A. Journal Articles

1. Amirthapandian S., Panigrahi B.K., Srivastava A. K*., Dhara S., Gupta A., Sastry V. S., Nandedkar R. V.*, Nair K. G. M., Narayanasamy A.

   Ion-beam mixing in an immiscible Fe/Ag multilayer film

   Journal of Applied Physics, vol. 95, no. 10, p. 5295-5300, Jul. 2004

2. Banerjee Arup

   Collective oscillations in two-dimensional Bose-Einstein condensate

   Physics Letters A, vol. 332, no. 3-4, p. 291-97, Nov. 2004

3. Bhatanagar R., Singh N., Chaube R., Vora H.S.

   Design of a transversely pumped, high repetition rate, narrow bandwidth dye laser with high wavelength stability

   Review of Scientific Instruments, vol.75, no. 12, p. 5126-30, Dec. 2004

4. Branford W.R., Clowes S.K., Bugoslavsky Y.V., Gardelis S., Androulakis J., Giapintzakis J., Grigorescu C.E.A., Manea S.A., Freitas R.S., Roy S.B.*, Cohen L.F.

   Thickness dependence of Hall transport in Nil.15Mn0.85Sb thin films on silicon

   Physical Review B, vol.69, no. 20, p.R201305, 2004

5. Chakraborty A. L., Kher S., Chaubey S., Nathan T. P. S.

   Bidirectional frequency-domain digital filtering to simultaneously improve temperature resolution and eliminate spatial inaccuracy of a distributed temperature sensor

   Optical Engineering, vol. 43, no. 11, p. 2724-2729, Nov 2004

6. Chattopadhyay M.K.*, Manekar M.A., Pecharsky A.O., Pecharsky V.K., Gschneidner K.A. Jr., Moore J., Perkins G.K., Bugoslavsky Y.V., Roy S.B.*, Chaddah P.*, Cohen L.F.

   Metastable magnetic response across the anti-ferromagnetic to ferromagnetic transition in Gd5Ge4.

   Physical Review B, vol.70, no. 21, p.214421, 2004

7. Das K., Jain, B., Patel H. S.

   Nile Blue in Triton-X 100/benzene–hexane reverse micelles: a fluorescence spectroscopic study

   Spectrochimica Acta Part A, vol. 60, no. 8-9, p. 2059-64, Jul. 2004

8. De A. K., Murlidhar K., Eswaran V., Wadhawan V. K.*

   Modelling of transport phenomena in a low-pressure CVD reactor

   Journal of Crystal Growth, vol. 267, no. 3-4, p. 598-12, Jul. 2004

9. Dube A., Jayasankar K., Prabhakaran L., Kumar V., Gupta P.K.

   Nitrogen laser irradiation (337 nm) causes temporary inactivation of clinical isolates of Mycobacterium tuberculosis

   Lasers in Medical Science, vol. 19, p. 52-56, 2004

10. Dixit V.K.*, Bansal B., Venkataraman V., Bhat H.L., Chandrasekharan K. S., Arora B. M.

    Studies on high resolution x-ray diffraction, optical and transport properties of InAsxSb1–x/GaAs (x0.06) heterostructure grown using liquid phase epitaxy

    Journal of Applied Physics, vol. 96, no. 9, p. 4689-5381, Nov. 2004

11. Ghosh N.*, Pradhan A., Gupta P.K.*, Gupta S., Jaiswal V., Singh R.P.

    Depolarization of light in a multiply scattering medium: effect of the refractive index of a scatterer

    Physical Review E, vol. 70, no. 6, p. 066607-1-7, Dec. 2004

12. Jagdheesh T.R., Sastikumar D, Kamachi Mudali U. Nath A K .*,

    Laser Processed Metal-Ceramic Coating on AISI Type 316L Stainless Steel

    Surface Engineering., vol. 20, no. 4, p360-366, 2004

13. Jain S. K., Jain Akhilesh, Hannurkar P. R.

    Indigeneous development of a low cost high power 2kW (CW),2.45GHz microwave system

