A. Journal Articles

1. Alimardani M.*, Toyserkani E.*, Huissoon J.P.*, Paul C.P.
On the delamination and crack formation in a thin wall fabricated using laser solid freeform fabrication process: an experimental-numerical investigation
*Optics and Lasers in Engineering* 47, 1160-1168 (2009)

2. Arora P., Chattopadhyay M.K., Roy S.B.
Magnetic properties and large magnetocaloric effect of DyPt

Magnetocaloric effect in DyCu2
*Journal of Magnetism & Magnetic Materials* 321, 3278-84 (2009)

Development of a versatile high temperature top seeded solution growth unit for growing cesium lithium borate crystals

Study on TL and OSL characteristics of indigenously developed CaF2 phosphor

Investigation of SR method grown (001) directed KDP single crystal and its characterization by high-resolution X-ray diffractometry (HRXRD), laser damage threshold, dielectric, thermal analysis, optical and hardness studies

7. Banerjee Arup
Dipole oscillations of a Bose-Fermi mixture: effect of unequal masses of Bose Bose and Fermi particles.
*Journal of Physics B: Atomic, Molecular & Optical Physics* 42, 235301-1-6 (2009)

8. Bartwal K.S., Ryu H.*, Brik M.G.*, Sildos I.*
Photoluminescence in Mg,Sr1-xAl2O3: Eu2+, Nd3+ and electron-vibrational interaction in the Eu2+ 5d states
*Physica B* 404, 3440-3444 (2009)

Studies of electron-vibrational interaction and crystal field splitting in 5d states of Eu2+ in CaAl2O4 co-doped with Eu2+ and Er3+

Chlorin p6 preferentially localizes in endoplasmic reticulum and Golgi apparatus and inhibits Ca2+ release from intracellular store

11. Bhawsar V., Arya R., Oak S.M.
Automation control and interface for diode-pumped solid-state lasers with adjustable parameters

Characteristics and design of an asymmetrical duty-cycle-controlled LCL-T resonant converter.
*IEEE Transactions on Power Electronics* 24, 2268-75 (2009)

Luminescence and dielectric properties of nanostructured Eu3+K2O Nb2O5-SiO2 glass ore ceramics
*Solid State Communications* 11, 1325-32 (2009)
14. Chatterjee S., Pavan Kumar Y.
Polarization phase-shifting Fizeau interferometer with a cyclic path optical configuration
*Optical Engineering* 48, 115601-1-6 (2009)

15. Chattopadhyay M.K., Arora P., Roy S.B.
Magnetic properties of the field-induced ferromagnetic state in MnSi

16. Das A.K., Misra P., Kukreja L.M.
Effect of Si doping on electrical and optical properties of ZnO thin films grown by sequential pulsed laser deposition

17. Das K., Uppal A., Jain B., Bose B., Gupta P.K.
Light induced toxicity of merocyanine 540-silica nanoparticle complex
*Journal of Nanoscience and Nanotechnology* 9, 5642-5 (2009)

Barman S.R.
Photoemission study of the (100) surface of Ni$_2$MnGa and Mn$_2$NiGa ferromagnetic shape memory alloys
*Surface Science* 603, 1999-04 (2009)

Enhancement of high-order harmonic generation using a two color pump in plasma plumes

Gupta P.D.
Influence of C60 morphology on high-order harmonic generation enhancement in fullerene-containing plasma
*Journal of Applied Physics* 106, 103103-1-7 (2009)

Variation of harmonic spectra in laser-produced plasmas at variable phase modulation of femtosecond laser pulses of different bandwidths
*Journal of the Optical Society of America B* 26, 2143 (2009)

Laser rapid manufacturing of bi-metallic tube with Stellite-21 and austenitic stainless steel

23. Ganguli T., Mazher J.*, Polian A.*, Deb S.K.,
Pages O.*, Firszt F.*
An EXAFS study of the structure of the Zn$_{1-x}$Be$_x$Se alloy system
*Journal of Physics: Conference Series* 190, 012064-1-4 (2009)

24. George J., Seihgal S., Oak S.M., Mehendale S.C.
Beam quality degradation of a higher order transverse mode beam due to spherical aberration of a lens
*Applied Optics* 48, 6202-06 (2009)

Structural and particulate to bulk phase transformation of CdS film on annealing: a Raman spectroscopy study

Spectroscopic investigations on the binding of the photosensitizer chlorin p6 with amine-modified silica nanoparticles in aqueous media
*Photochemistry and Photobiology* 85, 927-33 (2009)

Growth of ultra-thin SiO$_2$ by laser-induced oxidation
The van der Waals coefficients between carbon nanostructures and small molecules: A time-dependent density functional theory study
*Journal of Chemical Physics* 131, 164708-111 (2009)

