



A. Journal Articles

1. Arora P., Chattopadhyay M.K., Roy S.B.
Magnetocaloric effect in MnSi
Applied Physics Letters **91**, 062508-1-3 (2007)
2. Aziz F.*, Chari R., Oak S.M.
Experimental demonstration of fiber differential spectral technique for monitoring small fluctuations in ultrashort laser pulses
Optical Engineering **46**, 073601-1-6 (2007)
3. Babu S. S.*, Babu P.*, Jayasankar C.K.*, Joshi A.S., Speghini A.*, Bettinelli M.*
Laser transition characteristics of Nd³⁺-doped fluorophosphates laser glasses
J. Non-Cryst. Solids **353**, 1402 (2007)
4. Banerjee Arup
Collective oscillations of a Bose-Fermi mixture: effect of unequal masses of Bose and Fermi particles
Physical Review A **76**, 023611-1-7 (2007)
5. Banerjee Arup, Chakrabarti A., Ghanty T.K.*
Time-dependent density functional theory calculation of Van der Waals coefficient of sodium clusters
J. Chemical Physics **127**, 134103-1-7 (2007)
6. Banerjee Arup, Harbola M.K.*
Comparison of Van der Waals coefficient C_6 of sodium clusters obtained via spherical jellium background model and all electron ab initio method
J. Computational Methods in Science and Engineering **5**-6 (2007)
7. Barman S.R.*, Banik S.*, Shukla A.K.*, Kamal C., Chakrabarti A.
Martensitic transition, ferrimagnetism and Fermi surface nesting in Mn₂NiGa
Europhysics Letters **80**, 57002 (2007)
8. Bartwal K.S., Kar S., Kaithwas N.*, Deshmukh M.*, Dave M.*, Lalla N.P.*, Ryu H.*
Synthesis and characterization of Y₃Al₅O₁₂ nanocrystals
Advanced Materials Research **26-28**, 667-670 (2007)
9. Chatterjee S., Kumar P.Y.
Simple technique for the fabrication of Penta prism with high accuracy right angle deviation
Applied Optics **46**, 6520-6525 (2007)
10. Chaubey S., Joshi P., Kumar M., Arya R., Nath A.K., Kher S.
Development of long period grating sensors for temperature monitoring
Sadhana **32**, 513519 (2007)
11. Choubey R.K.*, Khattak B.Q., Kar S., Ramshankar P., Sen P.*, Bartwal K.S.
Influence of doping on OH absorption in LiNbO₃ crystals
Crystals Res. Technology **42**, 718-722 (2007)
12. Dasgupta, R., Ahlawat, S., Gupta, P.K.
Trapping of micron-sized objects at a liquid-air interface
J. Optics A: Pure and Applied Optics **9**, 189-95 (2007)
13. Delerue N.*, Dixit S. et al
A laser-wire system for the international linear collider
Pramana **69**, 1147-1150 (2007)
14. Ganeev R.A.*, Singhal H., Naik P.A., Chakravarty U., Arora V., Chakera J.A., Raghuramaiah M., Khan R.A., Kumbhare S.R., Kushwaha R.P., Gupta P.D.
Generation of high order harmonics of femtosecond radiation from the surface of various media
Optics & Spectroscopy **103**, 795 (2007)
15. Ganeev R.A.*, Naik P.A., Singhal H., Chakravarty U., Arora V., Chakera J.A., Khan R.A., Raghuramaiah M., Kumbhare S.R., Kushwaha R.P., Gupta P.D.
Generation of high harmonic laser plasma formed on the surface of a silver target
Optics and Spectroscopy **103**, 831 (2007)
16. Ganeev R.A.*, Singhal H., Naik P.A., Gupta P.D.
Single harmonic enhancement at high harmonic generation in GaAs plasma
Quantum Electronics **37**, 827 (2007)
17. Ganguli T., Porwal S., Sharma T., Ingale A., Kumar S., Tiwari P., Balamurugan A.K.*, Rajagopalan S.*, Tyagi A.K.*, Chandrasekaran K.S.*, Arora B.M.*, Rustagi K.C.*
Growth of strained ZnSe layers on GaAs substrates by pulsed laser deposition carried out in an off-axis deposition geometry
Thin Solid Films **515**, 7834-7842 (2007)
18. George, J., Mehandale, S.C., Sigh, B.P.*, Nathan, T.P.S.*
A study of the effect of axial mode spacing on the single longitudinal mode performance in end pumped solid-state lasers
Optics & Laser Technology **39**, 1193-8 (2007)
19. Ghosh H.
Excited state nonlinear optics of quasi-one-dimensional Mott-Hubbard insulators
Phys. Rev. B **75**, 235127- (2007)



