

**DAE-BRNS**  
**Seminar-cum-Workshop on**

**MATERIALS CHARACTERIZATION AND SURFACE MODIFICATION**  
**IN RESEARCH AND INDUSTRY USING ION ACCELERATORS**  
**(MCIA)**

**March 31 - April 4, 2008**

Organized by

**Institute of Physics, Bhubaneswar**

## SCHEDULE OF LECTURES FOR 31<sup>ST</sup> MARCH 2008 (MONDAY)

TIME	TOPIC	SPEAKER
9:00 – 9:30	Registration	
<b>SESSION – I</b>		
9:30 – 9:35	Welcome Address by Director, IOP	
9:35 – 9:45	Introductory Remarks: S. Kailas, Chairman	
9:45 – 10:30	Keynote address: G. K. Mehta, IUAC, New Delhi/ IIT Kanpur	
10:30 – 10:40	Vote of Thanks: T. Som, Convener	
10:40 – 11:10	Tea Break	
<b>SESSION – II</b>		
	Chair: Dr. S. Kailas	
11:10 – 11:55	Special Lecture: The ITER-India Program	Shishir P. Deshpande, IPR
11:55 – 12:40	Interaction of energetic ions with matter	D. Kanjilal, IUAC
12:40 – 13:00	Microscopic investigation of hyperfine field at Cu in Cr using energetic heavy ions	S. K. Srivastava, IIT Kharagpur
13:00 – 14:00	LUNCH	
14:00 – 16:00	LABORATORY SESSION	
16:00 – 16:30	Tea Break	
<b>SESSION – III</b>		
	Chair: Prof. V. N. Kulkarni	
16:30 – 17:15	Plasma source ion implantation and its applications	S. Mukherjee, IPR
17:15 – 18:00	Accelerator based materials science research activities at IUAC Delhi	D. K. Avasthi, IUAC
18:00 – 18:45	Accelerators for biosciences	R. K. Dutta, IIT Roorkee
20:00	DINNER	

## SCHEDULE OF LECTURES FOR 1<sup>ST</sup> APRIL 2008 (TUESDAY)

TIME	TOPIC	SPEAKER
<b>SESSION – IV</b>		
<i>Chair: Prof. B. N. Dev</i>		
9:00 – 9:45	Ion beam modification of nanostructured materials	B. Satpati, IIMT
9:45 – 10:30	Ion–Nanostructure interactions: Dramatic mass transport induced by MeV Ion beams	P. V. Satyam, IOP
10:30 – 10:45	<b>Tea Break</b>	
<b>SESSION – V</b>		
<i>Chair: Prof. G. K. Mehta</i>		
10:45 – 11:30	Focused ion beam: A unique tool for futuristic technology development	V. N. Kulkarni, IIT Kanpur
11:30 – 12:15	Combination of proton beam writing and nanoimprint lithography for fast prototyping of micro- and nano-structures	R. K. Dutta, IIT Roorkee
12:15 – 13:00	Engineering of noble metal particles and nanocomposites by energetic ion beams and possible applications	D. K. Avasthi, IUAC
13:00 – 14:00	<b>LUNCH</b>	
<b>SESSION – VI</b>		
<i>Chair: Dr. S. R. Bhattacharyya</i>		
14:00 – 14:20	Ion beam shaping and resizing of oxide nanostructures	T. Mohanty, JNU
14:20 – 14:40	Nano-Scale patterning in III-V semiconductors and alkali halide system by Ar <sup>+</sup> ions	O. P. Sinha, AMITY
14:40 – 15:00	Controlled manipulation of carbon nano pillars and cantilevers by focused ion beam	S. Dhamodaran, IIT Kanpur
15:00 – 16:30	<b>LABORATORY SESSION</b>	
16:30 – 17:00	<b>Tea Break</b>	
<b>SESSION – VII</b>		
<i>Chair: Dr. D. Kanjilal</i>		
17:00 – 17:45	Electronic structure and scaling studies of surfaces patterned by keV ion irradiation	S. Varma, IOP
17:45 – 18:30	Ion beam based synthesis of nanostructured materials	B. K. Panigrahi, IGCAR
18:45	<b>CULTURAL PROGRAMME</b>	
20:00	<b>DINNER</b>	

