

## Scientific Program

### International Symposium on Vacuum Science & Technology and its Application for Accelerators (IVS-2012)

February 15-17, 2012  
Variable Energy Cyclotron Centre

#### Tuesday, Feb 14, 2012

15:00 - 18:00 hrs : Registration

#### Wednesday, Feb 15, 2012

09:00 – 09:30 hrs : Registration at Symposium venue

09:30 – 10:30 hrs : Inaugural session

10:30 – 11.00 hrs : TEA

**11:00 – 12.30 hrs:** Session 1 (Plenary) : **Theme Talks**  
Session Chairman Dr. Alok Chakrabarti

IT - 01 (30 min): **Vacuum Systems of Accelerators at Indus Complex**  
S. K. Shukla, *Raja Ramanna Centre for Advanced Technology, Indore*

IT - 02 (30 min): **Experience with first full year of LHC operation**  
G. Bregliozzi, *et.al, CERN, CH - 1211 Geneva 23*

IT - 03 (30 min): **Vacuum System of the Large Cyclotrons at VECC**  
Gautam Pal, *VEC Centre, Kolkata*

**12:30-13:15 hours** : **IVS Felicitation Function**

**13:15 – 14.30 hrs** : **LUNCH**

**14:30 – 16.10 hrs:** Session 2 (Plenary) : Large Vacuum Systems-Accelerators  
Session Chairman Prof. Y.C. Saxena

IT - 04 (30 min): **Operational experience and upgrade of the TRIUMF cyclotron vacuum system**  
Y. Bylinski, D. Yosifov, *TRIUMF, Canada*

IT - 05 (30 min): **Recent Developments in RIKEN RI-Beam Factory**  
Osamu Kamigaito, *Accelerator Group, RIKEN Nishina*

IT - 06 (20 min): **Vacuum system at IUAC**  
A. Mandal, *Inter University Accelerator Centre, New Delhi*

IT - 07 (20min): **Superconducting heavy ion LINAC booster at the TIFR.**  
R. G. Pillay, *Tata Institute of Fundamental Research, Mumbai*

**16:10 – 16.40 hrs** : **TEA**

**16:40 – 18.10 hrs:** Parallel Session 3A : Hall-1 (Large Vacuum system)

**Session Chairman** Dr. S. R. Gowarikar

**Oral 01: Abstract ID: 09 (15 min)**

**Design, fabrication, and performance testing of a vacuum chamber for pulse compressor of a 150 TW Ti:sapphire laser,** P. K. Tripathi, *et.al.*, RRCAT, Indore

**Oral 02: Abstract ID: 20 (15 min)**

**Design, Installation and Commissioning of new Vacuum Chamber for Analysing Magnet of K-130 Cyclotron,** Bidhan Ch. Mandal, *et.al.*, VECC, Kolkata

**Oral 03: Abstract ID: 25 (15 min)**

**Vacuum Brazing of Accelerator Components,** Rajvir Singh, *et.al.*, RRCAT, Indore

**Oral 04: Abstract ID: 48 (15 min)**

**Design and construction of a target chamber and associated equipments for the BARC Charged Particle Detector Array,** Bency John Vilavinal, *et.al.*, Bhabha Atomic Research Centre

**Oral 05: Abstract ID: 50 (15 min)**

**Influence of Wall Conditioning on ADITYA Plasma Discharges,** R. L. Tanna, *et.al.*, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat

**Oral 06: Abstract ID: 54 (15 min)**

**K-130 Cyclotron Vacuum System,** R. C. Yadav, *et.al.*, VECC, Kolkata

**16:40 – 18.10 hrs:** Parallel Session 3B : Hall-2 (Application of Vacuum Technology)

**Session Chairman** Dr. S.N. Joshi

**Oral 07: Abstract ID: 06 (15 min)**

**Multipurpose Vacuum Induction Processing System,** M, Govindaraju, *et.al.*, NFTDC, Hyderabad

**Oral 08: Abstract ID: 10 (15 min)**

**Fabrication of Niobium Superconducting Accelerator Cavity by Electron Beam Welded Joints**  
Tanmay K. Saha, Jayanto Mondal, K. C. Mittal, A. V. Bapat, K. G. Bhushan  
Bhabha Atomic Research Centre

**Oral 09: Abstract ID: 12 (15 min)**

**Study on Condensation and Recycle of Liquid Metal in Vacuum,** Jaya Mukherjee, *et.al.*, Bhabha Atomic Research Centre

**Oral 10: Abstract ID: 16 (15 min)**

**Broadband Antireflection Coating on Zincsulphide Window for Shortwave Infrared cum Night Vision System,** Anand Shanker Upadhyaya, Prasun Kumar Bandyopadhyay, DRDO