20. Gupta P.K., Kush P.K., Tiwari A.*
Second law analysis of counter flow cryogenic heat exchangers in presence of ambient heat-in-leak and longitudinal conduction
International J. Heat and Mass Transfer **50**, 4754476 (2007)
21. Gupta, S.K., Niranjana, M.S.*, Kak A.
A study on the effect of brazing time on element diffusion silver diffusion into the base metal was examined for different brazing times
Welding Journal **86**, 47-50 (2007)
22. Jayabalan J., Singh A., Chari R., Oak S.M.
Ultrafast third-order nonlinearity of silver nanospheres and nanodiscs
Nanotechnology **18**, 315704-1-6 (2007)
23. Jejurikar S.M.*, Koinkar P.M.*, More M.A.*, Joag D.S.*, Adhi K.P.*, Kukreja L.M.
Field emission studies of nano structured c-axis oriented GaN film on SiO₂/Si(100) by pulsed laser deposition
Solid State Comm. **144**, 296-299 (2007)
24. Jejurikar S.M.*, Banpurkar A.G.*, Bankar D.N.*, Adhi K.P.*, Kukreja L.M., Sathe V.G.
Growth temperature and N₂ ambient pressure dependent crystalline orientations and band-gaps of pulsed laser deposited AlN / (0001) sapphire thin films
J. Crystal Growth **304**, 257-267 (2007)
25. Joshi P., Sharma R.K., Kishore J., Kher S.
Fabrication of photonic crystal fibre
Current Science **93**, 1214-1215 (2007)
26. Kadir A.*, Ganguli T., Kumar R., Gokhale M.R.*, Shah A.P.*, Ghosh S.*, Arora B.M.*, Bhattacharya A.*
The role of hydrostatic stress in determining the bandgap of InN epilayers
Applied Physics Letters **91**, 111913-1-3 (2007)
27. Kaithwas N.*, Deshmukh M.*, Kar S., Dave M.*, Lalla N.P.*, Ryu H.*, Bartwal K.S.
Preparation of Y₃Al₅O₁₂ nanocrystals by low temperature glycol route
Crystal Res. Technology **42**, 991-994 (2007)
28. Kamal C., Chakrabarti A.
Comparison of electronic and geometric structures of nanotubes with subnanometer diameters: a density functional theory study
Physical Review B **76**, 075113 (2007)
29. Kar S., Bartwal K.S.
Growth optimization of Li₂B₄O₇ crystals and their characterization
Crystal Growth & Design **7**, 2522-2525 (2007)
30. Karmakar S.*, Kulkarni N.V.*, Sathe V.G.*, Srivastava A.K., Shinde M.D.*, Bhoraskar S.V.* Das A.K.*
A new approach towards improving the quality and yield of arc-generated carbon nanotubes
J. Physics D: Applied Physics **40**, 4829-4835 (2007)
31. Kher S., Joshi P., Sharma R.K.
Radiation effects on pure silica core multimode fibres: radiation hardness issues for fibre optic sensors for particle accelerators and nuclear power stations
Nuclear Instruments & Methods in Physics Research: Section A **378**, 345-347 (2007)
32. Kheraj V.*, Panchal C.J.*, Patel P.K.*, Arora B.M.* Sharma T.K.
Optimization of facet coating for highly strained InGaAs quantum lasers operating at 1200nm
Optics & Laser Technol. **39**, 1395-1399 (2007)
33. Kim Kwang-Je*, Kumar V.
Electron beam requirements for a three-dimensional Smith-Purcell backward-wave oscillator for intense terahertz radiation
Physical Review Special Topics - Accelerators and Beams **10**, 080702-1-8 (2007)
34. Late D.J.*, More M.A.*, Misra P., Singh B.N., Kukreja L.M., Joag D.S.*
Field emission studies of pulsed laser deposited LaB₆ films on W and Re
Ultramicroscopy **107**, 825-832 (2007)
35. Lim H-H*, Prakash O., Kim B-J*, Pandiyan K.*, Cha M.*, Rhee B.K.*
Ultra-broadband optical parametric generation and simultaneous RGB generation in periodically poled lithium niobate
Optics Express **15**, 18294-18299 (2007)
36. Manekar M., Mukherjee C., Roy S.B.
Imaging of time evolution of the first-order magneto-structural transition in Fe-Rh alloy using magnetic force microscopy
Europhysics Letters **80**, 17004-1-8 (2007)
37. Markna J.H.*, Parmar R.N.*, Vachhani P.S.*, Kuberkar D.G.*, Misra P., Singh B.N., Kukreja L.M.
Enhancement of electronic transport and magnetoresistance of Al₂O₃ impregnated (La_{0.5}Pr_{0.2})Sr_{0.3}MnO₃ thin films
Europhysics Letters, **79**, 17005: 1-5 (2007)



