

Guide to Application to the 2025 JT-60SA International Fusion School (JIFS)

JT-60SA is the largest tokamak in operation, designed and built jointly by Japan and Europe. When fully commissioned and equipped with high-power heating systems, JT-60SA will produce long-pulse, high-beta and highly shaped plasmas. The JT-60SA machine, laboratories, experimental programme and its associated modelling activity can be an ideal playground for the training of Japanese and European students and young professionals to foster the new generations of fusion physicists and engineers.

Objectives

The JT-60SA International Fusion School (JIFS) addresses the main aspects of fusion research, from plasma physics to engineering, with special attention to their combination into tokamak operation. The JIFS school aims to prepare the next generation of fusion physicists and engineers from Japan and Europe (under the EURATOM fusion programme), focusing on:

Supplementing their training by lectures, group works and visits, taking advantage of the JT-60SA facility, environment, experiences and data for practical examples and applications.

Establishing and consolidating connections between selected Japanese and European students and young professionals, who could ideally be involved together in the future JT-60SA and ITER operation, scientific exploitation, and upgrades.

Participating institutions

The JT-60SA school is jointly funded and organised by QST (National Institutes for Quantum Science and Technology, Japan) and the EUROfusion Consortium, with the participation of lecturers and advisors from a number of Japanese and European universities and research institutes. The school is supported by Fusion for Energy under the auspices of the Broader Approach agreement between Japan and Europe for fusion energy research.

Structure

The school take place every year at the QST Naka-site in Japan. The 2-week programme includes lectures, visits (e.g. torus hall, plant systems, control room and laboratories) and practical exercises (using experimental facilities in the JT-60SA laboratories, JT-60SA data, analysis and computational tools). The school also aims to provide a permanent background of online information and alumni network, as well as means to prepare and continue exchanges among students and between students and lecturers.

The school is co-directed by Ambrogio Fasoli (EUROfusion) and Shunsuke Ide (QST). The scientific secretaries of the school are Eva Belonohy (EUROfusion) and Seiya Nishimura (QST). The school advisory board, composed by representatives of the participating institutions, support the directors on the definition of the school programme, choice of lecturers and selection of students.

Please find more information on the school's website: <https://indico.euro-fusion.org/e/jifs2025>.

Third edition

The third edition of the school will be held at the QST Naka site from 1-12 September 2025. The programme will include general lectures on plasma physics and tokamaks, its subsystems and operation with specific lectures on innovations in fusion research. Advanced topical lectures and practical exercises will be carried out in groups of four students. Students will have the opportunity to present their own research as well as the work carried out in the practical sessions. Social activities will be organised in some evenings and in the weekend between the two school weeks.

The school attendance is limited to a selected number of students (20), equally distributed between Japan and Europe, to allow for efficient supervised exercises, group work and strong interaction with lecturers.

Following the JT-60SA school, Japanese students will also have an opportunity to visit the tokamak facilities in Europe. Details and the European student participation in the European tour of tokamak facilities will be provided at a later date.

Participation

Participation is open to PhD students and to physicists and engineers in the early phase of their careers, who are presently involved in fusion research. Education at Master level and affiliation to a European or Japanese research institute or University are required (independently of applicants' nationality). A good working knowledge of the English language is necessary.

The mission expenses (travel and subsistence costs) will be supported by QST for Japanese participants and by EUROfusion for participants belonging to institutes associated with EUROfusion. Costs claimed for reimbursement by EUROfusion participants must be in line with the Internal Funding Rules of the EUROfusion Consortium. European participants outside EUROfusion should be funded by their employers.

Accommodation is organised by the school in a suitable hotel near the QST Naka-site with single en-suite rooms for each participant. Transportation between the accommodation and the Naka institute will be provided by the JIFS organization.

Selection process

The selection is primarily based on excellence. Motivation to start or continue a career in fusion as well as broad interest in all the aspects of fusion research (physics - theory and experiments, engineering, operation of fusion facilities) will be criteria for selection, as well as motivation for teamwork in an international and multi-cultural environment. The school promotes diversity and gender parity.

The evaluation of the applications is carried out by the directors of the JT-60SA International Fusion School assisted by an expert panel. Members of the expert selection panel are nominated by the European and Japanese directors of the school. Decision by the expert panel about selections will be available by the beginning of June.

Applications

Applications should be submitted through the JIFS website: <https://indico.euro-fusion.org/e/jifs2025>, not later than 8th May 2025.

Applicants must upload:

- their CV (maximum 2 pages in pdf format)
- a letter (in pdf format) signed by their manager or thesis supervisor, certifying that the applicant will be allowed to attend the school, if selected
- a recommendation letter (in pdf format).

Personal Data Protection (GDPR)

The EU General Data Protection Regulation (GDPR) is a privacy and data protection regulation in the European Union with effect from the 25th May 2018. The GDPR imposes obligations on organisations that control or process personal data and introduces rights and protections for EU citizens. EUROfusion is committed to ensuring that candidates' privacy is protected and strictly adhere to the provisions of all relevant Data Protection legislation, including GDPR, ensuring all personal data is handled in line with the principles outlined in the regulation.

In compliance with article 13 of the GDPR, EUROfusion provides the following information:

Type of Data processed:

Personal data present in the application or eventually communicated with supplementary documents of the application, by the candidates. The data processed does not fall within the scope of application of articles 9 and 10 of the Regulation.

Name and address of the Controller:

- Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.
- Hofgartenstraße 8, 80539 Munich
- Phone: +49 (89) 2108 -0

Name and address of the Data Protection Officer:

- Heidi Schuster
- Hofgartenstraße 8, D-80539 Munich
- Phone: +49 (89) 2108-1554
- Email address: datenschutz@mpg.de

The personal data collected within the present call for participation will be processed for the sole use of the evaluation and selection of the candidates of the JT-60SA International Fusion School (JIFS).

The candidates express their consent to the processing of personal data (GDPR, art. 6, par. 1, letter a) necessary for carrying out the selection procedure and to allow EUROfusion Programme Management Unit (PMU) to fulfil the obligations related to the Grant Agreement (GDPR, art. 6, par. 1, letter b).

The data will be processed:

through the use of manual and automated systems;

by people authorized to carry out these tasks, pursuant to the law;

with the adoption of adequate measures to guarantee the security of the data and to prevent access to the same by unauthorized third parties.

There are no automated decision-making processes.

The recipients of the personal data are the EUROfusion PMU members involved in the process and the evaluation panel composed by external experts.

The personal data collected for the purpose of the selection will be stored for the period of the evaluation process (May-December 2025). Following the decision of the JIFS School Directors on the list of candidates to be awarded a place in the JIFS school, the personal data included in not awarded applications will be deleted. As regards the personal data provided in the awarded applications, they will be stored in the EUROfusion PMU systems until the administrative process is completed related to attending the JIFS school in Japan.

The candidates are entitled to the rights of access (GDPR, Article 15), rectification (GDPR, Article 16), erasure (GDPR, Article 17, para. 1), restriction of processing (GDPR, Article 18), data portability (GDPR, Article 20) and withdrawal of consent (GDPR, Article 7, para. 3). They also have the right to submit an objection to the supervisory authority. For the Max-Planck-Gesellschaft (MPG), this is the Bayerische Landesamt für Datenschutzaufsicht, Postfach 1349, 91504 Ansbach, Germany.