Effect of proton exchange and annealing on diffraction efficiency of Fe:LiNbO₃ crystals
*Physica B* 404, 3507-3509 (2009)

Growth and optical homogeneity investigations on Fe and Fe:Mn codoped LiNbO₃ crystals
*Crystal Research & Technology* 44, 1303-1307 (2009)


A novel confocal optical pulse stretcher for laser pulses
*Optics Communications* 282, 3850-53 (2009)

33. Kukreja L.M., Das A.K., Misra P.
Studies on nonvolatile resistance memory switching in ZnO thin films

34. Kumar V., Kim Kwang-Je*
Electron beam requirements for Smith-Purcell backward wave oscillator with external focusing
*Physical Review Special Topics - Accelerators and Beams* 12, 070703-1-7 (2009)

35. Kumar V.
Understanding the focusing of charged particle beams in a solenoid magnetic field.

Mapping excited-state dynamics by coherent control of a Dendrimer's photoemission efficiency
*Science*, 326(5950), 2009(Oct.): 263-67

37. Majumdar J.D.*, Manna I.*, Kumar A.*, Bhargava P., Nath A.K.*
Direct laser cladding of Co on Ti--Al-4V with a compositionally interface
*Journal of Materials Processing Technology* 209, 2237-2243 (2009)

Polarized diffuse reflectance measurements on cancerous and noncancerous tissues
*Journal of Biophotonics* 2, 581-87 (2009)

Effect of surface roughness on multilayer film growth

40. Modi M.H., Mercere P.*, Idir M.*
High precision surface metrology using a phase retrieval method

41. Mondal P., ManekarM., Srivastava A.K., Roy S.B.
Bulk critical state and fundamental length scales of superconducting nanocrystalline Nb₃Al in Nb-Al matrix
*Physical Review* B 80, 024502-1-8 (2009)

42. Pandit P., Satapathy S., Gupta P.K., Sathe V.G.
Effect of coalescence doping of Nd and La on structure, dielectric, and magnetic properties of BiFeO₃
*Journal of Applied Physics* 106, 114105-1-7 (2009)
43. Pavan Kumar, Y., Chatterjee S.
   Simultaneous measurement of refractive index and wedge angle of optical windows using Fizeau interferometry and a cyclic path optical configuration
   *Applied Optics* 48, 4756-61 (2009)

44. Prasad N.V.*, Subraymanyam J.*, Murty P.N.*, Karmaker S.*, Gupta S.M.
   Impedance measurements on PZT and La₃₋₇Bi₁ₓ,Ti₁₋ₓO₃ ceramics

   Synthesis and characterization of cadmium selenide nanostructures on porous aluminum oxide templates by high frequency alternating current electrolysis

46. Rao B. Tirumala, Ittoop M.O., Kukreja L.M.
   A power ramped pulsed mode laser piercing technique for improved CO₂ laser profile cutting.
   *Optics & Lasers in Engineering* 47, 1108-16 (2009)

47. Roy G.B.
   Synthesis and study of physico-chemical properties of a new chiral Schiff base ligand and its metal complex.

   The influence of chemical treatments on the superconducting properties of technical niobium materials and their effect on the performance of superconducting radio frequency cavities
   *Superconductor Science Technology* 22, 105014-1-6 (2009)

49. Ryu H.*, Bartwal K.S.
   Doping optimization of Eu and Ho activator ions in polycrystalline CaAl₂O₄
   *Journal of Alloys and Compounds* 480, 966-69 (2009)

   Growth of multiwalled carbon nanotubes on Cu/MgO and their features

51. Sharma A., Abdurrahim Shri, Ghodke A.D., Singh G.
   Optics design and second order longitudinal dispersion minimization in a bunch compressor transfer line for CTF3

   Compositional dependence of the bowing parameter for highly strained InGaAs/GaAs quantum wells

53. Singh B., Subramaniam V.V., Daultabad S.R., Chakraborty A.
   Efficient, high rep rate, large-bore kinetically enhanced copper vapor laser with low (<1 kW/l) specific input power using new thermal assembly
   *Review of Scientific Instruments* 80, 106102-1-3 (2009)

54. Singh Gurvinderjit, Tiwari V.S.
   Effect of Zr concentration on conductivity behavior of (1-x)PMN-xPZ ceramic: An impedance spectroscopy analysis

55. Singh Gurvinderjit, Tiwari V.S., Sharma T.K., Gupta P.K.
   Temperature dependence photo-luminescence of Nd"" doped PLZT ceramic