38. Mishra S. *, Ingale A., Roy U.N. *, Gupta A. *
Study of annealing-induced changes in CdS thin films using x-ray diffraction and Raman spectroscopy
Thin Solid Films **516**, 91 (2007)
39. Mishra S.R., Tiwari S.K., Ram, S.P., Mehendale S.C.
Generation of hollow conic beams using a metal axicon mirror
Optical Engineering **46**, 084002-1-5 (2007)
40. Misra P., Ranganathan K., Muthukumaran N., Nathan T.P.S. *
Edge-pumped, folded zig-zag Nd:YAG slab laser
Optics & Laser Technol. **39**, 1269-1272 (2007)
41. Misra P., Sharma T.K., Kukreja L.M.
Temperature dependent photoluminescence from ZnO/MgZnO multiple quantum wells grown by pulsed laser deposition
Superlattices & Microstructures **42**, 212-217 (2007)
42. Mohanty S.K. *, Gupta P.K., Verma R.S.
Self-rotation of an assembly of two or more cylindrical objects in optical tweezers: a simple approach for realization of optically driven micromotors
Current Science **93**, 695-698 (2007)
43. Patro P.K. *, Kulkarni A.R. *, Gupta S.M., Harendranath C.S. *
Improved microstructure, dielectric and ferroelectric properties of microwave-sintered $\text{Sr}_{0.5}\text{Ba}_{0.5}\text{Nb}_2\text{O}_6$
Physica B: Cond. Matter **400**, 237-242 (2007)
44. Prakash O., Mahakud R., Biswal R., Shrikanth G., Vora H.S., Dixit S.K.
Study on the quality of interference fringes from a pulsed UV source for application in a biprism based fiber Bragg grating writing
Applied Optics **46**, 6210-1-8 (2007)
45. Rajendiran P., Parihar Y. S., Deshpande A.U.
Automated bibliographic record capturing from web OPAC and online bibliographic database for library cataloguing in LibSys
Annals of Library and Information Studies **54**, 140-145 (2007)
46. Rao B.S., Naik P.A., Arora V., Khan R.A., Gupta P.D.
Angular distribution and dose measurements of hard x-ray emission from intense laser-plasma interaction
J. Applied Physics **102**, 063307-1-4 (2007)
47. Rawat A., Vyavahare P.D. *, Ramani A.K. *
Enhanced DSR for MANET with improved secured route discovery and QoS
International J. on Network Security **5**, 158-166 (2007)
48. Roy S. B., Chattopadhyay M. K.
Low temperature magnetic response of MnSi: Thermomagnetic history effects, metamagnetic transition and the kinetic arrest of the reverse transition.
Europhysics Letters **79**, 47007 (2007)
49. Sailaja R. *, Bisht P.B. *, Singh C.P., Bindra K.S., Oak S.M.
Influence of multiphoton events in measurement of two-photon absorption cross-sections and optical nonlinear parameters under femtosecond pumping
Optics Communications **277**, 433-39 (2007)
50. Selvamani R., Bhattacharyya S., Gupta S.M.
Dielectric properties and ac-conductivity analysis of $\text{Bi}_{1.25}\text{La}_{0.75}\text{Ti}_3\text{O}_{12}$ ceramic using impedance spectroscopy
J. Chem. & Physics of Solids **10**, 1016-(2007)
51. Sharma S., Jajoo A., Dube A.
5-Aminolevulinic acid-induced protoporphyrin-IX accumulation and associated phototoxicity in macrophages and oral cancer cell lines.
J. Photochemistry and Photobiology B: Biology **88**, 156162 (2007)
52. Sharma V. K., Chattopadhyay M. K., Kumar R., Ganguli T. Tiwari P., Roy S. B.
Magnetocaloric effect in Heusler alloys $\text{Ni}_{50}\text{Mn}_{34}\text{In}_{16}$ and $\text{Ni}_{50}\text{Mn}_{34}\text{Sn}_{16}$
J. Phys.: Condensed Matter **19**, 496207-(2007)
53. Sharma V. K., Chattopadhyay M. K., Roy S.B.
Kinetic arrest of the first order austenite to martensite phase transition in $\text{Ni}_{50}\text{Mn}_{34}\text{In}_{16}$: dc magnetization studies
Physical Review B **76**, 140401 (R) (2007)
54. Singh N.
Single mode operation of a narrow bandwidth dye laser using a single prism, grazing incidence grating long cavity
Optics & Laser Technol. **39**, 1140-1143 (2007)
55. Singh Rashmi., Khardekar R.K., Kumar A., Kohli D.K.
Preparation and characterization of nanocrystalline Nd-YAG powder
Materials Letters **61**, 921-924 (2007)
56. Sridhar R., Shukla S.K.
Design of the vacuum system for the LHC beam dump lines
Bulletin of Indian Vacuum Society **10**, 15-18 (2007)



57. Srikanth G.
Measurement of period of interference patterns with sub-micron period
Optics & Laser Technology **39**, 918-921 (2007)
58. Srivastava A., Patel H.S., Gupta P.K.
A view-based approach for the reconstruction of optical properties of turbid media
Current Science **93**, 359-65 (2007)
59. Srivastava H., Tiwari P., Srivastava A.K., Nandedkar R.V.
Growth and characterization of a-Fe₂O₃ nanowires
J. Applied Physics **102**, 054303-1-5 (2007)
60. Sundar R., Ranganathan K., Nath A.K.
Performance studies of diode-side-pumped CW Nd:YAG laser in copper coated optical pump cavity
Optics & Laser Technol. **39**, 1426-1431 (2007)
61. Tiwari A.K., Poddar D.R. *, Das B.N. *
On the equivalent radius of a radiating slot in impedance calculations
Progress in Electromagnetics Research **74**, 47-56 (2007)
62. Upadhyaya B.N., Chakravarty U., Kuruvilla A., Thyagarajan K., Shenoy M.R., Oak S.M.
Mechanisms of generation of multi-peak and mode-locked resembling pulses in Q-switched Yb-doped fiber lasers
Optics Express **15**, 11576-11588 (2007)
63. Verma Y., Rao K.D., Mohanty S.K. *, Gupta P.K.
Optical coherence tomography using a tapered single mode fiber tip
Laser Physics Letters **4**, 686-689 (2007)
4. Gupta P.K.
Biomedical applications of lasers
Indo-French Workshop Lasers, Quantum Optics and Biophysics, France, 29 Oct.-2 Nov. 2007
5. Gupta P.K.
Biomedical applications of lasers
Indo-Japanese Workshop on Recent Developments in Optics and Photonics, New Delhi, 14 Dec. 2007
6. Gupta P.K.
Laser manipulation of microscopic objects some recent developments
3rd Asian and Pacific Rim Symposium on Biophotonics in conjunction with *Biophotonics Downunder*, Cairns, 9 - 11 July 2007
7. Gupta P.K.
Nano science and technology: activities at RRCAT
IBSA (India, Brazil & South Africa) Nanotechnology Meeting, Pretoria, 20-22 Nov. 2007
8. Gupta P.K.
Optical techniques for biomedical imaging and diagnosis
International workshop on Physics in Biology: a synergy, Hyderabad, 12-14 Dec. 2007
9. Joshi M.P.
Optoelectronic properties of photo-oxidized and photodegraded aromatic diamine TPD dye
IUMRS International Conference on Advanced Materials, Bangalore, Oct. 2007
10. Kukreja L.M.
Pulsed laser growth of nanostructured materials: some recent experiments
DAF-BRNS 4th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Rajkot, Oct. 2007

B. Invited Talks

1. Banerjee Arup
Collective oscillation of Bose-Einstein condensates
Theoretical Physics Seminar Circuit, Chandigarh, October 2007
2. Ganesamoorthy S.
Growth of relaxor ferroelectric single crystals and their characterization
12th National Seminar on Crystal Growth, Kalpakkam, 21-23 Dec. 2007
3. Gupta P.D.
Laser wake field electron acceleration using intense ultrashort laser pulses
National Laser Symposium -7, Vadodara, Dec. 2007
11. Kukreja L.M.
Conduction electrons in ZnO
National Conference on New Horizons in Theoretical and Experimental Physics, Cochin, Oct. 8 - 10, 2007
12. Kukreja L.M.
Annealed ZnO films: some mysteries
Sonderforschungsbereiche lectures, Ulm, Nov. 27, 2007
13. Kukreja L.M.
Electrical properties of ZnO films annealed at different temperatures
Applied Physics Seminars, Karlsruhe, Nov. 2007



