



The Abdus Salam  
International Centre  
for Theoretical Physics



# Joint ICTP-IAEA Fusion Energy School

Participants will attend two week-long intensive school featuring experts' lectures from the academia and the private sector, to develop a wider understanding of fusion energy and provide them opportunities to connect with leading researchers.

Research into fusion is entering an exciting new era with several large facilities aiming to achieve the crucial milestone of net energy gain. To create sustained fusion reactions, fusion fuel must be heated to 100 million degrees. The fuel is rapidly converted to plasma, which is extremely difficult to confine and control. New international facilities using high energy lasers and superconducting magnets are crucial steps on the way to reliable fusion energy but there are still many challenges to overcome. This school will prepare to address these challenges. Participants will be introduced to the skills in computational and experimental plasma physics, and conduct cutting-edge research and technology under the guidance of leading international scientists and engineers. Participants will have the opportunities to interact with world-class international fusion experts, making the Fusion Energy School an excellent way to explore your interest in fusion and prepare for a career in this field.

## CORE LECTURES:

- Plasma Physics for Fusion
- Magnetic Confinement Fusion
- Inertial Confinement Fusion
- Plasma Diagnostic Techniques
- Fusion Energy Technology
- Fusion Fuel Cycle
- Fusion Safety and Regulation
- Fusion Legal and Institutional Aspects
- Workshop on Designing DEMOs and Pilot Plants
- Fusion Laboratory

## OPTIONAL LECTURES:

- High Performance Computing
- AI/ML Methods in Fusion
- Low Temperature Plasma Science and Technology
- Laser Interactions and High Density Plasmas
- Astrophysical Plasmas
- Lasers and Atom-Light Interactions
- Nuclear Data



6 - 17 May 2024



Trieste, Italy



## Applications and Deadlines:

For applicants requesting financial and/or visa support:  
**15 February 2024**

For all other applicants:  
**1 April 2024**

## DIRECTORS:

M. BARBARINO, IAEA, Austria  
R. KAISER, ICTP, Italy  
S. MAHAJAN, University of Texas, USA  
R. WAGNER, IAEA, Austria

## GRANTS:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

## FURTHER INFORMATION:



E-mail: [smr3936@ictp.it](mailto:smr3936@ictp.it)

Web: <https://indico.ictp.it/event/10474/>

Female scientists are encouraged to apply.