56. Singh N., Vora H.S.
   Influence of buffer gas pressure on the spectral width of the 510.6-nm line of an atomic copper vapor laser
Theory of third-order optical susceptibility in magnesium doped lithium niobate crystal
*Nonlinear Optics, Quantum Optics* 39, 341-353 (2009)

Saturable and reverse saturable absorption and nonlinear refraction nanoclustered Amido Black dye-polymer films under low power continuous wave He-Ne laser light excitation

Probing the average size of self-assembled metal nanoparticles using x-ray standing waves
*Physical Review B* 80, 035434-1-5 (2009)

60. Verma S., Muralidhar K.*
Imaging convection, concentration and surface micromorphology during crystal growth from solution using optical diagnostics
*Recent Research Developments in Crystal Growth* 5, 141-314 (2009)

Significant enhancement of the in-field critical current density of the MgB$_2$ superconductor through codoping of nano-TiC with nano-SiC
*Superconductor Science & Technology* 22, 055009-1-9 (2009)

62. Viswanathan A.*, Sastikumar D.*, Kumar Harish, Nath A.K.*
Formation of WC-iron silicide (Fe$_3$Si, composite clad layer on AISI 316L stainless steel by high power (CO$_2$) laser
*Surface & Coatings Technology* 203, 1618-23 (2009)

Efficient acceleration of a small dense plasma pellet by consecutive action of multiple short intense laser pulses
*Laser and Particle Beams* 27, 629-634 (2009)
B. Invited Talks

1. Bapna S.C.
750 keV DC accelerator facility safety aspects & applications
18th National Symposium on Radiation Physics (NSRP-18), Udaipur, 19-21 November 2009

2. Bindra K.S.
Ultrafast optical parametric amplifiers
National BRNS Theme Meeting on Widely Tunable Optical Parametric Oscillators, Mumbai, 28-29 August 2009

3. Chakeria J.A.
Higher harmonic generation using nano-structured target plumes
Laser Extreme Interaction, LEO-2009, Brasov, Romania, October 2009

4. Ghosh H.
Nonlinear optical properties of strongly correlated electron systems
University of Guwahati, Guwahati, November 2009

5. Ghosh H.
Nonlinear optical properties of one dimensional Mott-Hubbard insulators
North Eastern Hill University (NEHU), November 2009

6. Haridas G.
Experimental determination of Bremsstrahlung and Synchrotron radiation dose at SR beam lines of 2.5 GeV Indus-2 SRS
National Symposium on Radiation Physics-18, Udaipur, 2009

7. Joshi M.P.
Physics of polymer based optoelectronic devices
Homi Bhabha Centenary BRNS-GND University Workshop on Molecular/Organic Electronic Devices (MOED-2009), Amritsar, 22-25 September 2009

8. Kukreja L.M.
Pulsed laser deposition of Silicon nano-particles and their characterization
DAE-BRNS 5th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials, Chennai, 2-4 December 2009

9. Kukreja L.M.
Morphological and optical properties of Si-nanoparticles grown by pulsed laser deposition
Applied Physics Seminar, Karlsruhe, Germany, 30 October 2009

10. Kukreja L.M.
Silicon nanoparticles: mysteries about light emission
International Conference on Advanced Nanomaterials and Nanotechnology, Guwahati, 9-11 December 2009

11. Naik P.A.
Radiation physics aspects in ultra-intense laser-plasma interaction
National Conference on Accelerator and Low Level Radiation Safety, Delhi, November 2009

12. Naik P.A.
Recent results in high order harmonic generation from plasma plumes
4th Asian Summer School & Symposium on Laser-plasma Acceleration and Radiation, Hsinchu, Taiwan, August 2009

13. Rao B.S.
Intense laser plasma interaction for laser fusion, x-ray lasers and wake-field acceleration
Lasers and their Applications, Vidisha, December 2009

14. Rawat A.
Activities of Computer Centre at RRCAT
DAE-BRNS Seminar on Applications of Computer & Embedded Technology (SACET-09), Kolkata, 28 October 2009
C. Seminars/Conference Presentations


   Structural, electrical and optical properties of Cr:ZnO thin films grown by buffer assisted pulsed laser deposition

   Studies on Dy doped ZnO thin films grown by buffer assisted pulsed laser deposition

   Highly resistive ZnO thin films grown by DC discharge assisted pulsed laser deposition

   Mahadevan *, Kukreja L.M.
   Studies on silicon nanoparticles grown at high temperature using pulsed laser deposition

   Laser induced oxidation

   Enhanced field emission properties of ZnO/SnO micro/nanostructured film on W-tip

   Studies on the resistance switching characteristics of ZnO thin films grown by pulsed laser deposition

   Growth and characterization of ZnO based transparent resistive random access memory devices using pulsed laser deposition