14. Moorti A.
Cathode plasma jet pinching, intense x-ray emission, and fast ion generation in laser-triggered vacuum discharge
22nd National Symposium on Plasma Science & Technology, Ahmedabad, Dec. 8, 2007
 15. Naik P.A.
High order harmonic generation and other ultrashort pulse laser-plasma interaction studies at RRCAT
Asia Pacific Plasma Theory Conference, Gandhinagar, Dec. 12, 2007
 16. Naik P.A.
Laser-plasma based electron acceleration
22nd National Symposium on Plasma Science & Technology, Ahmedabad, Dec. 11, 2007
 17. Raja S.S.
Laser based instruments for the nuclear fuel cycle
National Laser Symposium -7, Vadodara, Dec. 2007
 18. Shinde R.S.
Recent trends in microwave ferrite technology for high power applications in research and industries
AICTE Sponsored Winter School on Ferroic Ceramics, Kharagpur, 5-16 Nov. 2007
 19. Shinde R.S.
Challenging scenario in design of magnetic ceramics-ferrites & its measurement techniques in magnetic ceramic
AICTE Sponsored Winter School on Ferroic Ceramics, Kharagpur, 5-16 Nov. 2007
- C. Seminars / Conference Presentations**
- C1. DAE-BRNS National Laser Symposium, Vadodara, Dec. 16-20, 2007**
1. Agnihotri V., Ranganathan K., Hedao P., Misra P., Kumar M., Arya R., Oak S.M.
Diode-end-pumped, A-O q-switched Nd:YVO₄ laser for marking applications
 2. Alimardani M.*, Paul C.P., Toyserkani E.*
Effects of the geometrical and temporal thermal variations on the stress fields formed in automated laser fabrication process
 3. Ansari M.S., Singh B., Chandra R., Navathe C.P.
Development of pulse forming network for large size disk amplifiers in Nd:glass laser chain
 4. Arora V., Singhal H., Naik P.A., Khan R.A., Gupta P.D.
Experimental study of K-shell line emission from magnesium plasma produced by ultrashort laser pulses
 5. Arora V., Singhal H., Naik P.A., Kumbhare S.R., Gupta P.D.
Optimization of the K_α radiation produced by interaction of high intensity femtosecond laser pulses with thick titanium foils
 6. Ashok P.C., Dasgupta R., Gupta P.K.
Measurement of axial position spectrum of trapped microspheres using image correlation technique
 7. Bhandare R., Dave I., Raja S.S.
USB: a better choice for automation and control of tabletop instruments for physics based experiments
 8. Bhatnagar P., Benerji N.S., Shrivastava B.B., Mittal J.K.
A generalized diffraction filtered resonator with a KrF excimer laser
 9. Biswal R., Agrawal P.K., Dixit S.K., Mittal J.K.
On the production and use of fractionally distilled HBr gas to improve Cu:HyBRID performance
 10. Chakravarty U., Upadhyaya B.N., Kuruvilla A., Oak S.M.
A high-power superfluorescent fiber source using Yb-doped double-clad fiber
 11. Chakravarty U., Naik P.A., Khan R.A., Gupta P.D.
A novel method of intense keV x-ray generation from *in situ* produced silver clusters using Ti:sapphire laser pulses
 12. Choubey A., Agrawal D.K., Vishwakarma S.C., Upadhyaya B.N., Ali S., Jain R.K., Sah S.K., Arya R., Joseph J.*, Kashi V.K.V.*, Oak S.M.
Laser cutting of fast breeder test reactor fuel subassembly in hot cell
 13. Choubey A., Jain R.K., Agrawal D.K., Vishwakarma S.C., Upadhyaya B.N., Oak S.M.
Effect of pulse duration and spot overlap on laser cleaning with Nd:YAG laser
 14. Daulatabad S.R., Subramanyam V.V., Chakraborty A., Singh B.
CAT-EYE resonator for high power copper vapour laser
 15. Dubey V.K., Singh I.J., Jain R., Saxena P., Vora H.S., Mittal J.K.
A 6 channel nanosecond programmable time delay generation unit for a CVL MOPA system
 16. George M.*, Munnera C.I.*, Singh C.P., Bindra K.S., Oak S.M.
Nonlinear optical studies in neutral red dye under nanosecond laser pulse excitation



