



A. Journal Articles

1. Bansal, B., Dixit, V.K.*, Venkataraman, V., Bhat, H.L. Transport, optical and magneto transport properties of hetero-epitaxial $\text{InAs}_x\text{Sb}_{1-x}/\text{GaAs}(x \leq 0.06)$ and bulk $\text{InAs}_x\text{Sb}_{1-x}(x < 0.05)$ crystals: experiment and theoretical analysis
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2. Benerji N.S., Varshnay N., Abhinandan L., and Nundy U A compact spark pre-ionized pulser sustainer TE- CO_2 laser
Sadhana, vol.29, no. 137, part 3, p. 297-303, Jun., 2004
3. Bhargava, P., Kumar, M., Kumar, H., Pandit, P., Pandey, R., Nath, A.K.
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Pramana: Journal of Physics, vol.62, no. 4, p. 923-32, Apr., 2004
4. Biswas, C., Shukla, A.K., Banik, S., Barman, S.R., Chakrabarti, A.*
Argon nanobubbles in Al(111): a photoemission study
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5. Branford, W.R., Clowes, S.K., Syed, M.H., Bugoslavsky, Y.V., Gardelis, S., Androulakis, J., Giapintzakis, J., Grigorescu, C.E.A., Berenov, A.V., Roy, S.B.*, Cohen, L.F.
Large positive magnetoresistance in nonstoichiometric NiMnSb thin films on silicon
Applied Physics Letters, vol.84, no. 13, p. 2358-60, Mar., 2004
6. Branford, W. R., Roy, S. B.*, Clowes, S. K., Miyoshi, Y., Bugoslavsky, Y. V., Gardelis, S., Giapintzakis, J. and Cohen, L. F.
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7. Chatterjee, S.
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8. Choudhary, Swati N., Rawat, Anil, Rajan, Alpana
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International Journal of System Modeling and Simulation. Special Issue on Advancement in Algorithms, vol. 2, no. 1, p. 21-25, Jan. 2004
9. Das. Kaustuv, Jain, Beena, Patel, Hari Shankar
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Spectrochimica Acta Part A, vol. 60, p. 2059-2064, 2004
10. Ganesamoorthy, S., Bhaumik, I., Karnal, A.K., Wadhawan, V.K.
Optical, thermal and defect studies on PbWO_4 single crystals grown by the Czochralski method
Journal of Crystal Growth, vol.264, no. 1-3, p. 320-26, Mar., 2004
11. Kar, S., Bhatt, R., Bartwal, K.S., Wadhawan, V.K.
Optimisation of chromium doping in LiNbO_3 single crystals
Cryst. Res. & Technol., vol.39, No. 3, 230p, 2004
12. Khare, R., Daulatabad, S.R.
A non-mixing technique for enhancement of the tuning range of Rhodamine 6G using Rhodamine B
Optics and Laser Technology, vol.36, no. 1, p. 27-30, Feb., 2004
13. Khattak, B.Q., Ram Sankar, P., Vyas, S.N.
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15. Kishinets, A.S., Korobkin, Yu.V, Romanov, I.V., Rupasov, A.A.: Shikhanov, A.S., Moorti, A.*, Naik, P.A.*, Gupta, P.D.*
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16. Kukreja, L.M.*, Rohlfing, A., Misra, P.*, Hillenkamp, F., Dreisewerd, K.
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17. Kumar, A.*, Tallarida, M., Starke, U., Horn, K.
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18. Kumar, S.*, Jha, S.N., Jagannath, Ganguli, T.*, Bhaskar Rao, S.V.N., Das, N.C.
Valence bands offset between depleted semiconductors



