
52. Singh A.J., Sahu S., Ahlawat S., Mukhopadhyay P.K., Bindra K.S.
Effect of reabsorption losses in Q-switched Yb:YAG laser

53. Singh R., Kumar A., Kuruvilla A., Singh R., Upadhyaya B.N., Bindra K.S.
Generation of 50 W of output power at eye safe wavelength of 1600 nm from all fiber Er-doped fiber laser using MOPA configuration
54. Singh S., Jain B., Ram S.P., Tiwari V.B., Mishra S.R.
Launching of laser cooled Rb atoms in atomic fountain geometry
55. Singh V., Tiwari V.B., Mishra S.R.
Studies on optimization of optical pumping of cold 87Rb atoms using Stern-Gerlach (SG) technique
56. Singh Y., Chowdhury A., Dasgupta R., Majumder S.K.
Study of the effects of short term hyperglycemic exposures on human red blood cells
57. Srivastava A., Dalal A., Krishna H., Majumder S.K.
Raman spectroscopy for monitoring temperature-induced changes in mustard oil
58. Srivastav V. K., Mahakud R., Kumar J., Kumar S., Kumbhkar U., Prakash O., Dixit S.K.
Studies on the thermal behaviour of different resonant modes of a long period grating
59. Tayyab M., Bagchi S., Moorti A., Chakera J.A., Sharma M.L., Aneesh K., Nigam S.
Laser-plasma accelerated proton beam focussing optics using high voltage pulsed power solenoid
60. Tiwari G.N., Shrivastava V.K., Mishra R.K., Dixit S.K.
Studies on the high beam quality green and yellow radiation of a 40 W copper bromide laser
61. Tiwari S.K., Singh S., Kumar Y.P., Rishipal, Muralidharan G., Biswas A.K., Kamath M.P., Benerji N.S., Bindra K.S.
Detection of refractive index inhomogeneity in large size Neodymium (Nd)-doped phosphate glass slabs using a small size laser beam
62. Upadhyay J., Kumar S., Saxena P., Arya R.
Static mode performance testing of a streak tube
63. Vashisht G., Pal S., Khamari S.K., Kamparath R., Khakha A., Kumar R., Mukherjee C., Dixit V.K., Sharma T.K.
Design and development of monocrystalline AlGaAs/GaAs DBR mirrors with reflectivity exceeding 99% at 1064, 1100 and 1550 nm photonic band

C.2. Other Seminar/Conference Presentations

1. Maurya V.K., Chaudhari S., Sirohi D.K., Tomar S., Rajan A., Rawat A.
Inimitable approach to detect & quarantine Botnet malware infections in network
IEEE Second International Conference on Secure Cyber Computing and Communications (ICSCCC-2021), Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, May 21-23, 2021
2. Patil J., Tokekar V.*, Rajan A., Rawat A.
Port scanning based model to detect malicious TCP traffic and mitigate its impact in SDN
IEEE Second International Conference on Secure Cyber Computing and Communications (ICSCCC-2021), Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, May 21-23, 2021

Note: '*' indicates author affiliation other than RRCAT Indore.