



The Technology of Fusion Energy (TOFE 2022)

EMBEDDED IN THE 2022 ANS ANNUAL MEETING

June 12-16, 2022 | Anaheim, California, USA | Anaheim Hilton Hotel

CALL FOR PAPERS

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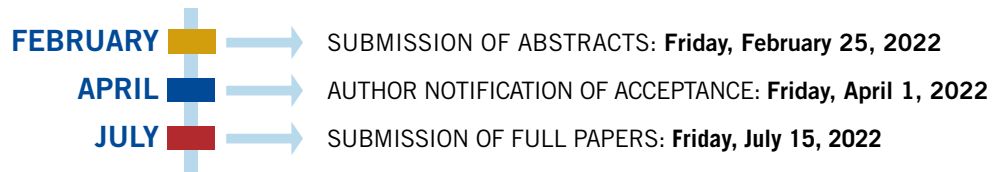
Technical Program Chair

Paul Humrickhouse (INL)

Student Program Chair

Lauren Garrison (ORNL)

ABSTRACT DEADLINE: FRIDAY, FEBRUARY 25, 2022



PUBLISHING AND FORMATS

The 2022 TOFE technical program committee invites you to submit abstracts and papers detailing outstanding research in the field of fusion science and technology. Abstracts should be submitted through the Electronic Paper Submission and Review (EPSR) system. Accepted abstracts will be available and presented at the meeting. 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.

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 EPSR, students who wish to participate in the competition should submit their full paper to Editorial Manager (www.editorialmanager.com/fst/) and upon submission, select "TOFE Student Paper" as the paper type. To be eligible, a student must be the first author. Papers must be submitted by May 16, 2022. Finalists will be chosen for an oral presentation at TOFE 2022.



SUBMIT AN ABSTRACT
<https://epsr.ans.org/meeting/?m=371>

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RELEVANT TOPICS

SCOPE

TOFE 2022 will provide a forum to present and discuss the exceptional progress made in the area of fusion science and supporting technology. The following list outlines areas of particular interest. There will be a special set of sessions regarding the fusion prototypic neutron source (FPNS), Topic 8.

1. FUSION RESEARCH FACILITIES

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

2. PLASMA ENGINEERING

- 2a. Plasma operation and control
- 2b. Plasma edge studies
- 2c. Confinement
- 2d. Disruption mitigation
- 2e. Heating and current drive

3. MATERIALS

- 3a. Plasma material interactions
- 3b. High heat flux
- 3c. Radiation effects
- 3d. Advanced manufacturing techniques
- 3e. Material compatibility
- 3f. Tritium retention

4. FUSION NUCLEAR SCIENCE

- 4a. Neutronics and multiphysics simulation
- 4b. Blankets and tritium breeding
- 4c. Thermal hydraulics

5. SYSTEMS ENGINEERING

- 5a. Power conversion
- 5b. Safety and licensing
- 5c. Environmental issues and waste management
- 5d. Reliability, availability, maintainability, and inspectability (RAMI)

6. ENABLING TECHNOLOGY

- 6a. Diagnostics and instrumentation
- 6b. Fueling, exhaust, and vacuum systems
- 6c. Tritium extraction and control
- 6d. Cryogenics
- 6e. Magnets
- 6f. Divertors
- 6g. High heat flux components/plasma facing components
- 6h. Fabrication, assembly, and maintenance

7. ALTERNATE CONCEPTS AND APPLICATIONS

- 7a. Stellarators
- 7b. Inertial fusion engineering
- 7c. Alternate confinement concepts
- 7d. Hybrid reactors
- 7e. Non-electric applications of fusion

8. FUSION PROTOTYPIC NEUTRON SOURCE (FPNS)

- 8a. FPNS device concepts
- 8b. Transmutation issues, including device-wide consequences and issues specific to steels, tungsten, ceramics, or other fusion materials
- 8c. Transmutation characterization, including advanced microscopy, atom probe tomography, synchrotron, and others
- 8d. Small specimen testing technologies, including technique development; strategies for steels, refractory metals, and ceramics; and synergistic activities within IAEA, ASME, ASTM

