

P U B L I C A T I O N S

In journals

1. "Single axial mode, Q switched, 1.052 μ m generation from Nd:YAG by self seeding", TPS Nathan, A S Joshi, D D Bhawalkar Optics and Laser Technology, 21, 204-207 (1989).
2. "High peak power Nd:glass lasers for fusion research", D D Bhawalkar, T P S Nathan, B L Gupta, J S Uppal, B S Narayan, N Gopi, C P Navathe, J C Monga, A S Joshi, M P Kamath and U K Chatterjee. Ind. J. Pure and Appl. Phys., 27, 523-32 (1989).
3. "Design and development of cold neutron guides at Dhruva reactor", A S Raja Rao, L Madhav Rao, K R Rao, S G Shukla and H P Vyas, Ind. J. of Pure and Appl. Phys., 27, 601-609 (1989).
4. "Performance of a CVL with self filtered unstable resonator" R Bhatnagar, S K Dixit, B Singh & S V Nakhe, Optics Commun., 74, 93-96 (1989).
5. "Theoretical investigations of multiline emission from a hybrid CO₂ laser", S Sinha and S C Mehendale J Appl. Phys., 66, 3453 (1989).
6. "Saturating optical resonances in quantum dots", S V Nair and K C Rustagi, Superlattices and Microstructures, 6, 377-80 (1989).
7. "Linear and nonlinear optical response of spherical anisotropic semiconductor microcrystallites", L M Ramaniah, S V Nair and K C Rustagi, Phys. Rev., B40, 12423 - 32 (1989).
8. "Design of regenerators for Gifford McMahon cycle cryorefrigerator", P K Kush and M Thirumaleshwar, Cryogenics, 29, 1084-1091 (1989).
9. "Neutron and alpha irradiated reactor pressure vessel steel investigated by positron annihilation and electron microscopy", B Viswanathan, R Rajaraman, R V Nandedkar, D Pachur, Metals Materials and Processes, 1, 145-154 (1989).
- Gifford McMahon cycle cryorefrigerator" M Thirumuleshwar, P K Kush, CAT/I/89-2.
3. "Design of regenerators for a Gifford McMahon cycle cryorefrigerator", P K Kush, M Thirumuleshwar, CAT/I/89-3
4. "Cooling systems for IR-Detectors - a review", M Thirumuleshwar. CAT/I/89-4.
5. "Preliminary design aspects of INDUS - II", CAT/I/89-5.
6. "Variation of beam emittance during the acceleration cycle of the synchrotron", G K Sahoo, G Singh, S S Ramamurthi, CAT/I/89-6.
7. "Stability requirements on magnet power supplies of INDUS-I" Deepa Angal, G Singh, S S Ramamurthi, CAT/I/89-7.
8. "20 MeV Microtron - project report", H C Soni, M M Bemalkhedkar, S S Ramamurthi, CAT/I/89-8.

Contributed Papers in Conferences /Symposia

1. "Design of INDUS-I", G Singh, G K Sahoo, D Angal, B Singh, A D Ghodke and S S Ramamurthi, INDO USSR seminar on SRS Physics Technology & Engineering, CAT, Indore, 30 Jan - 2 Feb, 1989.
2. "Magnet design for INDUS-I programme", S P Mhaskar, S K Shukla, S S Prabhu, R K Mishra, R S Shinde and S S Ramamurthi, *ibid.*
3. "Technology for INDUS-I", S S Ramamurthi, P R Hanurkar, S S Prabhu, H C Soni, M G Karmarkar and S Kotaiah, *ibid.*
4. "INDUS-I, A 450 MeV storage ring for synchrotron radiation", G Singh, G K Sahoo, B Singh, D Angal and S S Ramamurthi, presented at International Conference on SR Applications, Hefei, China, May 9-12, 1989.
5. "Rotating anode x-ray generator - development of", S C Bapna and S S Ramamurthi, Third National Seminar on X-ray Spectroscopy, Srinagar, Oct 9-12, 1989
6. "Why doesn't radiation in a laser go out of resonance with the resonator", D D Bhawalkar, Second National Symposium on Lasers and Applications, Varanasi, 11 to 15 Dec. 1989.

