

**Technical Program** of Workshop on the Use of Low Energy Ion Beams  
November 7 - 9, 2015, Institute of Physics, Bhubaneswar, India

**Day 1, November 7, 2015 (Saturday)**

**Session 01: Inaugural Session**

|               |                  |                               |  |
|---------------|------------------|-------------------------------|--|
| 9:15 - 9:20   | S. Panda         | Director, IOP                 | Welcome Address  |
| 9:20 - 9:35   | P. V. Satyam     | IOP, Bhubaneswar              | About the Workshop and Ion Beam facilities at IOP                          |
| 9:35 - 9:40   | A. K. Sinha      | Director, UGC-DAE-CSR, Indore | UGC-DAE-CSR and IOP Collaborative Programs                                 |
| 9:40 - 10:00  | V. S. Ramamurthy | Emeritus Professor            | Keynote Address  |
| 10:00 - 10:40 | D. Kanjilal      | Director, IUAC, Delhi         | Past, Present, and Future Accelerators and their Uses in Materials Science |
| 10:40 - 11:10 | Tea              | Tea                           | Tea  |

**Session 02: Chairman : Prof. A. K. Sinha**

|               |                  |                                |   |
|---------------|------------------|--------------------------------|---|
| 11:10 - 11:40 | S. E. Donnelley  | University of Huddersfield, UK | Probing Ion-Matter Interaction with in-situ Electron Microscopy                       |
| 11:40 - 12:10 | B. N.Dev         | IACS, Kolkata                  | Applications of Energetic Ion Beams in Condensed Matter Physics and Materials Science |
| 12:10- 12:40  | Sanjeev Aggarwal | Kurukshetra University         | Low Energy Ion Beam Engineering of Materials  |
| 12:40 - 13:10 | T. Som           | IOP, Bhubaneswar               | Low energy ion-beam patterning on Si surface and its applications                     |
| 13:10 - 14:30 | Lunch            | Lunch                          | Lunch   |

**Session 03: Chairman : Prof. L. Tribedi**

|               |                |                         |  |
|---------------|----------------|-------------------------|--|
| 14:30 - 14:45 | V.S. Vendamani | University of Hyderabad | Influence of Electronic Excitations on the Stability of Defect Associated Si-H Complexes in Silicon              |
| 14:45 - 15:00 | V. Siva        | NISER, Bhubaneswar      | MeV Ion beam induced modification of bi-metallic system  |
| 15:00 - 15:30 | Rahul Singhal  | MNIT, Jaipur            | Low Energy Ion Irradiation Effects in Shape Memory Alloy Thin Films  |
| 15:30 - 16:00 | Shikha Varma   | IOP, Bhubaneswar        | Photoabsorption, Bandgap modification and DNA Biocompatibility on Ion irradiated TiO <sub>2</sub> (110) surfaces |
| 16:00 - 16:20 | Tea            | Tea                     | Tea  |

### Session 04: Chairman: Prof. P. K. Bajpai

|                      |                          |  |   |
|----------------------|--------------------------|--|---|
| 16:20 - 16:50        | M. Sudarshan             | UGC-DAE-CSR,<br>Kolkata                                    | Low Energy Ion Beam for trace elemental sciences  |
| 16:50 -17:20         | P. Santhana Raman        | NUS, Singapore   | Micro- and Nano-sized Energetic Ion Beams: Simulation, Instrumentation and its Applications |
| 17:20 - 18:00        | Visit to IBL             | Visit to IBL   | Visit to IBL  |
| 18:00                | Tea @ IBL                | Tea @ IBL  | Tea@ IBL  |
|                      |                          |  |   |
| <b>19:30 onwards</b> | <b>Conference Dinner</b> | <b>Conference Dinner</b><br><b>At Institute of Physics</b> | <b>Conference Dinner</b>  |