    Indian Journal of Pure & Applied Physics, vol. 42, p. 896-901, Dec. 2004

14. Kandasamy R., Raghavachari S., Misra P.*, Nathan T.P.S.*

    Highly efficient continuous-wave operation of a Nd:YAG rod laser that is side pumped by p-polarized diode laser bars

    Applied Optics, vol. 43, no. 31, p. 5855-59, Nov. 2004

15. Kaul R., Ganesh P., Tripathi P., Nandedkar R.V., Nath A.K.

    Characterization of Dry Sliding Wear Resistance of Laser Surface Hardened En 8 Steel To appear in

    J Materials Processing Technology, 2004.

16. Krishnagopal S.*, Kumar V.*, Maiti S., Prabhu S.S.*, Sarkar S.K.

    Free-electron lasers

    Current Science, vol. 87, no. 8, p. 1066-78, Oct. 2004

17. Kukreja L.M., Barik, S., Mishra P.

    Variable band gap ZnO nanostructures grown by pulsed laser deposition

    Journal of Crystal Growth, vol. 268, no. 3-4, p. 531-35, Aug. 2004

18. Kumar, Ashwani; Srivastava, A. K.; Tiwari, Pragya; and Nandedkar, R. V.

    The effect of growth parameters on the aspect ratio and

number density of CuO nanorods

Journal of Physics: Condensed Matter, vol. 16, no. 47, Dec. 2004

19. Majhar J., Shrivastava A.K.*, Nandedkar R.V.*, Pandey R.K

    Strained ZnSe nanostructure investigations by x-ray, AFM, TEM and optical absorption luminisance spectra

    Nanotechnology, vol. 15, p. 572-, 2004

20. Manivannan S., Tiwari S.K.*, Dhanuskodi S.

    Spectral, thermal and SHG studies on phase matchable organic NLO material EDMP for blue-green laser generation

    Solid State Communication, vol. 132, no. 2, p. 123-28, Sept. 2004

21. Mazumdar J. Dutta, Nath A.K. *, Ravi Kumar B., Manna I.

    Studies on Residual Stress Developed in Laser Surafce Irradiated 0.6% Carbon Steel

    Lasers in Engineering, vol. 14, p.133-151, 2004.

22. Majumdar J. Dutta, Nath A. K. *, Manna I.

    Studies on Laser Bending of Stainless Steel

    Materials Sciences & Engineering, vol. A 385, p.113-122, Nov. 2004

23. Mohanty S.K., Gupta P.K.

    Laser-assisted three-dimensional rotation of microscopic objects

    Review of Scientific Instruments, vol. 75, no. 7, p. 2320-22, Jul. 2004

24. Moorti A., Raghuramaiah M., Naik P.A., Gupta P.D.

    Characteristics of a multi-keV monochromatic point x-ray source based on vacuum diode with laser produced plasma as cathode

    Pramana: Journal of Physics, vol. 63, 1031, November 2004

25. Mukhopadhyay P.K.*, Alsous M.B., Ranganathan K.*, Sharma S.K.*, Gupta P.K.*, George J.*, Nathan T.P.S.*

    Analysis of laser-diode end-pumped intracavity frequency-doubled, passively Q-switched and mode-locked Nd: YVO4 laser

    Applied Physics B: Lasers and Optics, vol. 79, no. 6, p. 713-720, Oct. 2004

26. Nanda D.*, Chouhan H.P.S., Maiti B.

    PVC membrane based potentiometric sensor for uranyl ion using thenoyltrifluoro acetone as ionophore

    Indian Journal of Chemistry, vol. 43A, no. 8, p. 1685-88, Aug. 2004

27. Nanda D.*, Chauhan H.P.S., Maiti B.

    Transport of uranyl ion (UO22+ across bulk liquid membrane by thenoyl trifluoro acetone (TTA)