**Oral 11: Abstract ID: 22 (15 min)**

**Evaluation of Ti-Zr-V (NEG) Thin Films for Their Pumping Speed and Pumping Capacity**  
Tripti Bansod, *et.al.*, Raja Ramanna Centre for Advance Technology

**Oral 12: Abstract ID: 103 (15 min)**

**Pulsed and RF Glow Discharge in Helium Atmosphere,** Pooja Gulati, *et.al.*, CSIR-Central Electronics Engineering Research Institute, Pilani

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**18:30 - 20:00**

**Cultural Programme**

**20:00 – 21:30 hrs:**

**Dinner**

## Thursday, Feb 16, 2012

**09:30 – 11.30 hrs:** Session 4 (Plenary) : Vacuum Systems, Technology & Applications  
Session Chairman Shri A. S. Raja Rao

IT – 08 (30 min): **Minimizing contamination of SRF niobium cavities for achieving high performance**  
Ganapati Myneni, Accelerator R&D, Jefferson Lab, Newport News, VA, USA

IT – 09 (30 min): **The LIGO Vacuum Systems: Challenges and Solutions**, Michael Zucker, LIGO  
Laboratory, MIT, USA

IT – 10 (20 min): **Activities towards development of a high Intensity proton accelerator for ADS**  
P. Singh, Bhabha Atomic Research Centre, Mumbai

IT – 11 (20 min): **Role of IISc in the development of Cryopumps for fusion applications**  
S. Kasthuriangan, CCT, IISc, Bangalore.

IT – 12 (20 min): **Turbo Pumps – From Theory to Practice**, Andreas Schopphoff, Pfiffer

**11:30 – 12.00 hrs** : TEA

**12:00 – 13.15 hrs:** Parallel Session 5A : Main Hall (Vacuum Technology)  
Session Chairman Dr. S.K. Gupta

Oral 13: Abstract ID: 08 (15 min)  
**Establishment of a Force Balanced Piston Gauge for Very Low Gauge and Absolute Pressure Measurements at NPL, India**, Arun Vijayakumar, *et.al.*, NPL

Oral 14: Abstract ID: 21 (15 min)  
**Development and UHV Testing of LN2 Cooled Titanium Sublimation Pump**, B. K. Sindal, *et.al.*, Raja Ramanna Centre for Advance Technology

Oral 14: Abstract ID: 28 (15 min)  
**Study of Hydrogen Pumping through Condensed Argon in Cryogenic pump**, K. A. Jadeja, S. B. Bhatt, Institute for plasma research, Bhat, Gandhinagar

Oral 16: Abstract ID: 57 (15 min)  
**In- Service Helium Leak Testing of Vacuum Furnace**, Anis Ahmad, *et.al.*, QAD, BARC

Oral 17: Abstract ID: 68 (15 min)  
**Vacuum System in the IN-TF and Optimisation of Pumping Requirements**, Rambilas Prasad *et.al.* presented by A.K. Chakraborty, ITER-India, Institute for Plasma Research

**12:00 – 13.15 hrs:** Parallel Session 5B : Hall-1 (Vacuum Technology & Applications)  
Session Chairman Dr. A.K. Ray

Oral 18: Abstract ID: 01 (15 min)  
**Open Loop, Auto Reversing Liquid Nitrogen Circulation Thermal System for Thermo Vacuum Chamber**, MCA Naidu, ISRO

Oral 19: Abstract ID: 81 (15 min)

**Conceptual Design of Vacuum Chamber for testing of High Heat Flux Components using Electron Beam as a Source**, Mohammad Shoaib Khan, *et.al.*, *Institute for Plasma Research*

**Oral 20: Abstract ID: 86 (15 min)**

**Vacuum System Design for PWT Linac Structure**, Saket Kumar Gupta, Sanjay Chouksey, *Raja Ramanna Centre for Advanced Technology, Indore*

**Oral 21: Abstract ID: 74 (15 min)**

**Development of UHV Compatible Carbon Attenuator Coating on APBN Support Rods for a Helix TWT**, Suneeta Arya, Vishnu Srivastava, *CEERI*

**Oral 22: Abstract ID: 80 (15 min)**

**Vacuum Aspects of ITER Diagnostic Systems**, Kaushal Patel, *IPR*

**13:15 – 14.20 hrs** : LUNCH

**14:20 – 16.10 hrs:** Session 6 (Plenary) : Large Vacuum Systems-Plasma and Light Sources  
**Session Chairman**

IT – 13 (30 min): **The Development of the Unique and Large Cryopump System for the Heating Neutral Beam Injection of ITER**, St. Hanke, *Karlsruhe Institute of Technology, Karlsruhe, Germany*

IT–14 (20 min): **Development of High Power Vacuum Tubes for Accelerators and Plasma heating**, Vishnu Srivastava, *CSIR-Central Electronics Engineering Research Institute, Pilani*

