



The Technology of Fusion Energy (TOFE 2024)

The Public-Private Pivot to Fusion Energy

July 21-25, 2024 | Madison, WI | Concourse Hotel

CALL FOR ABSTRACTS

EXECUTIVE CHAIRS

General Chair

Ross Radel (Shine Technologies)

Technical Program Chair

Paul Wilson (U. Wisconsin-Madison)

ABSTRACT DEADLINE: MONDAY, MARCH 11, 2024

MARCH  

ABSTRACTS DUE: **March 11, 2024**

APRIL  

NOTIFICATION TO AUTHORS: **April 22, 2024**

ABOUT THE CONFERENCE

Recent advances in the physics basis for fusion energy, combined with the emergence of new enabling technologies, have increased the imperative for the development of technology to deliver the promise of fusion energy. TOFE 2024 invites scientists, engineers, and fusion industry leaders from around the world to discuss how their scientific research and technology development are enabling this pivot. A mix of invited and contributed talks will cover topics such as fusion pilot plant studies, system and component design, enabling technologies, and industry facility needs. Tours of various fusion energy related facilities will be available. Madison, Wisconsin is one of the country's breeding grounds for the pursuit of commercial fusion energy, and its four lakes will provide a scenic summer venue.

FORMATS AND PRESENTATIONS

Abstracts will be selected for acceptance as presentations on the basis of technical merit, novelty of methods, and impact on the advancement of fusion energy.

Presentations will be in the format of talks or posters. Space permitting, abstracts not selected for talks will be considered by default for posters, and the author may opt-out during notification.

The final session topics and tracks will be finalized once all abstracts are received.

Authors of accepted, presented abstracts may submit a full paper after the meeting. Papers that are accepted after peer review will be published in a special issue of *Fusion Science & Technology*.

[Use the provided abstract template.](#)

STUDENT PAPER COMPETITION

The ANS Fusion Energy Division (FED) will sponsor a student paper competition that will award monetary prizes for outstanding papers. Both graduate and undergraduate students are encouraged to submit papers to the competition. In addition to submitting an abstract to the Electronic Paper Submission and Review (EPSR) portal, students who wish to participate in the competition should submit their full paper to Lauren Garrison (lgarrison@cfs.energy). To be eligible, a student must be the primary, first author. Papers must be submitted by April 22, 2024. Finalists will be chosen for an oral presentation at TOFE 2024. Student authors seeking publication in *Fusion Science & Technology* will have an opportunity to revise their submissions and will need to submit their paper for publication on the normal publication deadline.

SUBMIT AN ABSTRACT

<https://epsr.ans.org/meeting/?m=429>

PROGRAM SPECIALIST

Janet Davis

708-579-8253

jdavis@ans.org



The Technology of Fusion Energy (TOFE 2024)

The Public-Private Pivot to Fusion Energy

July 21-25, 2024 | Madison, WI | Concourse Hotel

TECHNICAL TRACKS

1. FUSION RESEARCH FACILITIES

- 1a. Operating experimental devices
- 1b. Next-step devices
- 1c. Power plant and design studies
- 1d. Materials and component test facilities

2. MATERIALS

- 2a. Fusion prototypic neutron source (FPNS)
- 2b. Specimen testing and post-irradiation examination
- 2c. Radiation effects and transmutation characterization
- 2d. Plasma material interactions
- 2e. High heat flux
- 2f. Radiation effects
- 2g. Material compatibility
- 2h. Tritium retention

3. FUSION NUCLEAR SCIENCE

- 3a. Neutronics and multiphysics simulation
- 3b. Blankets and tritium breeding
- 3c. Thermal hydraulics

4. SYSTEMS ENGINEERING

- 4a. Power conversion
- 4b. Safety and licensing
- 4c. Environmental issues and waste management
- 4d. Reliability, availability, maintainability, and inspectability (RAMI)
- 4e. Siting and social license

5. ENABLING TECHNOLOGY

- 5a. Advanced manufacturing techniques
- 5b. AI/ML
- 5c. Diagnostics and instrumentation
- 5d. Fueling, exhaust, and vacuum systems
- 5e. Tritium extraction and control
- 5f. Cryogenics
- 5g. High heat flux components/plasma facing components
- 5h. Fabrication, assembly, and maintenance

6. MAGNETIC FUSION ENERGY TECHNOLOGY AND ENGINEERING

- 6a. Plasma operation and control
- 6b. Plasma edge studies
- 6c. Confinement
- 6d. Disruption mitigation
- 6e. Heating and current drive
- 6f. Magnets
- 6g. Divertors

7. INERTIAL FUSION ENERGY TECHNOLOGY AND ENGINEERING

- 7a. Drivers
- 7b. Target
- 7c. Chamber dynamics

8. ALTERNATE CONCEPTS AND APPLICATIONS

- 8a. Alternate confinement concepts
- 8b. Hybrid reactors
- 8c. Non-electric applications of fusion

