## Announcement of the event “How to Build a Fusion Power Plant: Three Days to Design the Future [feat. J-Fusion]”

— An intensive program for students and early-career professionals envisioning the future of fusion power —

The **Fusion Industry Research Center**, Keio University (Location: Kohoku-ku, Yokohama | Director: Shutaro Takeda) is pleased to announce that it has been selected for the **FY2025 National Institute for Fusion Science (NIFS) Schooling & Networking Program (Fusion Science School)**.

Centered around the newly established Fusion Industry Research Center, Keio University will host an intensive three-day program titled **“How to Build a Fusion Power Plant: Three Days to Design the Future [feat. J-Fusion]”**, to be held from **Friday, January 30 to Sunday, February 1, 2026**, in **co-organization with the Japan Fusion Energy Council (J-Fusion)**.

This program provides a multifaceted learning experience on the social implementation of fusion energy, bringing together perspectives from science, engineering, industry, policy, and society to explore the future of energy systems.

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### Program Overview

This intensive program is designed for **early-career professionals and students** (graduate students, undergraduate students, and technical college students in their 4th year or above) who are interested in fusion energy. The curriculum is structured around three core pillars:

- **Understanding Fusion** — Systematically grasping the full picture of fusion energy
- **Experiencing Fusion** — Observing research and industrial sites firsthand
- **Creating Fusion** — *Fusion Hackathon*

Through lectures, site visits, and collaborative group work, participants will develop the ability to think about fusion energy as a personal and societal challenge rather than an abstract technology.

The program aims to foster dialogue and co-creation among a diverse group of participants, including researchers, engineers, students, local government officials, and members of the public, in order to envision future societal models enabled by fusion energy.

## Event Details

- **Title**:
  *How to Build a Fusion Power Plant: Three Days to Design the Future [feat. J-Fusion]*
- **Dates**:
  January 30 (Fri) – February 1 (Sun), 2026
- **Venues**:
  Kyoseikan Building, Hiyoshi Campus, Keio University and J-Fusion member companies
- **Organizer**:
  Fusion Industry Research Center, KMD Research Institute, Keio University
- **Co-organizer**:
  Japan Fusion Energy Council (J-Fusion)

*This program has been officially selected as part of the FY2025 NIFS Schooling & Networking Program (Fusion Science School).*

For application details and further information, please visit:

https://firc.kmd.keio.ac.jp/fss/

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# Program Schedule (3 Days)

## January 30

### Day 1 | Understand — Systematically Grasping the Full Picture of Fusion

Through intensive lectures by experts from universities, research institutions, and industry, participants will learn broadly about the principles of fusion, plasma control, reactor design, industrial trends, and societal significance.

**Lecture 1**
*"Turning Fusion Reactors into Reality: Engineering Challenges"*
Ryuta Kasada, Professor
Department of Nuclear Materials Engineering
Institute for Materials Research, Tohoku University

**Lecture 2**
*"The Current State of the Fusion Industry: Japan's Strategy Seen Through Blankets, Tritium, and DEMO Design"*
Satoshi Konishi

Chair, J-Fusion
Representative Director & CEO, Kyoto Fusioneering Ltd.

**Lecture 3**
*“Fusion and Society: Social Acceptance, Consensus Building, and Ecosystem Design”*
Ryuma Shimeha, Associate Professor
Graduate School of Media Design, Keio University

**Lecture 4**
*“What Is Fusion? Fundamentals of Plasma Physics and Confinement Approaches”*
Kazuo Hoshino, Professor
Department of Applied Physics and Physico-Informatics
Faculty of Science and Technology, Keio University

**Lecture 5**
*“Technologies to See, Measure, and Control Fusion Plasma: The Reality of Experimental Reactor Operations and the Frontiers of Measurement Engineering”*
Kazuaki Hanada, Professor
Research Institute for Applied Mechanics, Kyushu University

## January 31

**Day 2 | Experience — Visiting Research and Industrial Sites**

**Morning**

- Presentations by J-Fusion member companies
- Networking lunch

**Afternoon**

- Company visits and site tours at J-Fusion member organizations
  (Yamato Gokin Co., Ltd., Kyoto Fusioneering Ltd., and others)

## February 1

**Day 3 | Create — Fusion Hackathon**

Participants will form interdisciplinary teams to develop and present concepts for the social implementation of fusion energy.

**Morning | Panel Discussion**
Startup companies will discuss commercialization challenges, collaboration with local communities and industries, and future visions.

**Participating startups**:

- Kyoto Fusioneering Ltd.
- MiRESSO Co.,Ltd.
- LiSTie Inc.

**Afternoon | Fusion Hackathon**

- Team-based ideation and concept development
- Presentations: 5-minute pitch + 10-minute Q&A
- Evaluation criteria: Empathy, Feasibility, Creativity, Impact

Outstanding teams will receive a **J-Fusion Certificate of Completion**.

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## Comments from Daisuke Nakahara,
## Secretary General and Executive Committee Chair, Japan Fusion Energy Council (J-Fusion)
## Vice President of Public Affairs and Corporate Planning, Kyoto Fusioneering Ltd.

Fusion energy has long been described as a “dream technology.” Today, however, it is becoming far more than a dream—it is emerging as a new engine of industrial growth.
The establishment of the Japan Fusion Energy Council (J-Fusion) as an industry-driven organization, along with the launch of the Fusion Industry Research Center, represents a powerful step forward in shaping fusion as a true industrial sector.
I am delighted that this year’s Fusion Science School is being held in close collaboration with industry
partners.
I hope you will not only experience the excitement and potential of fusion energy, but also explore the wide range of opportunities it offers—from research and development to startups, manufacturing, and the creation of robust supply chains.
We look forward to welcoming your participation.

**Director, Fusion Industry Research Center**
**Graduate School of Media Design, Keio University**
**Shutaro Takeda, Ph.D.**

The Fusion Science School – How to Build a Fusion Power Plant: Three Days to Design the Future is designed as a hands-on learning platform where participants explore fusion energy not only as a scientific and technological challenge, but as a societal and industrial endeavor.

Through this program, students and young professionals will engage with fusion from multiple perspectives—ranging from fundamental physics and engineering to industrial strategy, social acceptance, governance, and regional development. Such an integrated approach is essential if fusion energy is to transition from laboratories to real-world deployment.

Fusion energy has the potential to become a cornerstone of a sustainable and secure energy system. However, its realization depends not only on technological breakthroughs, but also on human capital development and strong collaboration between academia, industry, and the public sector. We hope this school will serve as a catalyst for nurturing the next generation of leaders and for building cross-sector networks that accelerate the social implementation of fusion energy.

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