17. George J., Oak S.M.
Effect of first oscillating mode location drift on single longitudinal mode performance
18. George J., Oak S.M.
Effect of pump spectra on single longitudinal mode performance
19. Jain L., Palod S., Bhanage V.P., Bhujle A.G., Navathe C.P.
Control system for experiments with laser cold atoms
20. Joshi M.J., Deshpande P.P., Navathe C.P.
Control system for laser marking system
21. Jayabalan J., Singh A., Chari R., Mukhopadhaya P.K., Srivastava H., Oak S.M.
Nanosecond laser induced de-aggregation of silver nanoprisms aggregates
22. Kar S., Verma S., Patoliya N.*, Bartwal K.S.
Growth and characterization of pure and Mn doped $\text{Li}_2\text{B}_4\text{O}_7$ single crystals
23. Khan S., Jayabalan J., Chari R., Pal S., Porwal S., Sharma T.K., Oak S.M.
Transient reflectivity in GaAsP/AlGaAs quantum wells
24. Kumar A., Upadhyaya B.N., Oak S.M.
Real time analysis of laser weld pool characteristics
25. Kumar P.*, Moorthy Babu S.*, Ganesamoorthy S., Bhaumik I., Karnal A.K., Kanjilal D.*
Effect of H^+ ion implantation on the surface and structural properties of lithium niobate for optical waveguide application.
26. Mahakud R., Prakash O., Dixit S.K.
Analysis of the fiber Bragg grating written using second harmonic of copper vapor laser
27. Malik A., Sundar S.S., Raja S.S.
Alignment tolerancing in pre-aligned sealed nitrogen laser tube
28. Mendhe G., Rao B.T., Tiwari P., Kaul R., Shenoy N.M., Nakhe S.V., Oak S.M.
Experimental study on laser marking and micro-drilling with copper vapor laser
29. Mishra S.K., Aneesh K., Nigam S., Navathe C.P.
An air-core differentiating Rogowski coil for measuring fast high current in capillary discharge plasma experiment
30. Mishra S.R., Ram S.P., Tiwari S.K., Mehendale S.C.
Use of a hollow laser beam to improve atom transfer in a double-MOT system
31. Mokhariwale A., Bahadur R., Nakeh S.V.
Development of a capacitor charging power supply for excimer laser
32. Mukherjee C., Rajiv K., Mittal J.K.
Effect of moisture on thin film Fabry-Perot filter
33. Nakhe S.V., Mishra R.K., Tiwari G.N., Mittal J.K., Sinha A.K., Bhatt S.*, Vohra R.S.*, Jawale S.B.*, Sutha R.L.*, Singh S.*, Paramjit*, Mishra S.K.*, Gantayet L.M.
Development of 40W copper vapour laser operating at 9 kHz pulse repetition rate
34. Nayak I., Mishra R.K., Tiwari G.N., Nakhe S.V., Mittal J.K.
Development of 4 watt sealed off copper bromide laser
35. Nigam S., Mishra S.K., Prasad Y.B.S.R., Tripathi P.K., Aneesh K., Kushwaha R.P., Navathe C.P., Naik P.A., Gupta P.D.
Development of a high current fast capillary discharge plasma system
36. Palod S., Deshpande P.P., Bhanage V.P., Navathe C.P.
Virtual instrumentation for automating laser based experiments
37. Pathak A.K., Oak S.M.
Data acquisition software for laser material processing
38. Patidar R.K., Sharma A.K., Raghuramaiah M., Joshi R.A., Naik P.A., Gupta P.D.
Development of an Nd:phosphate glass laser system delivering 1J/1ns laser pulses for prototype study of optical parametric amplification of chirped pulses
39. Rajan C., Malik A., Dobale A.R.*, Sundar S.S.
Amplifier circuit for pulsed photo-acoustic spectroscopy system
40. Ram S.P., Mishra S.R., Tiwari S.K.
Generation of optical pulses with a variable delay from a single beam using AOMs in tandem: application to temperature measurement of cold atoms
41. Ram S.P., Tiwari S.K., Jayabalan J., Mishra S.R.
Measurement of a narrow spot-size by scanning of single pixel of a CCD camera
42. Ranganathan K., Sundar R., Hedao P., Oak S.M.
Thermal characteristics of flashlamp-pumped Nd:YAG laser: Heat-capacity mode of operation



43. Rao B.T., Singh J.*, Nath A.K.*, Oak S.M.
Effect of CO₂ laser pulse parameters on cut edge quality of mild steel
44. Rao B.T., Singh C.H.P., Kaul R., Nath A.K., Oak S.M.
Characteristics of laser cut stainless steel edges produced by pulsed mode CO₂ Laser
45. Samuel P.*, Senthil K. A. *, Moorthy Babu S.*, Ganesamoorthy S., Karnal A.K., Bhaumik I., Palanisamy P.K.*
Growth and characterization of Nd:KGW laser material.
46. Saxena P., Sharangpani K.K., Jain R., Talwar S., Dubey V.K., Singh I.J., Vora H.S.
SSV a real time integrated control electronics for automation of a CVL MOPA system
47. Sharma A., Arya R., Oak S.M.
Energy meter circuit for quasi-CW lasers
48. Sharma A.K., Patidar R.K., Raghuramaiah M., Naik P.A., Gupta P.D.
A new and simple method of temporal shaping of laser pulses
49. Sharma S.K., Singh A.J.*, Mukhopadhyay P.K., Ranganathan K., Oak S.M.
Reduction of fall time of intracavity frequency doubled AO q-switched green laser pulses
50. Sharma S.K., Singh Y.
In-situ investigation of saturation temperature of KDP solution for bulk crystal growth
51. Sharma T.K., Rawat P.*, Dixit V.K., Ganguli T., Jangir R., Pal S., Porwal S., Kumar R., Khakha A., Kheraj V.*, Singh S.D., Oak S.M.
Development of red laser diodes utilizing MOVPE grown InGaP quantum wells
52. Shenoy N.M., Sharangpani K.K., Tiwari G.N., Nakhe S.V., Mittal J.K.
Precision marking on metal surfaces using 8 W Cu-Br laser
53. Sheth S.S., Joshi O.P., Oak S.M.
DSP based embedded PMDC motor drive for laser material processing
54. Shukla S.*, Verma Y., Sahu K., Rao D.K., Dube A., Gupta P.K.
Effect of He-Ne laser irradiation on hair follicle growth in testosterone treated mice investigated with optical coherence tomography and histology
55. Singh A.J.*, Sharma S.K., Mukhopadhyay P.K., Ranganathan K., Oak S.M.
Efficient and high power green beam generation using water cooled non gray track resistant KTP crystal
56. Singh B., Subramanyam V.V., Daulatabad S.R., Chakraborty A.
Development of near 100 watt copper vapour lasers (KE-CVLs)
57. Singh B., Subramaniam V.V., Daulatabad S.R., Chakraborty A.
Output characteristics of a 77 W kinetically enhanced copper vapour laser
58. Singhal H., Chakravarty U., Rao B.S., Arora V., Naik P.A., Gupta P.D.
Dependence of high order harmonic intensity on the length of plasma plume : phase matching and absorption effects
59. Shukla P., Mishra G.K., Saxena P., Srivastava V.K., Talwar S., Khare R.
A novel confocal scheme for temporal stretching of laser pulses
60. Shukla S.*, Verma Y., Sahu K., Rao D.K., Dube A., Gupta P.K.
Effect of He-Ne laser irradiation on hair follicle growth in testosterone treated mice investigated with optical coherence tomography and histology
61. Shukla V., Bindra K.S.
Synthesis of Si nano-particles by laser ablation and optical limiting studies
62. Sudagar R.*, Chari R.
Ultrashort pulse diagnostics using a single mode fibre
63. Sundar R., Ranganathan K., Oak S.M.
Flat top beams from Gaussian mirrors: an experimental study
64. Sundar S.S.*, Rajan C., Raja S.S.
Alternative excitation sources for fluorescence based trace detection of uranium
65. Tiwari S.K., Ram S.P., Mishra S.R., Mehendale S.C.
Generation of a narrow non-diffracting beam using a metal axicon mirror
66. Tiwari V.B., Singh S., Rawat H.S., Singh M.P., Mehendale S.C.
Cold atomic pulses from a magneto-optical trap
67. Upadhyaya B.N., Vishwakarma S.C., Ali S., Bhawsar V., Sah S.K., Arya R., Agrawal D.K., Jain R.K.,