9. Shukla V., Bindra K.S.
   Synthesis, characterization and optical limiting studies of Silicon nano-particles synthesized by laser ablation technique

    Parametric studies on ultra-thin silicon oxynitride films grown by using DC-discharge assisted pulsed laser heating


   Bright ultra-short K- x-ray source generated by high intensity femtosecond laser produced plasma

   Enhancement of characteristic hard x-rays for a laser based source for mammography

   Single shot, multi-keV x-ray dispersion-less spectrograph based on x-ray CCD for absolute measurement of x-ray flux

   X-ray radiation from the rear side of foil target irradiated by ultrashort high intensity laser pulses

   A novel single-shot time-resolved optical diagnostics for plasma using a chirped laser pulse as probe

   Metal nanoparticle formation of various sizes in plasma produced by femtosecond laser pulses

   X-ray emission enhancement in nano-hole
alumina irradiated by intense Ti: sapphire laser pulses


6. Ghosh H.
Nonlinear optical properties of strongly correlated electron systems
*Discussion Meeting on Statistical and Condensed Matter Physics*, p. 21, 31st October - 1st November 2009

7. Ghosh H., Chari R.
Stimulated Raman Scattering in one-dimensional Mott-Hubbard Insulators: A novel THz source

8. Ghosh H., Joshi M.P., Singh M.K., Rajmohan S.
Optical absorption in neutral and cationic TPD: theory and experiment
*Homi Bhabha Centenary BRNS-GND University Workshop on Molecular/Organic Electronic Devices (MOED-2009)*, Amritsar, p - 33, 22-25 September 2009

Co-axial laser cladding gas flows and their effects
*23rd International Conference on Surface Modification Technologies (SMT-2009)* Mamallapuram, 2-5 November 2009

Ultrafast resonant higher-order optical nonlinearities of silver nanoplatelet colloids

Preparation and characterization of Ce:YAG nanocrystals
*Bharatiya Vigyan Sammelan*, Indore, 1-3 December 2009

Van der Waals interaction between carbon nanotubes, fullerenes and small atomic clusters

Growth and characterization of Mn doped Li$_2$B$_2$O$_3$ crystals

Correlation of structural and electrical characteristics of pulsed laser deposited ZnO thin films on annealing
*Proc.14th International Conference on II-VI Compounds*, Saint Petersburg, Russia, 23-28 August 2009

Radiation physics aspects in ultra-intense laser-plasma interaction
*National Conference on Accelerator and Low Level Radiation Safety*, Delhi, November 2009

16. Rajmohan S., Joshi M.P., Dhami T.S., Singh M.P.
Studies on the electrical and optical properties of conjugated organic systems for optoelectronic device application
*Winter School on Chemistry and Physics of Materials*, Bangalore, December 2009

Laser rapid manufacturing and characterization of porous 316L stainless steel structures
*ICALEO 2009*, Orlando, USA, 2-5 November 2009

Synthesis of boron-rich coating on 316L(N) stainless steel using laser surface alloying and its characterization
*23rd International Conference on Surface
**Modification Technologies (SMT-2009)**
Mamallapuram, 2-5 November 2009

Erosive wear behaviour of laser cladded surfaces of Ni & Co based alloys *International Conference on Advances in Mechanical Engineering (ICAME 2009)*, Surat, 3-5 August 2009


Anti-IGF-1R antibody and folic acid tagged near infrared absorbing gold nanoshells for optical imaging and photo-thermal treatment of breast cancer cells *5th World Congress on Cellular and Molecular Biology (WCCMB-09)*, Indore, 2- November 2009

In-situ phase transition study on lead-based relaxor-ferroelectric crystals using polarized light microscopy *National Symposium on Growth of Detector-Grade Single Crystals*, Mumbai, 19-21 November 2009

23. Singh Gurvinderjit, Tiwari V.S., Gupta P.K.
Oxygen vacancy related dielectric relaxation and conduction in KNbO₃ ceramic *International Conference on Electro-ceramics*, Delhi, 13- 17 December 2009

Engineering design and development of shielding door and safety shutter for transfer line -3 tunnel of Indus accelerator complex *National Conference on Accelerator and Low Level Radiation Safety*, Delhi, November 2009

25. Thander P.K., Rajan A., Rawat A.
Analysis of MPI variants on cluster with infiniBand interconnect *DAE-BRNS Seminar on Applications of Computer & Embedded Technology (SACET-09)*, Kolkata, 28-29 October 2009

Open source framework for proactive administration of network *DAE-BRNS Seminar on Applications of Computer & Embedded Technology (SACET-09)*, Kolkata, 28-29 October 2009

27. Tomar S.S., Chaudhari S., Rawat A., Patil J., Bansal A.


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