    Indian Journal of Chemical Technology, vol. 11, no. 9, p. 643-47, Sept. 2004

28. Nandedkar R.V.

    History, present status and future plans of Indian synchrotron radiation sources: Indo –US forum on SRS and other sources at Argonne National Lab, US. May 2003

    Journal of Physics and Chemistry of Radiation, vol. 70, no. 4-5, p. 589-93, Jul. 2004

29. Pandit P., Gupta S.M., Wadhawan V.K.

    Shape-memory effect in PMN-PT (65/35) ceramic

    Solid State Communications, vol. 131, no. 11, p. 665-70, Sept. 2004

30. Rai V.N.

    Basic concept in plasma diagnostics

    Bulletin of Laser and Spectroscopy Society of India, vol. 13, p. 55-70, 2004

31. Ranganathan K., Sundar R., Misra P., Nathan T.P.S.

    Highly Efficient Continuous-Wave Operation of a Nd:YAG Rod Laser that is Side Pumped by p-Polarized Diode Laser Bars

    Applied Optics, vol. 43, no. 31, p. 5855-5859, Nov. 2004

32. Roy S B and Chaddah P.

    Experimental study of disorder-influenced first-order transitions in vortex matter and in magnetic systems.

    Phase Transitions, Vol.77, p.767, 2004

33. Sahni V. C.

    Indian contribution to the Large Hadron Collider under construction at CERN, Geneva

    Current Science, vol. 87, no. 4, p. 441-446, Aug. 2004

34. Sharma A., Singh G., Sahoo G.K.

    Change in Laslett tune shift due to a dielectric vacuum chamber

    Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, vol. 528, no. 3, P. 661-669, Aug. 2004

35. Tiwari M.K., Sawhney K.J.S., Gowri Sankar B., Raghuvanshi V.K., Nandedkar R.V.

    A Simple and precise total reflection X-ray fluorescence spectrometer: construction and its applications

    Spectrochimica Acta Part B: Atomic Spectroscopy, vol. 59, no. 8, p. 1141-47, Aug. 2004

B. Invited Talks

1. Dixit S.K.

   Diffraction filtered resonator for copper vapor lasers

   XV International Symposium on Gas Flow and

Chemical lasers & High power Laser Conference, GCL/HPL 2004, Prague, Czech Republic, Aug. 30 – Sept.3, 2004

2. Gupta P.K.
   Biophotonics: a tutorial at Seventh international conference on optoelectronics, fiber optics and photonics, Photonics 2004,
   Cochin, Dec. 8, 2004.
3. Gupta P.K.
   Laser micromanipulation of microscopic objects
   Seventh international conference on optoelectronics, fiber optics and photonics, Photonics 2004,
   Cochin, Dec. 9-11, 2004.
4. Karnal A. K.
   Crystal Growth Activity at Laser Materials Division, CAT
   Topical Meeting on Materials Science & Technology, Dec. 30, 2004.
5. Karnal A. K.*, Bhatt R.*, Bhaumik I.*, Ganesamoorthy S.*, Wadhawan V.K.*, Bhat H. L.
   Non-linear optical borates: their recent development, with emphasis on CLBO and b-BBO growth
   Indo-Japan workshop on Crystal Growth and Applications of Advanced Materials for Optoelectronics, Chennai, Dec 7-10, 2004.
6. Karnal A. K.
   Review on Inorganic, Technologically Important Non-Linear Optical Crystals
   National Seminar on Growth and Characterization of Solid Materials, Nov. 21-22, 2004.
   Department of Applied Physics, Laxminarayan Institute of Technology, Nagpur University
7. Moorti A.
   Plasma assisted high current density pulsed electron emission from ferroelectric materials
   Plasma-2004, Bundelkhand University, Jhansi, Dec 7-10, 2004.
8. Nath A.K.
   Applications of High Power CO_2 Lasers in Steel Industry
   Tata Steel, Jamshedpur, September 14, 2004.
9. Nath A.K.
   High Power CO_2 Lasers and their Industrial Applications
   Indian Institute of Metals, Kolkata, Sept 13, 2004.
10. Nath A.K.
    The Emerging Trends in Metals & Materials- Mining, Manufacture & Markets,
    Recent advanced in Laser Material Processing Int. Conf. Pragati Maidan, New Delhi,
    Sept. 9-11, 2004.
11. Rai V.N.
    Study of emission from laser produced plasma expanding across an external magnetic field
    Plasma-2004, Bundelkhand Univerity, Jhansi, December 7-10, 2004.
12. Sahni V.C.
    Overview of Synchrotron Radiation Program at CAT, India
    Stanford Linear Accelerator Centre (SLAC) & Stanford Synchrotron Radiation Laboratory, USA, Aug. 2, 2004.
13. Sahni V.C.
    Current Status of Indus-2 - the Indian Light Source
    Lawrence Berkeley National Laboratory (LBNL), USA, Aug. 3, 2004.
14. Sahni V.C.
    Indian Accelerator Program – Present & Future
    Fermi National Accelerator Laboratory (FNAL), USA, Aug. 5, 2004.
15. Sahni V.C.
    Indian Gamma Ray Astronomy Program
    Fermi National Accelerator Laboratory (FNAL), USA, Aug. 6, 2004.