- Choubey A., Oak S.M.
Development of an efficient 880 W CW Nd:YAG laser
68. Upadhyay J., Joshi M., Deshpande P.P., Sharma M.L., Navathe C.P.
A programmable high voltage variable slope ramp generator
69. Vachhani D.M., Arya R., Oak S.M.
Constant current capacitor charging power supply based on high-frequency, zero-voltage switched LCL-T resonant converter
70. Verma R.S., Swami M.K., Manhas S., Gupta P.K.
Mueller matrix based optimization of reflective type twisted nematic liquid crystal spatial light modulator for phase only modulation
71. Verma S.
Development and application of optical diagnostics for imaging crystal growth from solution (Ph.D. thesis summary)
72. Verma S., Depty E.*
Influence of pH on the growth rate and morphology of KDP crystals
73. Vishwakarma S.C., Jain R.K., Upadhyay B.N., Choubey A., Agrawal D.K., Oak S.M.
Development of in-situ laser based cutting technique for shock absorber rear nut in pressurized heavy water reactors
74. Vishwakarma S.C., Jain R.K., Upadhyaya B.N., Choubey A., Agrawal D.K., Oak S.M.
Development of in-situ laser based cutting technique for shock absorber rear nut in pressurized heavy water reactors

C.2 52nd DAE Solid State Physics Symposium Mysore, 27-31 December 2007

1. Arora P., Chattopadhyay M.K., Roy S.B.
Magnetocaloric effect in MnSi : magnetization and heat capacity
2. Kamal C., Banerjee A., Chakrabarti A.
Time-dependent density functional theory calculation of van der Waals coefficients of small sodium and carbon clusters and C_{60}
3. Kumar P.*, Moorthy Babu S.*, Ganesamoorthy S., Bhaumik I., Karnal A.K., Kanjilal D.*
Development of proton implanted optical waveguides in lithium niobate.

4. Mondal P., Manekar M., Kumar R., Ganguli T., Roy S. B.
Structural and superconducting properties of as-cast Nb_3Al
5. Samuel P.*, Senthil K. A. *, Moorthy Babu S.*, Ganesamoorthy S., Karnal A.K.
Growth and characterization of Nd and Yb doped $KGd(WO_4)_2$ single crystals.
6. Sharma V. K., Chattopadhyay M. K., Chouhan A., Arora P., Kumar R., Ganguli T., Roy S. B.
Effect of annealing on the martensitic transition in $Ni_{50}Mn_{34}In_{16}$ alloy
7. Sharma V. K., Chattopadhyay M. K., Chouhan A., Arora P., Roy S. B.
Field induced martensite to austenite transition in $Ni_{50}Mn_{34}In_{16}$ alloy
8. Sokhey K. J. S., Manekar M., Chouhan A., Choudhary R.J.*, Gupta P., Phase D. M.*, Lodha G. S., Roy S. B.
Electrical transport study of laser ablated Co_2TiSn thin films
9. Verma S., Depty E., and Gupta P.K.
Strength of free convection during KDP growth and its relation to crystal quality

C.3 Other Seminars / Conference Presentations

1. Adhi K.P.*, Jejurikar S.M.*, Koinkar P.M.*, More M.A.*, Joag D.S.*, Kukreja L.M.
Nanostructured GaN and InN films for field emission devices
Proc. IUMRS-ICAM 2007, Bangalore, Oct. 2007
2. Agrawal S.*, Borage M., Tiwari S., Saxena R.*
Issues in the application of lossless turn-off snubber in high-power, high-frequency applications
National Systems Conference, Dec. 2007
3. Bansod T.*, Shukla S.K., Kumar KVANPS, Kotaiah S.
Study of initial dynamic pressure rise behaviour in Indus-2
International Symposium on Vacuum Science & Technology, Mumbai, 28-30 November 2007
4. Bhardwaj S. *, Borage M., Tiwari S.
Simplified loss analysis and comparison of full-bridge, full-range-ZVS, DC-DC converters
National Power Electronics Conference, December 2007
5. Chakrabarti A., Kratzer P.*, Liu K.K.*, Scheer M.*
Evidence of shape transition of InAs quantum dots on



