



# 6<sup>th</sup> International Virtual Conference on Ion Beams in Materials Engineering and Characterizations (IBMEC 2020)

December 8-11, 2020

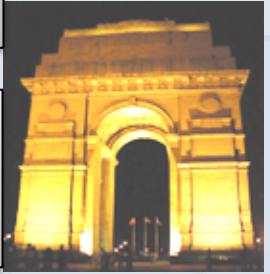
Inter-University Accelerator Centre, New Delhi-110067



The virtual conference will be preceded by

## International Virtual School on Ion Beams in Materials Science

December 1-5, 2020



The passage of an energetic heavy ion in material, creates a highly dense nano meter sized cylindrical zone of intense electronic excitation along the ion trajectory on a picosecond time scale. The unique feature of ion beam is widely used in materials engineering and characterization, which are the key areas of materials science research at IUAC and is the basic theme of the conference. The last conference in this series was held in October 2018.

The conference will be preceded by an international school on “Ion Beams in Materials Science” which will cover the basic processes and fundamentals of the ion beam techniques.

### Conference Topics

- ❖ Basic processes: energy loss and straggling
- ❖ Materials modifications in nanoparticles, thin films and multilayers
- ❖ Modification of materials (optical, electronic and magnetic)
- ❖ Surface structuring and patterning
- ❖ Ion beam induced epitaxial crystallization
- ❖ Interface mixing and electronic sputtering
- ❖ Radiation induced modifications in biological systems
- ❖ On-line/ in-situ measurements (ERDA, IL, Raman, XRD etc.)
- ❖ Simulation studies for irradiation induced effects
- ❖ Phase transformations and band gap Engineering
- ❖ Plasmonic, Energy and Sensor materials

### School Topics

- ❖ Ion interaction with materials: Energy loss processes
- ❖ Consequences of large energy density in metals, semiconductors, insulators
- ❖ Models: Coulomb explosion, thermal spike, hammering effect
- ❖ Phase transformations, amorphization and crystallization
- ❖ Characterization by RBS, ERDA, SIMS
- ❖ Sputtering: Nuclear, Potential and Electronic
- ❖ Interface Modifications
- ❖ Interaction of energetic ions with nano-dimensional systems, Simulations
- ❖ Plasmonic, Materials for energy, Surface Patterning.

#### Hands on software/demonstration experiments

TRIM/SRIM software, RBS experiment, RUMP/SIMNRA simulation

### Registration

Online Registration can be done using the google form link provided at IUAC website/ IBMEC/ IBMS 2020

### Abstract Submission

The details will be available from Oct 20, 2020 at google site:  
<https://sites.google.com/site/ibmec6th2020>

### Local Organizing Committee

A. Mishra  
A. Tripathi  
B. K Sahu  
D. Kabiraj  
F. Singh  
I. Sulania  
K. Asokan  
P. K. Kulriya  
P. Kumar  
R. C. Meena  
S. A. Khan  
V. V. Sivakumar

#### Patron

Prof. A. C Pandey, Director  
IUAC, New Delhi.

#### Chairman

Dr A Tripathi, Scientist IUAC,  
New Delhi.

### Important Dates

Registration/ abstract submission opens : Oct 20, 2020  
(both school and conference)  
Last Date for abstract submission : Nov 05, 2020  
Intimation of acceptance : Nov 15, 2020  
Registration for School ends on : Nov 05, 2020

### Contact Details

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#### IBMS 2020

Dr K Asokan, Convener  
Dr I Sulania, Co-Convener

#### IBMEC 2020

Dr F Singh, Convener