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Applied Surface Science, vol.229, no. 1-4, p. 324-32, May, 2004
19. Lodha, G.S., Modi, M.H., Raghuvanshi, V.K., Sawhney, K.J.S., Nandedkar, R.V.
Soft X ray reflectometer on Indus-1.
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 20. Majhar, Javed,, Shrivatava, A.K., Nandedkar R.V.*, Pandey, R.K.
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 21. Mohanty, S.K., Andrews, J.T., Gupta, P.K.
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Biotechnology Letters, vol. 26, p. 971-974, 2004
 23. Moorti, A., Naik, P.A., Gupta, P.D.
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 24. Nandedkar, R.V.
History, present status and future plans of Indian synchrotron radiation sources
Journal of Physics and Chemistry of Radiation vol. 70, p. 589-593, 2004
 25. Nakhe, S.V.
A novel power good indicator circuit for isolated power supplies
Electronics World, p. 43, April 2004
 26. Nigam, A. K. and Roy, S. B.*
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 27. Rai, V.N.
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Bulletin of Laser and Spectroscopy Society of India, vol.13, p. 55-70, 2004
 28. Roy, S.B.*, Perkins, G.K., Chattopadhyay, M.K.*, Nigam, A.K., Sokhey, K.J.S.*, Chaddah, P.*, Caplin, A.D., Cohen, L.F.
First order magnetic transition in doped CeFe₂ alloys: phase coexistence and metastability
Physical Review Letters, vol.92, no. 14, p. 147203-1-4, Apr., 2004
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The effect of MgO doping on optical properties of LiNbO₃ single crystals
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 31. Seth, M., Ziegler, T., Banerjee, A.*, Austschbach, J., Van Gisbergen, S., Baerends, E.
Calculation of the A term of magnetic circular dichroism based on time dependent-density functional theory I. Formulation and implementation
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Simple and sensitive method for visual detection of temporal asymmetry of ultra short laser pulses
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 33. Sharma, A.K., Naik, P.A., Gupta, P.D.
Estimation of higher order chirp in ultra short laser pulses using modified spectrum auto-interferometric correlation
Optics Communications, vol.233, no. 4-6, p. 431-37, Apr., 2004
 34. Sharma, M., Dube, A., Bansal, H., Gupta, P.K.
Effect of pH on uptake and photodynamic action of chlorin p6 on human colon and breast adenocarcinoma cell lines
Photochemical and Photobiological Sciences, vol.3, no. 2, p. 231-35, Feb., 2004
 35. Srivastava, A.K., Tripathi, P., Kumar Ashwani, Nandedkar, R.V.
Growth of CuO nanorods
Current Science, vol.86, p. 22-23, 2004
 36. Singh, A., Aswal, D.K., Gupta, L.C., Gupta, S.K., Yakhmi, J.V., Sahni, V.C.*
Magnetization and magnetotransport studies of YBa₂Cu₃O_{7- δ} /La_{1-x}Pb_xMnO₃ heterostructures
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 37. Singh, G., Tiwari, V.S., Wadhawan, V.K.
Dipolar-glass-like behavior of 0.7MN-0.3PZ ceramic
Solid State Communications, vol.129, no. 10, p. 665-70, Mar., 2004
 38. Sokhey, K.J.S.*, Chattopadhyay, M.K.*, Nigam, A.K.,



Roy, S.B.*, Chaddah, P.*

Signatures of phase separation across the disorder broadened first order ferromagnetic to antiferromagnetic transition in doped-CeFe₂ alloys

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39. Solanki, G.S.

Enhanced Fresnel zone plate coded microscopy of large-size objects

Journal of the Optical Society of America A, vol. 21, p. 517-522, April 2004

40. Uppal, A., Ghosh, N., Datta, A., Gupta, P.K.

Fluorimetric estimation of concentration of NADH from human blood samples

Biotechnology and Applied Biochemistry, March 2004

41. Vadjikar, R.M.

Simulation of electrical treeing in solid dielectrics

Journal of Materials Science, vol. 39, no. 10, p. 3487-3492, May 2004

Erratum:

1. Chattopadhyay, M. K.*, Roy, S. B.*, Nigam, A. K., Sokhey, K. J. S.* and Chaddah, P.* Metastability and giant relaxation across the ferromagnetic to antiferromagnetic transition in Ce(Fe_{0.96}Ru_{0.04})₂
Physical Review B, vol. 68, 174404, 2003

B. Invited Talks

1. Chaddah, P.
Studies on supercooled metastable states in vortex matter and in ordered magnetic systems
India-Finland Joint Workshop on Physics and Techniques below 20K, February 2004, Indian Institute of Science, Bangalore.
2. Gosh, N.
Depolarization of light in turbid medium
Workshop on Biomedical Optics and Related Topics S.N. Bose, National Centre for Basic Sciences, Calcutta, Feb. 23-25, 2004.
3. Gosh, N.
Theoretical modeling of fluorescence propagation in biological tissue: applications in optical diagnosis of cancer
International Conference on Mathematical Biology, IIT Kanpur, Feb. 19-21, 2004
4. Gupta, P.K.
Biomedical Optics: An Introduction
International Conference on Mathematical Biology, IIT Kanpur, Feb. 19-21, 2004

5. Gupta, P.K.

Laser induced fluorescence spectroscopy for cancer diagnosis

Workshop on Biomedical Optics and Related Topics S.N. Bose, National Centre for Basic Sciences, Calcutta, Feb. 23-25, 2004.

6. Gupta, P.K.

Optical diagnosis and therapy for improved health care

91st Indian Science Congress, Jan. 3-7, 2004

7. Kumar, Arvind

Photocathodes and production of short electron pulses with their utility in plasma based accelerators

SERC workshop on plasma-based acceleration of particles, Jan. 27-31, 2004, Institute of Plasma Research, Gandhinagar, India.

8. Majumder, S.K.

Statistical pattern recognition for optical diagnosis of cancer

International Conference on Mathematical Biology, IIT Kanpur, Feb. 19-21, 2004

9. Majumder, S.K.

Statistical pattern recognition for optical diagnosis of cancer

Workshop on Biomedical Optics and Related Topics S.N. Bose, National Centre for Basic Sciences, Calcutta, Feb. 23-25, 2004.

10. Naik, P.A.

Laser based particle acceleration and table top terawatt lasers

SERC workshop on plasma-based acceleration of particles, Jan. 27-31, 2004, IPR, Gandhinagar, .