- In_{0.5}Ga_{0.5}As/InP(001) from theoretical study
IUMRS-ICAM 2007, Bangalore, October 2007
6. Das A.K. *, Singh B.N., Misra P., Kukreja L.M.
Studies on Si doped ZnO thin films grown by sequential pulsed laser deposition
4th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Rajkot, 3-5 Oct. 2007
 7. Dev V., Haridas P., Nayak M.K., Verma D., Haridas G.
Response check of ambient synchrotron radiation monitors
National Symposium on Radiation Protection, Kolkata, Nov. 2007
 8. Dev V., Nayak M.K., Kumar V., Sahani P.K., Verma D., Haridas G., Thakkar K.K., Sarkar P.K., Sharma D.N.
Effect of storage ring shutdown on radiation level around Indus-1 synchrotron radiation source
National Symposium on Radiation Protection, Kolkata, Nov. 2007
 9. Dixit V.K., Ganguli T., Sharma T.K., Singh S.D., Kumar R., Porwal S., Tiwari P., Ingale A., Oak S.M.
Two step growth process of GaP epitaxial layer grown on n-type Si (001) using MOVPE
IUMRS-ICAM 2007, Bangalore, October 2007
 10. Dixit V.K., Singh S.D., Sharma T.K., Ganguli T., Jangir R., Pal S., Khattak B.Q., Srivastava A.K., Srivastava H., Oak S.M.
Studies on GaAs/AlGaAs based (p and n-type) quantum well infrared photodetector structures grown using metal organic vapour phase epitaxy
XIV International Workshop on Physics of Semiconductor Devices, Mumbai, Dec. 2007
 11. Ganguli T., Kadir A. *, Gokhale M. *, Kumar R., Shah A.P. *, Arora B.M. *, Bhattacharya A.
Study of the microstructure in MOVPE grown InN epitaxial layers by high resolution X-ray diffraction
XIV International Workshop on Physics of Semiconductor Devices, Mumbai, 17-20 December 2007
 12. Gilankar S.G., Kush P.K.
Experimental verification of capture coefficients for a cylindrical cryopanel of closed cycle refrigerator based cryopump
International Symposium on Vacuum Science & Technology, Mumbai, 28-30 November 2007
 13. Haridas G., Nayak M.K., Dev V., Thakkar K.K., Sarkar P.K., Sharma D.N.
Electron depth dose a tool for radiation safety programme in high energy electron accelerators
National Symposium on Radiation Protection, Kolkata, November 2007
 14. Joshi P., Chaubey S., Kher S.
Influence of boron co-doping on temperature sensitivity of long period gratings in optical fibre
ICMAT 2007, Singapore, July 2007
 15. Kamal C., Chakrabarti A.
Interesting trends in electronic structure of ultra-small carbon nanotubes: a first principles study
IUMRS-ICAM 2007, Bangalore, October 2007
 16. Kher S., Joshi P., Chaube S., Oak S.M.
Design and development of compact sensing head based on single long period fiber grating for simultaneous temperature and strain measurements
National Conference on "Advances in Sensors for Aerospace Applications", Hyderabad 14-15 December 2007
 17. Krishnan S.R. *, Bindra K.S., Oak S.M.
Development of sensitive photo diode based high dynamic range laser power meter using microcontroller
National Symposium on Instrumentation, Tiruchengode, 24-26 October 2007
 18. Kumar A., Senecha V.K., Kotaiah S.
Cusp magnetic field configuration and heat removal system design studies for the H- ion plasma chamber
DAE-BRNS-PSI Symposium on Ion Beam Technology and Applications (SIBTA07), Mumbai, Sept. 2007
 19. Misra P. *, Sharma T.K. *, Prinz G.M. *, Thokne K. *, Kukreja L.M.
Photoluminescence from ultra-thin ZnO/ZnMgO quantum wells
Proc. IUMRS-ICAM 2007, Bangalore, Oct. 2007
 20. Misra P., Sharma T.K., Kukreja L.M.
Basic photoluminescence processes at different temperatures in ZnO / (0001) sapphire thin films grown by pulsed laser deposition
4th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Rajkot, 3-5 October 2007
 21. Moorti A., Naik P.A., Gupta P.D.
Experimental study of high-energy ion generation in a vacuum discharge triggered by multi-ps laser pulses
22nd National Symposium on Plasma Science & Technology, Ahmedabad, Dec. 6-10, 2007
 22. Moorti A., Naik P.A., Gupta P.D., Bhat R.K.
Intense x-ray emission from plasma pinching in a