C. Seminars/ Conferences Presentations

1. Babu K. Seshu, Mangesh Borage*, Rakesh Saxena, Sunil Tiwari* and Swarna Kotaiah*,
   Evaluation of passive loss-less snubbers for high-frequency switching converters",
   IEEE Bangalore 13th Annual Symposium on Power Systems, Nov. 2004.
2. Bhatt Rajeev, Kar Sujan, Goel Gaurav, Sen P., Bartwal K. S.
   Growth of MgO doped $LiNbO_3$ crystal and development of broadband bulk electro-optic phase modulator
   Proc. Photonics -2004, Kochi, Dec 9-12, 2004.
3. Bhaumik Indranil, Ganesamoorthy S., Karnal A. K., Wadhawan V. K.
   A study on coloration and axial variation of composition in single crystals of lead tungstate grown by Czochralski technique
   International conference on crystal growth 14, Aug.6-9, Grenoble, France, 2004.
4. Bhaumik Indranil, Karnal A. K., Ganesamoorthy S., Wadhawan V. K.
   Growth of Single Crystals of Lithium Tantalate by Czochralski Technique
   Proc. Photonics -2004, Kochi, Dec 9-12, 2004.
5. Borage Mangesh, Sunil Tiwari and Swarna Kotaiah,

Thermal characterization of planar transformers – merits of a novel extended-core geometry

Proc of India International Conference on Power Electronics (IICPE) 2004.

6. Chattopadhyay M K, Roy S B and Chaddah P

   Large magnetocaloric effect in CeFe2.

   47th DAE Solid State Physics Symposium, Amritsar, Dec 26-30, 2004

7. Dasgupta R, Gupta P.K.

   Measuremebnt of orbital angular momentum of a single photon: A non-interferrometric approach, p-415

   Proc. Photonics -2004, Kochi, Dec 9-12, 2004.

8. Durga D. Praveen Kumar, Mangesh Borage*, Sunil Tiwari* and Swarna Kotaiah*,

   A comparative study of full bridge zero voltage switching converter topologies for wide-conversion-range applications,

   IEEE Bangalore 13th Annual Symposium on Power Systems, Nov. 2004.

9. Jagdheesh R., Kamachi Mudali U., Sastikumar D., Nath A .K.*

   Microstructure and microhardness characterization of laser cladded austenitic stainless steel,

   Proc. INCOSURF- 2004, 399-406, Aug. 25-27.

10. Majumdar S, Sharma V.K., Sokhey K.J.S., Manekar M., Roy S.B., Chaddah P.

    Martensitic transition in Ni-Fe-Ga Ferromagnetic Shape Memory Alloy.