## SCHEDULE OF LECTURES FOR 2<sup>ND</sup> APRIL 2008 (WEDNESDAY)

TIME	TOPIC	SPEAKER
<b>SESSION – VIII</b> <i>Chair: Dr. D. K. Avasthi</i>		
9:00 – 9:45	Epitaxial growth of oxides via doping of foreign atoms	S. Dhar, National University of Singapore
9:45 – 10:30	Swift heavy ion induced recrystallization of materials	T. Som, IOP
10:30 – 10:45	<b>Tea Break</b>	
<b>SESSION – IX</b> <i>Chair: Dr. B. K. Panigrahi</i>		
10:45 – 11:30	Ion beam modification and characterization of semiconductor heterostructures	A. P. Pathak, Hyderabad Univ.
11:30 – 12:15	Trace elements research with PIXE	M. Sudarshan, UGC-DAE CSR, Kolkata Centre
12:15 – 13:00	Some recent developments in materials characterisation using ion beams	V. S. Raju, NCCCM
13:00 – 14:00	<b>LUNCH</b>	
14:00 – 16:00	<b>LABORATORY SESSION</b>	
16:00 – 16:30	<b>Tea Break</b>	
<b>SESSION – X</b> <i>Chair: Prof. D. P. Mahapatra</i>		
16:30 – 17:15	Simulation studies of swift heavy ions in materials	S. Mookerjee, IUAC
17:15-18:00	Grain growth and texturing of nanoparticle thin films under SHI irradiation	N. C. Mishra, Utkal Univ.
18:00 – 18:20	Electronic sputtering of fluoride thin films	M. Kumar, Allahabad University
18:20 – 18:40	The effects of 63 MeV Hydrogen ion irradiation on SiGe heterojunction bipolar transistors	A. P. Gnana Praksh, Mysore University
18:40 – 19:00	Radiation stability of pyrochlores in the electronic stopping regime	M. K. Patel, BARC
20:00	<b>DIRECTOR'S DINNER</b>	

## SCHEDULE OF LECTURES FOR 3<sup>RD</sup> APRIL 2008 (THURSDAY)

TIME	TOPIC	SPEAKER
<b>SESSION – XI</b>	<i>Chair: Prof. N. C. Mishra</i>	
9:00 – 9:45	Electron Cyclotron Resonance ion sources and their applications	D. Kanjilal, IUAC
9:45 – 10:30	Some interesting results regarding ion irradiation induced cluster emission	D. P. Mahapatra, IOP
<b>10:30 – 10:45</b>	<b>Tea Break</b>	
<b>SESSION – XII</b>	<i>Chair: Prof. A. P. Pathak</i>	
10:45 – 11:30	Tailoring of magnetic properties of thin films using heavy ions	A. Gupta, UGC-DAE CSR, Indore Centre
11:30 – 12:15	Ion irradiation effects on the magnetic behaviour in layered structures	B. N. Dev, IACS
12:15 – 12:35	Structural analysis of Mn-doped Ge and giant magnetoresistance	S. V. S. Nageswara Rao, Pondicherry University
12:35 – 12:55	MeV ion irradiation of Pt/Cr/Co multilayers: Correlation of structural and magnetic properties	J. K. Tripathi, IOP
<b>13:00 – 14:00</b>	<b>LUNCH</b>	
<b>SESSION – XIII</b>	<i>Chair: Dr. S. Varma</i>	
14:00 – 14:45	Ion beam mixing and phase formation	S. Dhar, National University Singapore
14:45 – 15:30	Ion beam mixing of metallic films due to inert gas ions in the medium keV energy regime	S. R. Bhattacharyya, SINP
<b>15:30 – 16:00</b>	<b>Tea Break</b>	
<b>SESSION – XIV</b>	<i>Chair: Prof. A. Gupta</i>	
16:00 – 16:45	Simulation of neutron damage in (Ti, P) modified steels using accelerator irradiation	B. K. Panigrahi, IGCAR
16:45 – 17:30	Ion beam damage simulation of steel	P. Barat, VECC
17:30 – 17:50	Making stainless steel resistant to irradiation damage	P. Ahmedabadi, BARC
<b>SESSION – XV</b>	<i>Chair: Prof. A. Khare</i>	
18:00 – 18:45	Special Evening Lecture on Challenges in Accelerator Physics	Amit Roy, IUAC
<b>20:00</b>	<b>DINNER</b>	

## SCHEDULE OF LECTURES FOR 4<sup>TH</sup> APRIL 2008 (FRIDAY)

TIME	TOPIC	SPEAKER
<b>SESSION – XVI</b>		
10:00 – 10:30	Comments/ Suggestions by the Participants	
10:30 – 12:00	Panel Discussion	
<b>12:00</b>	<b>WORKING LUNCH</b>	