- multi-ps laser-triggered vacuum discharge in non-coaxial geometry
22nd National Symposium on Plasma Science & Technology Ahmedabad, Dec. 6-10, 2007
23. Nayak M.K., Verma D., Dev V., Kumar V., Sahani P.K., Haridas G., Thakkar K.K., Kumar M.*, Prasad L.C.*, Sarkar P.K.*, Sharma D.N.*
Radiation energy estimation during Ti-sapphire laser plasma experiments at RRCAT, Indore
National Symposium on Radiation Protection, Kolkata, November 2007
24. Pal S., Ingale A., Dixit V.K., Sharma T.K., Porwal S., Mukharjee C., Oak S.M.
Comparative studies on as-grown and nanotextured GaN:Mg epilayer
XIV International Workshop on Physics of Semiconductor Devices, Mumbai, 17-20 Dec. 2007
25. Petwal V.C., Rao J.N., Bapna S.C., Subbaiah K.V.*
Dose profiles for EB radiation processing: comparing Monte Carlo simulation and experimental data
17th National Symposium on Radiation Physics, Kolkata, 16-18 November 2007
26. Prasad Y.B.S.R., Nigam S., Mishra S.K., Aneesh K., Tripathi P.K., Kushwaha R.P., Naik P.A., Navathe C.P., Gupta P.D.
Initial results from the high voltage capillary discharge experiment
22nd National Symposium on Plasma Science & Technology, Ahmedabad, Dec. 6-10, 2007
27. Rao B.S., Arora V., Naik P.A., Khan R.A., Gupta P.D.
Energy spectrum measurement of fast electrons produced in ultra-intense laser-plasma interaction
22nd National Symposium on Plasma Science & Technology, Ahmedabad, Dec. 6-10, 2007
28. Rao B.S., Naik P.A., Singhal H., Arora V., Chakravarty U., Khan R.A., Gupta P.D., Nakajima K.*, Kameshima T.*
Initial experiments on laser based electron acceleration at RRCAT, Indore
Laser and Plasma Accelerators Workshop 2007, Azores, Portugal, 9-13 July, 2007
29. Rathore S.S.*, Das A.K.*, Singh B.N., Misra P., Kukreja L.M.
Studies on CoZnO thin films grown by pulsed laser deposition,
4th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Rajkot, 3-5 October 2007
30. Ratnakala K.C., Tiwari S.K., Shukla S.K., Kotaiah S.
Out gassing rate measurement of copper plated stainless steel
International Symposium on Vacuum Science & Technology, Mumbai, 28-30 November 2007
31. Rawat A., Gupta A.*, Gupta S.*
Evaluation of Sybil attack prevention in SRP for MANETs
International Conference on Sensor and Related Networks 2007, Vellore, Dec. 2007
32. Rawat A., Vyavahare P.D.*, Ramani A.K.*
Improved system components for secure data communication in MANETs using secured DSR
IEEE Third International Conference on Wireless Communications and Sensor Networks, Allahabad, 13-15 December 2007.
33. Rawat A., Vyavahare P.D.*, Ramani A.K.*
Implications of proactive route discovery in MANET's on-demand routing protocols
International Conference on Sensor and Related Networks 2007, Vellore, Dec. 2007
34. Sahu K., Rai R., Sharma M., Bansal H., Gupta P.K.
Effect of methylene blue photosensitization on antibiotic resistance of E. coli
International conference on frontiers of Radiation Biology, 175-176, Kottayam, February 8-11, 2007
35. Sahu K., Sharma M., Gupta P.K.
Effect of incubation time on photodynamic inactivation of human colon adenocarcinoma cells due to endogenously synthesized protoporphyrin IX induced by delta-aminolevulinic acid methyl ester
International Symposium on Light and Life -2007, 50, Hyderabad, August 29- 31, 2007
36. Saxena M. K., Joshi P., Kishore J., Kher S., Oak S.M.
Microcontroller and LabVIEW based automated set-up for calibration of fiber grating based strain sensors
National Symposium on Instrumentation, Tiruchengode, October 2007
37. Singh B.N., Misra P., Das A.K.*, Kumar R.*, Kailath B.J.*, Mishra M.*, Phase D.M.*, DasGupta A.*, DasGupta N.*, Kukreja L.M.
DC-Discharge assisted pulsed laser growth of ultrathin silicon oxynitride films
4th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Rajkot, 3-5 October 2007
38. Singh B.N., Misra P., Das A.K.*, Kumar R.*, Kailath B.J.*, Mishra M.*, Phase D.M.*, DasGupta A.*, DasGupta N.*, Kukreja L.M.



- Growth of ultra-thin silicon-oxinitride films using DC-discharge assisted pulsed laser annealing of silicon
Proc. IUMRS-ICAM 2007, Bangalore, October 2007
39. Singh S.D., Sharma T.K., Mukherjee C., Oak S.M.
Impact of growth parameters on the structural properties of InP/GaAs type-II quantum dots grown by metal-organic vapour phase epitaxy
XIV International Workshop on Physics of Semiconductor Devices, Mumbai, 17-20 December 2007
40. Sridhar R., Ratnakala K.C., Sindal B.K., Tiwari S.K., Malviya K.K., Bhatnagar P., Shukla S.K., Kotaiah S.
Ultra high vacuum testing of the new RF cavity of Indus-1
International Symposium on Vacuum Science & Technology, Mumbai, 28-30 November 2007
41. Suhane S.K., Nayak M.K., Bhatnagar V., Chouksey S., Kotaiah S.
Design and development of 700 MeV electron beam shutter for transfer line-3 of Indus-2 SRS
17th National Symposium on Radiation Physics, Kolkata, 14-16 November, 2007
42. Thota S. *, Misra P., Kukreja L.M., Kumar J.
Characteristics of pulsed laser deposited Zn_{1-x}Ni_xO/ZnO bi-layer thin films
4th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Rajkot, 3-5 October 2007
43. Upadhyay A., Patel K. *, Naik P.A., Gupta P.D., Gantayat L.M. *
3D-PIC simulations of laser plasma based acceleration schemes
22nd National Symposium on Plasma Science & Technology, Ahmedabad, Dec. 6-10, 2007
44. Vadjikar R.M., Senecha V.K., Kumar A., Hannurkar P.R., Kotaiah S.
Simulation of beam extraction from ion source
DAE-BRNS-PSI Symposium on Ion Beam Technology and Applications (SIBTA07), Mumbai, 19-21 September 2007
45. Verma D., Nayak M.K., Dev V., Kumar V., Sahani P.K., Haridas G., Thakkar K.K., Sarkar P.K. *, Sharma D.N. *
Radiological status during Indus-2 SRS commissioning
National Symposium on Radiation Protection, Kolkata, November 2007
46. Yadav D.P., Shiroman R., Shukla S.K., Kotaiah S.
Development of UHV compatible machined diamond profile gaskets for Indus-2
International Symposium on Vacuum Science & Technology, Mumbai, 28-30 November 2007
47. Yedle K., Singh Rajvir, Jain A.K.
Successful vacuum brazing
International Symposium on Vacuum Science & Technology, Mumbai, Nov. 28-30, 2007

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

Best Poster Awards

Two papers from RRCAT presented in the DAE-BRNS National Laser Symposium-2007 at Vadodara (Dec. 2007) received the "Best Poster Award" of the Indian Laser Association for the year 2007. Each paper received a cash price of Rs. 1,500 and a certificate.

The award winning papers are :

- 1) A novel method of intense keV x-ray generation from *in situ* produced silver clusters using Ti:sapphire laser pulses.
Chakravarty U., Naik P.A., Khan R.A., Gupta P.D.
- 2) Effect of He-Ne laser irradiation on hair follicle growth in testosterone treated mice investigated with optical coherence tomography and histology.
Shukla S. *, Verma Y., Sahu K., Rao D.K., Dube A., Gupta P.K.