



Theme meeting on Challenges of Mechanical Engineering for Superconducting Accelerators

March 25-26, 2011

Variable Energy Cyclotron Centre, Kolkata

Topics

Superconducting magnets
Cryostat
Coil winding
Operational experiences of
larger superconducting
magnets

Topics

Superconducting RF cavities
RF resonator structures
for cyclotrons
Cryogenic plants and lines
Ultra high vacuum
2K cryogenics



Contact

Anjan Dutta Gupta
Convenor
Variable Energy Cyclotron Centre
1/AF Bidhan Nagar
Kolkata 700 064
India
Phone: 033 2318 4102
Fax: 033 2334 6871
Email: anjan@vecc.gov.in

This theme meeting will target mechanical engineering issues of the superconducting accelerators. The theme will be "from paper to reality" - making things work for superconducting accelerators. Superconducting machines being very compact, the criticalities of its design and fabrication enhance by several orders. Moreover, with the introduction of the superconducting RF cavities, the technologies have gone par excellence and require a new dimension of design and fabrication methodologies. This meeting will cover those areas.

Local Organizing Committee

Subimal Saha, Chairman, VECC
Bidhan Ch. Mandal, VECC
Barun Kumar Das, VECC
Chinmoy Nandi, VECC
Gautam Pal, VECC
Pranab Bhattacharyya, VECC
Subrata Saha, VECC
Sujit Saha, VECC
Surajit Pal, VECC
Anjan Dutta Gupta, Convenor, VECC

Sponsored by : Board of Research in Nuclear Sciences, Department of Atomic Energy, Government of India.

Theme Meeting on Challenges of Mechanical Engineering for Superconducting Accelerators

2011

Programme

March 25, 2011

Venue: Ajay Divatia Lecture Hall, VECC

09:30 - 10:00 **Inauguration**

Session – 1: Superconducting Magnets

Design, fabrication, coil winding, cryostats, related cryogenics, etc. and operational experiences of large superconducting magnets

10:00 Mechanical design issues of superconducting magnets and cryostats – Gautam Pal, VECC

10:25 Fabrication challenges of superconducting magnets and cryostats – A. Dutta Gupta, VECC

10:50 **High Tea**

Session – 2: Superconducting Magnets

... Continuation of Session-1

11:20 Superconducting Coil for cyclotron and SMES – Subimal Saha, VECC

11:45 Cryogen delivery system required for the superconducting magnets – Chinmoy Nandi, VECC

12:10 Operational experience of superconducting cyclotron magnet & cryostat – P. Bhattacharyya, VECC

12:35 Superconducting Magnet Programme at IUAC – Soumen Kar, IUAC

13:30 **Lunch**

Session – 3: Superconducting RF cavities

Mechanical engineering design issues, fabrication challenges of cavities, cryo-modules design and related cryogenics, etc.

14:30 Development of SCRF Cavity and Associated Infrastructures – S.C. Joshi, RRCAT

14:55 Technical Challenges in Cryo module design – P. Khare, RRCAT

15:20 Mechanical Challenges on Development of Large Size Cryomodules for Superconducting Linear Accelerator at IUAC – T.S. Datta, IUAC

15:45 SCRF Cavity Development at BARC – K. C. Mittal, BARC

16:10 **Tea**

Session – 4: Special Session

Felicitation programme

16:40 **Experiences with Cyclotrons: Special lecture by Shri. Jayanta Chaudhuri, VECC**

17:10 **Felicitation of Shri Jayanta Chaudhuri, Head-MEG, VECC – for completion of 60 years**

18:00 **High Tea**

18:30 Visit to Superconducting Cyclotron

19:30 **Dinner**

Theme Meeting on Challenges of Mechanical Engineering for Superconducting Accelerators

2011

March 26, 2011

Venue: Ajay Divatia Lecture Hall, VECC

Session – 5: Other important systems of superconducting accelerators

Instrumentations, Cryogenic delivery systems, RF resonators for superconducting accelerators, Design and fabrication aspects of UHV systems, design of special superconducting magnets etc.

- 10:00 Instrumentation for large superconducting magnets – Tamal Bhattacharyya, VECC
10:25 Fabrication of RF resonators & RF amplifier systems for compact superconducting accelerators – J. J. Roy, BARC
10:50 Superconducting e- LINAC Project at VECC – Vaishali Naik
11:15 Commissioning and operation of Superconducting linear accelerator at Inter University Accelerator Centre - Subhendu Ghosh, IUAC
11:40 **Tea**

Session – 6: Other important systems of superconducting accelerators

... Continuation of Session-5

- 12:00 Design of Dipole Magnets for FAIR Project – Subrata Saha, VECC
12:25 Design of large aperture superconducting quadrupole magnet at FAIR – Suvadeep Roy, VECC
12:50 Some considerations of Design & Manufacturing of Ultrahigh Vacuum Systems & Components – Amitava Sur, Ex-VECC
13:30 **Lunch**