IT – 15 (20 min): **Response Time Reduction and Sensitivity Increase during Mass Spectrometric Helium Leak Detection of very large size vacuum systems by Hood Technique**  
Venkat Ramani, *ADITYA High Vacuum Pvt. Ltd., Ahmedbad 382430, Gujrat, India*

IT – 16 (20 min): **Vacuum system for Fusion Devices**, S. B. Bhatt, *Institute for Plasma Research, Bhat, Gandhinagar – 382428, INDIA*

IT – 17 (20 min): **Superconducting e-Linac Project at VECC Kolkata**, Vaishali Naik, *DAE/VECC, Kolkata, India*

**16.10 – 16.30 hrs:** TEA

**16.30 – 17.45 hrs:** **POSTER SESSION**

**Session Chairmen** Prof. R. Ranganathan, Shri Srikrishna Gupta, Dr. V. S. Pandit,

**Abstract ID: 4, 7, 13, 14, 18, 26, 32, 37, 39, 41, 42, 43, 49, 52, 55, 60, 62, 69, 75, 76, 83, 84, 89, 119, 2, 3, 15, 23, 24, 27, 29, 30, 33, 38, 40, 45, 47, 51, 53, 73, 79, 92, 96**

**17:35 -17:45** TEA

**17:45-19:15**

**A. S. Divatia Memorial Lecture**

**A Journey Through Our Indigenous Efforts to Grow Particle Accelerator Technology in India**, V. C. Sahni, *DAE Homi Bhabha Chair Professor, BARC*

**19:30 – 22:00 hrs:** **BANQUET**

## Friday, Feb 17, 2012

**09:30 – 11.30 hrs:** Session 8 (Plenary) : Applications of Vacuum Technology  
Session Chairman Shri C. Mallik

IT-18 (20 min): **Low Energy ECR based Ion Beam Facility at VECC**, G. S. Taki et. al.  
VECC Kolkata

IT-19 (20 min) **Sustained Performance of 8 MeV Microtron**, Ganesh Sanjeev, Microtron Centre,  
Mangalore University

IT-20 (20 min): **Technological Aspects of High Power Klystron Development**, L. M. Joshi, *Central  
Electronics Engineering Research Institute, Pilani 333 031*

IT- 21 (20 min): **Development of Indigenous Electron Beam Machines for Material Processing –  
Overview of BARC Activity**, A. V. Bapat , *Bhabha Atomic Research Centre, Trombay,  
Mumbai 400 085*

IT- 22 (20 min): **Electron Linac Development for Radiation Processing and Neutron Production**  
K.C. Mittal, *Electron Beam Center, APPD/ BARC, Mumbai 400 085*

IT-23 (20 min): **Formation of nano-patterns by ion beam sputtering**, D. Ghose, *Saha Institute  
of Nuclear Physics, Sector-1, Block-AF, Bidhan Nagar, Kolkata 700 064*

**11:30 – 11:50 hrs** : TEA

**11:50 – 13:10 hrs:** Session 9 (Plenary) : Vacuum Technology and Applications  
Session Chairman Dr. L. M. Gantayet

IT-24 (30 min): **ITER Project; Vacuum Vessel and Vacuum Requirements**  
Kimihiro Ioki , ITER Organization, France

IT-25 (20 min): **New Approach on vacuum requirement in UHV/XHV systems by Non Evaporable  
Getter Technology**, Enrico Maccallini and Paolo Manini, *Saes Getters S.p.a., Viale Italia  
77, 20020 Lainate – Italy*

IT-26 (20 min): **Review and status of dry vacuum pump technologies and their application in High  
Energy Physics**, Murray Liston, *Edwards*

IT-27 (20 min): **PECVD/ECR/HWCVD Multichamber System with Robotic Substrate Handling  
System for Deposition of Thin Film Electronic Devices**, P. Rava, *Elettrovava s.p.a.,  
Via Don Sapino 176, 10078 Venaria, Torino Italy*

**13:20 – 14.20 hrs** : LUNCH

**14:20 – 15.10 hrs:** Session 10 Forum for Industry  
Session Chairman Dr. B. Sarkar

**15:10 – 16.10 hrs:** Poster Session  
Session Chairmen Prof. R. Ranganathan. Shri Shrikrishna Gupta, Dr. V.S. Pandit

**Abstract ID: 108, 109, 114, 115, 117, 122, 123, 5, 11, 17, 19, 31, 34, 35,  
44, 46, 58, 59, 61, 63, 65, 67, 72, 77, 90, 91, 94, 95, 98, 99,  
100, 101, 102, 104, 105, 106, 107, 116, 0, 66, 71, 85, 97, 121**

**16:10 – 16:30 hrs:**

**CONCLUDING SESSION**

**Session Chairman**

**R. K. Bhandari**

**16:30 – 17.00 hrs**

**: TEA**