### Day 2, November 8, 2015 (Sunday)

### Session 05: Chairman: Prof. S. K. Patra

|               |              |                     |   |
|---------------|--------------|---------------------|---|
| 09:30 - 10:00 | P. K. Bajpai | Bilaspur University | Facilities for Materials modification Using Low Energy Ion Accelerators at NCAR, Bilaspur                       |
| 10:00 - 10:30 | R. K. Dutta  | IIT Roorkey         | Chemical and Ion implantation based modification of metal oxide nanoparticles and their photocatalytic activity |
| 10:30 - 11:00 | A. Goswami   | SINP, Kolkata       | Journey through an esoteric path: From IOP Ion beam laboratory to FRENA   |
| 11:00 - 11:20 | Tea          | Tea                 | Tea   |

### Session 06: Chairman: Prof. B. N.Dev

|               |                |                                |  |
|---------------|----------------|--------------------------------|--|
| 11:20 - 11:40 | A. Chakraborty | UGC-DAE-CSR,<br>Kolkatta       |  |
| 11:40 - 12:10 | P. K. Sahoo    | NISER, Kolkata                 | Nanoscale material synthesis using 1-3 MeV ion beams: Novel bi-metallic systems            |
| 12:10 - 12:40 | L. C. Tribedi  | TIFR, Mumbai                   | Probing collective excitations in mesoscopic objects                                       |
| 12:40 - 13:10 | S. Mahapatra   | Indraprastha University, Delhi | Ion beam engineering of multifunctional hybrid nanostructures and plasmonic nanocomposites |
| 13:10 - 14:10 | Lunch          | Lunch                          | Lunch  |

### Session 07: Chairman: Dr. M. Sudarshan

|               |                          |                          |   |
|---------------|--------------------------|--------------------------|---|
| 14:10 - 14:40 | R. Acharya               | BARC, Mumbai             | Development and applications of in situ current normalized PIGE methods using low energy proton beams for non-destructive determination of low Z elements |
| 14:40 - 15:10 | P. Karmakar              | VECC, Kolkata            | Low energy ion beams for surface and interface engineering  |
| 15:10 - 15:40 | S. Bhattacharjee         | IIT Kanpur               | Direct writing using microwave plasma based multi-element focused ion beams : focusing, diagnostics and micro-structuring                                 |
| 15:40 - 16:10 | Pranesh Sengupta         | BARC, Mumbai             |   |
| 16:10 - 16:40 | B. Sundaravel            | IGCAR, Kalpakkam         | Ion Channeling for Materials Analysis   |
| 16:40 - 18:00 | Tea@IBL - Poster Session | Tea@IBL - Poster Session | Tea@IBL - Poster Session  |
| 18:00 - 18:30 | Visit to other Labs      | Visit to other Labs      | Visit to other Labs   |
| 20:00 onwards | Dinner @ IOP             | Dinner @ IOP             | Dinner @IOP   |

### Day 3, November 9, 2015 (Monday)

#### Session 08: Chairman: Prof. S. Varma

|               |                |                    |  |
|---------------|----------------|--------------------|--|
| 9:30 - 10:00  | B. Rout        | UNT, USA           | Microscopy for the Ion Beam Multi-dimensional Elemental Analysis of Biological Samples       |
| 10:00 - 10:30 | S. Raychudhuri | Tripura University | Yield and nutritional quality enhancement of Mung bean using integrated management approach. |
| 10:30 -11:00  | Santanu Ghosh  | IIT Delhi          | Room temperature ferromagnetism in ZnO by low energy ion implantation and irradiation        |
| 11:00 - 11:20 | Tea            | Tea                | Tea  |

## Session 09: Chairman: Prof. B. Rout

|               |                        |                     |   |
|---------------|------------------------|---------------------|---|
| 11:20 - 11:40 | A. Pandian             | IGCAR,<br>Kalpakkam | Ion irradiation effects on nuclear structural materials -TEM investigations |
| 11:40 - 12:00 | Sanghamitro Chatterjee | IIT Kanpur          | Modification of Wettability of Solid Surfaces by Ion-surface Interaction    |
| 12:20 - 12:20 | Sarita                 | Geetam, Vizag       | PIXE analysis of blood serum of pre and posttherapy cervix cancer patients  |
| 12:20 - 12:40 | Mollick                | IOP,<br>Bhubaneswar |   |
| 12:40 - 13:00 | Concluding Remarks     | Concluding Remarks  | Concluding Remarks  |
| 13:00 - 14:00 | Lunch                  | Lunch               | Lunch   |