Internal reports

1. "Study of photon induced gas desorption in INDUS-I", K C Ratnakala, M L Pandiyar, R J Patel, G Singh, S S Ramamurthi, CAT/I/89-1.
2. "Design of a Helium Liquefier (Capacity = 11/ hr and 0.5 l/h) and a 4.2 K refrigerator using a three stage

7. "A new polarizing beam splitter for lasers", D D Bhawalkar, *ibid*
 8. "A study of unstable resonators for copper vapour laser", S K Dixit, S V Nakhe, R Khare, S R Daulatabad, K K Sharangpani, B Singh, J K Mittal and R Bhatnagar, *ibid*.
 9. "Copper vapour laser with self-filtering unstable resonators", R Bhatnagar, S K Dixit, B Singh and J K Mittal, *ibid*.
 10. "Switching characteristics of avalanche transistors", Beena Jain, TPS Nathan and D D Bhawalkar, *ibid*.
 11. "Design and development of laser-uranium analyser", Sanjay Kher, Nitin Vyas, R Arya, M Jathar, B N Singh and D D Bhawalkar, *ibid*.
 12. "Optimization of a pulsed periodic CO₂ laser", A K Nath, L Abhinandan, P Choudhary, T Reghu and R Sreedhar, *ibid*.
 13. "Performance characteristics of a capacitively coupled high frequency a.c. excited cw CO₂ laser", A K Nath, P Choudhary, R S Choubey, Manoj Kumar, P V Gadkari and S Arathi Rani, *ibid*.
 14. "Current pulsing of a cw CO₂ laser", U Nundy, *ibid*.
 15. "High Power Multibeam Carbondioxide laser for Industrial Applications", S V Deshmukh, C Rajagopalan and D D Bhawalkar, *ibid*.
- Invited Lectures**
1. "Lasers for material processing applications", TPS Nathan, National workshop on lasers in metallurgical industries, Feb 26- 27, 1989.
 2. "Cooling systems for I.R. detectors - A Review", M Thirumaleshwar, The National Seminar on I.R. Devices and their defence applicatios, SPL, Delhi, March 1989.
 3. "Design of storage vessels", M Thirumaleshwar, Workshop on Stirling Cycle Liquid Nitrogen Plants, CAT, Indore, July 10-14, 1989.
 4. "Transfer system and Safety Aspects for Handling Liquid Nitrogen", P K Kush, *ibid*.
 5. "Glass and ceramic to metal seals", S S Marhas, 3 lectures, Sixth national seminar of Indian society of scientific glass blowers, CAT, Indore, Oct 3 to 7, 1989.
 6. "Synchrotron radiation sources - INDUS-I and INDUS-II", G. Singh, III National seminar on spectroscopy and allied areas, Srinagar, Oct 9-12, 1989.
 7. "Vacuum science and technology", A S Rajarao, 3 lectures, All india course on vacuum science and technology, CAT, Indore, Oct 16 to 26, 1989.
 8. "Cleaning of UHV components", S N Vyas, *ibid*.
 9. "Cryogenic applications" M Thirumaleshwar, 2 lectures, *ibid*.
 10. "UHV system for INDUS-I", S S Ramamurthi, *ibid*.
 11. "Glass and ceramic to metal seals for UHV", S S Marhas, *ibid*.
 12. "Experimental techniques in nonlinear optics", D D Bhawalkar, 3 lectures, SERC School on nonlinear optics, CAT, Indore, Nov. 6 to 24, 1989.
 13. "Third order nonlinear optical processes and materials", K C Rustagi, 7 lectures, *ibid*.
 14. "Second order optical nonlinearities", P K Gupta, 6 lectures, *ibid*.
 15. "Picosecond pulse generation and propogation", S M Oak, 4 lectures, *ibid*.
 16. "Nonlinear optical spectroscopy", S C Mehendale, 3 lectures, *ibid*.
 17. "Ultra fast optical pulse generation and their application in electronics", TPS Nathan, National Seminar on instrumentation, Cochin, Nov 7-9, 1989.
 18. "Lasers and their applications to physics", D D Bhawalkar, Second National Symposium on Lasers and Applications, Varanasi, 11 to 15 Dec. 1989.
 19. "SRS and its applications", D D Bhawalkar, *ibid*.
 20. "Picosecond lasers", S M Oak, *ibid*.
 21. "Nonlinearities in composite materials", K C Rustagi, *ibid*.
 22. "Parameters of INDUS-I", G Singh, Twin international workshop on EXAFs, Univ. of Rajasthan, Jaipur, Dec 11-22, 1989.
 23. "Solid state lasers for engineering applications", TPS Nathan, National Seminar on Lasers in Engineering and Machine, Trivandrum, Dec 30 - Jan 1 (89-90).