    47th DAE Solid State Physics Symposium, Amritsar, Dec 26-30, 2004

11. Majumdar S.K., Ghosh N., Gupta P.K.

    Independent component analysis for optical diagnosis of cancer

    Proc. Photonics -2004, Kochi, Dec 9-12, 2004.

12. Majumdar S.K., Kumar R., Ghosh N., Gupta P. K.

    Cancer diagnosis using N2 Laser excited auto fluorescence spectroscopy of formalin-fixed human tissue

    Proc. Photonics -2004, Kochi, Dec 9-12, 2004.

13. Manekar M A, Chattopadhyay M K, Sokhey K J S, Roy S B and Chaddah P.

    Experimental Investigation of Disorder-influenced First Order Transition.

    STATPHYS 22, Bangalore, July 4-9, 2004,

14. Manekar Meghmalhar*, Gunasekaran C., Roy S.B.*, Chaddah P.*

    Disorder broadened first order antiferromagnetic to ferromagnetic transition in Dysprosium.

    47th DAE Solid State Physics Symposium, Amritsar, Dec 26-30, 2004

15. Mohanty S.K., Dave K., Gupta P.K.

    Micro fabrication and actuation of Micro fluidic valve using trapped cylindrical objects,

    Proc. Photonics -2004, Kochi, Dec 9-12, 2004.

16. Moorti A, Kumbhare S.R., Khan R.A., Joshi R.A., Naik P.A., Gupta P.D.

    Comparative study of moderate current vacuum discharge triggered by 27 ps nd 4 ns duration laser pulses

    Plasma – 2004, December 7-10, 2004, Bundelkhand Univerity, Jhansi

17. Petwal V.C., Soni H.C.

    Radiation Processing of Food Products with 5 MV Bremsstrahlung X-Rays

    INSAC 2004, BARC, Mumbai, Nov. 15-17, 2004.

18. Petwal V.C., Pramod R., Kaul A., Bapna S.C., Soni H.C.

    Electron Beam Dosimetry Study for 750 keV DC Accelerator

    INSAC 2004, BARC, Mumbai, Nov. 15-17, 2004.

19. Ramshankar P., Khattak Q., Jain A.K., Kaul R., Ganesh P., Nath A.K., Ajit A. and Pagare A.

    Electroforming of copper by periodic reversal process.

    Int. Conf. on surface Engineering, Aug. 2004, Bangalore

20. Romanov I.V., Korobkin Yu.V., Rupasov A.A. and Shikhanov A.S., Moorti A., Khan R.A., Kumbhare S.R., Naik S.R., Gupta P.D.

    Generation of hard x-ray radiation in laser induced vacuum discharges

    European Conference on Laser Interaction with Matter (ECLIM – 2004), Sept. 5-9, 2004, Rome

21. Senthil Kumaran A., Lakshmi Chandru A., Moorthy Babu S., Bhaumik I., Ganesamoorthy S., Karnal A.K., Wadhawan V.K., Ichimura M.

    Crystal growth of pure and doped-$KGd(WO_4)_2$ and their characterization for laser applications,

    International conference on crystal growth 14, Aug. 6-9, Grenoble, France, 2004.

22. Sharma A.K., Raghuramaiah M., Naik P.A., Gupta P.D.

    Experimental determination of temporal asymmetry of ultrashort laser pulses using U MOSAIC technique

    Photonics – 2004, December 9-11, 2004, Cochin University of Science and Technology, Kochi

23. Verma Yogesh, Hrebesh M. S., Patel H. S., Divakar Rao K., Gupta P.K.

    In-vivo and in-vitro imaging of biological tissues using a fiber optic based optical coherence tomography setup,

    Proc. Photonics -2004, Kochi, Dec 9-12, 2004.

Note : In combined authorship with other institutes, only authors with star mark are from CAT, Indore.