11. Nath, A. K.

Indigenously developed High Power CO₂ Lasers & their Material Processing Applications

Fifth Biennial Workshop on Applications of Laser in Mechanical Industry WALMI2004, Feb. 27-29, 2004, Jadavpur University, Kolkata

12. Rao, K. Divakar

Optical coherence tomography

Workshop on Biomedical Optics and Related Topics S.N. Bose, National Centre for Basic Sciences, Calcutta, Feb. 23-25, 2004.

13. Roy, S. B.

Disorder-influenced first order magnetic transition in CeFe₂ based pseudobinary alloys: Phase-coexistence and metastability.

Workshop on Physics of Novel Materials- Electronic and Magnetic Properties, Jan. 2004, S. N. Bose National Centre for Basic Sciences, Kolkata.



14. Roy, S. B.

Experimental studies on disorder-influenced first order phase transition.

Symposium on Current Trends in Low Temperature Physics, March 2004, Jawaharlal Nehru University, New Delhi.

C. Seminar/Conference Presentations

1. Bhagavannarayana, G., Anantha Murthy, R.V., Budakoti, G.C., Bartwal, K.S.*, Kumar, B.

Effect of annealing on crystalline perfection of Fe doped LiNbO_3 single crystals grown by CZ method

Proc. NSC-33, NCL Pune, Jan. 8-10, (2004).

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

Laser surface hardening of 0.6% carbon steel-process optimization

Fifth Biennial Workshop on Applications of Laser in Mechanical Industry WALMI2004, Feb. 27-29, 2004, Jadavpur University, Kolkata

3. Dwivedi, J., Kumar, Abhay, Sandha, R.S., Goswami, S.G., Soni, H.C., Bhatnagar, V.K., Hannurkar, P.R., Jain, A.K., Lad, Mahendra, Pande, S.A., Sahu, R.K., Ramsankar, P., Sharma, S.D., Shukla, S.K., Vyas, S.N.

Restoration of RF cavity of synchrotron storage ring Indus-I

APAC 2004, Korea, March 2004

4. Gilankar, S.G., Kush, P. K.

Development of closed cycle refrigerator operated cryopump

Proc. National Seminar & Conference on Cryogenics and its Frontier Applications

March 25th-27th, 2004, Howrah (West Bengal), p.128-132

5. Gupta, Prabhat K, Sharma, R.C., Kush, P. K.

Development of cross-counter-flow heat exchanger for cryogenic range

Proc. National Seminar & Conference on Cryogenics and its Frontier Applications

March 25th-27th, 2004, Howrah (West Bengal), p.125 - 127

6. Kumar, Abhay, Dwivedi, J., Sandha, R.S., Goswami, S.G., Soni, H.C.

Thermal design modification & operational performance of Indus-I storage ring RF cavity

APAC 2004, Korea, March 2004

7. Kush, P. K., Sharma, R.C., Doohan, R.S., Sagar, A.K., Chaudhary, L.C., Ansari, M.S.

Single stage (30K) and two stage (10K) Gifford McMahon cryocoolers developed at CAT

National Seminar & Conference on Cryogenics and its Frontier Applications,

March 25th-27th, 2004, Howrah (West Bengal).

8. Kush, P. K., Ghosh, Rupul, Ghosh, Parthasarathi, Sharma, R.C., Doohan, R.S.

Test Results of cryogenic reciprocating type expansion engine with nitrogen as process gas

Proc. National Seminar & Conference on Cryogenics and its Frontier Applications

March 25th-27th, 2004, Howrah (West Bengal), p.118 – 124

9. Puntambekar, T.A., Holikatti, A.C., Suhane, S.K., Karnewar, A., Banerji, Anil, and Kotaiah, S.

Beam profile monitoring system for Indus-2

Proc. National Symposium on Nuclear Instrumentation 2004, IGCAR Kalpakkam,

Feb. 17-20, 2004

10. Satapathy, S., Bartwal, K. S. and Wadhawan, V. K.

Dielectric properties of aniline doped TGS

Proc. NSC-33, NCL Pune, Jan. 8-10, (2004).

11. Sharma, R.C.

Low cost vacuum valve for cryogenics applications

Proc. National Seminar & Conference on Cryogenics and its Frontier Applications

March 25th-27th, 2004, Howrah (West Bengal), p. 133

12. Sharma, S.K., Singh, Yeshpal, Wadhawan V.K.

Studies on the transmission characteristics of home grown KDP crystals along different crystallographic directions

Proc. NSC-33, NCL, Pune, Jan. 8-10, 2004, p. 56.

13. Shukla, Vijay, Kar, S., Goel, Gaurav, Bhatt, Rajeev and Bartwal, K. S.

SHG efficiency determination of VTE processed near stoichiometric

LiNbO_3 crystals

Proc. National Seminar on Crystallography (NSC ~V33), NCL Pune, Jan. 8-10, (2004).

D. Best Paper Award

Sharma, S.K., Pandit, Pragya, Singh, Yeshpal, Wadhawan V.K.

Growth of large size KDP crystal by platform technique. Its characterisation and device fabrication”

Proc. NSC-33, NCL, Pune, Jan. 8-10, 2004, p.251.

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