



9th SERB School on
**Magnetically Confined Plasmas &
 Societal Applications of Plasma**
 28 Sep - 17 Oct, 2020



Sponsored by :

Science and Engineering Research Board (SERB)

Department of Science & Technology (DST), New Delhi

<http://www.serb.gov.in/home.php>

Organized by :

Institute for Plasma Research

An aided Institution of DAE, Gandhinagar

<http://www.ipr.res.in>



Preamble: Studies about Plasma, the fourth state of matter, have grown by leaps and bounds because of potential applications in many aspects of human life. The applications range from Energy, Agriculture and Medicine to various industries. Energy production through controlled thermo-nuclear fusion, which is environment friendly is also one of the major applications of plasma. Since the realization of fusion through magnetic confinement scheme called tokamak is well ahead of other schemes, it is necessary to bring awareness about this scheme among the young minds to generate required manpower in this challenging endeavor.

In this connection, IPR has been engaged for the last few decades and has two operational tokamaks namely, Aditya-Upgrade and Steady-state Superconducting Tokamak -1 (SST-1). On the international front, India is a partner in the ITER project (<http://www.iter.org>) which is being built at Cadarache, France. India will contribute ~9% of the project cost and will get access to all the technologies involved in the project. While IPR (the nodal agency for the ITER project) is working towards the completion of its ~9% contributions, it needs a huge national effort to learn and master the remaining technologies of the project to realize a fusion power plant in India.

Motivation: This school will prepare and motivate research students, post-doctoral fellows and young lecturers towards bringing awareness through lectures and hands-on experiments in this fascinating area and the spin-off technologies which have potential applications.

The school will have lectures covering six major areas namely:

- ◆ Fundamentals of Plasma
- ◆ Fusion and Magnetic Confinement
- ◆ Plasma diagnostics
- ◆ ITER-Project
- ◆ Plasma Simulation
- ◆ Societal Applications of Plasma

and selected hands-on experiments, for e.g. :

- ◆ Plasma production & Paschen law
- ◆ Langmuir probe
- ◆ Emission Spectroscopy
- ◆ Arc Plasma & Enthalpy probe

as well as participation in (Aditya upgrade & / or SST-1) live tokamak operations.

All lectures will be delivered by scientists and engineers from all over the country, working in the relevant areas. Some popular lectures will also be delivered by eminent speakers.

Participation: The school is primarily meant for young research students who have just started their PhD work in plasma science & technology or related areas. This school will also be an opportunity for young faculties and students in universities to get acquainted with this area of research. A limited number of highly motivated graduate / post graduate students in physics may also be admitted. *Total number of participants will be limited to 40.* All the selected participants will be provided to-and-fro III AC train or bus fare apart from free lodging and boarding.

How to apply: Applicants need to fill in the on-line application form in the school website (<http://www.ipr.res.in/SERB2020>). The print-out of the filled applications also need to be sent to the following address, with the approval of respective theses advisors and / or heads of the department / institution:

SERB2020,
Institute for Plasma Research, Near Indira Bridge
Bhat, Gandhinagar 382 428 (Gujarat)
E-mail : serb2020@ipr.res.in

Patron : Prof. Shashank Chaturvedi, Director, IPR

National Planning Committee

- Prof. D. S. Patil, IIT Bombay, Chairman
- Prof. A.K.Das, OSHEC, Bhubaneswar, Special Invitee
- Prof. H. Bailung, IASST, Guwahati, Member
- Prof. P. A. Naik, Director, RRCAT, Indore, Member
- Prof. Manoranjan Khan, Jadavpur University, Member
- Prof. K. Subramanian, IUCAA, Pune, Member
- Prof. Pallavi Jha, Lucknow University, Member
- Dr. S. K. Nema, FCIPT-IPR, Gandhinagar, Member
- Dr. Amitava Roy, SERB, DST, Programme Coordinator
- Dr. Nilotpal Ghosh, SERB, DST, Member Secretary

LOC Chairman: Dr. Ravi A.V. Kumar

School Director: Dr. N.Ramasubramanian

School Co-director: Dr. P.Bandyopadhyay

School Website:

<http://www.ipr.res.in/SERB2020>

All Communications only through post / email

serb2020@ipr.res.in

Deadlines

Application Starts: March 16, 2020

Last date of application: May 29, 2020

Intimation to participants: June 10, 2020

Confirmation by participants: June 26, 2020