

**CONSTITUTION AND BYLAWS OF THE
FUSION TECHNOLOGY STANDING COMMITTEE
OF THE
IEEE NUCLEAR AND PLASMA SCIENCES SOCIETY**

**Revision 0
May 24, 2018**

1. CONSTITUTION

Article I – Name and Object

Section 1.

This organization shall be known as the Fusion Technology Standing Committee (FTC) of the IEEE Nuclear and Plasma Sciences Society (NPSS), referred to hereafter as the FTC. This standing Technical Committee has been in existence as an appointed committee since 1986 or earlier, and will complete its transition to an elected committee in 2021.

Section 2.

The FTC shall strive for the advancement of fusion science and technology and its applications, and shall support the growth and development of the global fusion community.

Section 3.

The FTC shall aid in promoting cooperation and exchange of technical information throughout the fusion community. In particular, it will take responsibility for the following activities:

- a. Organize and conduct the biennial IEEE Symposium on Fusion Engineering (IEEE SOFE) in a financially sound manner and encourage worldwide participation in the conference.
- b. Recognize special achievements in the fusion community by presentation of the annual IEEE NPSS Fusion Technology award, by nomination of fusion community members for other IEEE and NPSS awards, and by supporting nomination of community members to IEEE Fellow status.
- c. Encourage the fusion community to publish in the Transaction of Plasma Sciences by sponsoring Special Issues on fusion and promoting publication in all monthly issues.
- d. Nominate members of the fusion community to serve as NPSS Distinguished Lecturers

- e. Encourage students to enter the fusion field.
- f. Represent the interests of the fusion community in the IEEE.
- g. Promote IEEE and NPSS membership.

Article II – Field of Interest

Section 1.

The field of interest of the fusion community represented by the FTC is the understanding, development and application of science and technology leading to the realization of fusion as a sustainable, economic, and environmentally attractive source of energy.

Section 2. The areas of technical activities shall include but are not limited to:

- Experimental devices
- Plasma operation and control
- Diagnostics and instrumentation
- Magnets
- Divertors and high heat flux components
- Plasma facing components
- Plasma-material interactions, plasma edge physics
- Plasma heating and current drive
- Next step devices, DEMO, power plants
- Project management, systems engineering
- Materials and fabrication
- Safety and environment
- Operations and maintenance
- Power supply systems
- Disruption mitigation and control
- Blankets and tritium breeding
- Neutronics and multi-physics simulation
- Fueling, exhaust, and vacuum systems
- Tritium extraction and control
- Stellarators
- Inertial fusion engineering

Article III – Membership

Section 1.

The Fusion Technology Committee comprises members-at-large of NPSS elected from the fusion community. Members of the FTC are appointed by the FTC Chair to perform functions as specified herein and in the Bylaws.

The number of elected members-at-large, including the Chair, and the Vice-Chair, shall be 16 members. Only these members are entitled to vote on FTC matters with the constraints as specified in Article IV – Section 3.

Section 2.

The FTC will make appointments and form functional subcommittees as required to conduct important aspects of FTC business. Functional subcommittees include, but are not limited to:

a. Awards Subcommittee

Administers the Fusion Technology Award and the SOFE Best Student Paper Award. Also identifies members-at-large for nomination for other IEEE and NPSS awards and IEEE Fellow status.

b. Nominations Subcommittee

Recruits nominees to run for elected FTC member-at-large.

Article IV – Administration

Section 1.

The terms of office of the elected members-at-large shall be four years. Members-at-large, elected to four-year terms, may not succeed themselves; however, such members-at-large may be candidates in the election held immediately after their term of service, for the term beginning a year after the expiration of their previous term. Election of members-at-large shall be held annually to fill vacancies for the coming year. The terms of office of the other members shall be specified in the Bylaws.

Section 2.

The affairs of the FTC shall be managed by the Chair as directed by the FTC and in accordance with the powers and duties as defined hereunder and in the Bylaws. In the event of the Chair's absence or incapacity, these duties shall be performed by the Vice-Chair serving as Acting Chair.

Section 3.

The Chair or Acting Chair of the FTC shall refrain from voting in order to maintain impartiality. However, in the case of a tie vote the Chair shall cast the deciding vote.

Section 4.

- a. The positions of Chair and Vice-Chair shall be filled by succession of newly elected persons, as voted by the FTC, to serve two-year terms beginning January 1st of even-numbered years.
- b. In the event that the Chair is incapacitated or otherwise unable to serve, the Vice-Chair shall serve as Acting Chair to assume the duties of Chair until the Chair resumes his or her duties.
- c. The Chair of the FTC shall be a non-voting member of all subcommittees of the FTC.
- d. In the event that neither the Chair nor the Vice-Chair is able to take office as prescribed in the Bylaws, or if both are incapacitated, or if both offices become vacant, the Committee shall promptly elect an Acting Chair from among the elected members to assume the duties of Chair until either the Chair or Vice-Chair takes office or resumes his or her duties.

Section 5.

The Chair, as soon as expedient after election, shall appoint the chairpersons of the subcommittees provided for in the Constitution and Bylaws. All appointees serve at the pleasure of the Chair.

Section 6.

One or more current or past members of the FTC, including previous members of the FTC, will be elected by members of the fusion community within the NPSS membership at-large, to serve as NPSS AdCom members representing FTC. NPSS is managed by AdCom. NPSS AdCom will periodically determine the number of AdCom members that will represent FTC. These elected AdCom members and the FTC Chair will be voting members of AdCom. Together they will represent the interests of the fusion community and the FTC to AdCom, NPSS and IEEE and convey IEEE and NPSS goals, policies and procedures back to the FTC and through the FTC to the Community. The person(s) elected to this position will become a designated member of the FTC if not a voting member at the time elected as AdCom representative.

Article V – Nomination and Election of FTC Members-at-Large

Section 1.

Nominating procedures shall be performed by the Nomination Subcommittee as prescribed in the Bylaws and shall include provision for nomination by NPSS members.

Section 2.

Election of the members-at-large of the FTC shall be as prescribed in the Bylaws.

Section 3.

If a member of the FTC does not complete a term, the vacancy shall be filled at the next regular election for the unexpired portion of the term.

Article VI – Meetings

Section 1.

The FTC may hold meetings, conferences, symposia or conventions either alone or in cooperation with other organizations subject to applicable IEEE and NPSS rules and regulations.

Section 2.

Ten voting members of the FTC shall constitute a quorum. Multiple offices or committee assignments shall not entitle any member to more than one vote.

Section 3.

A majority of the votes cast by those members of the FTC attending an FTC meeting, either in person or by remote connection (telephone or videoconference), shall be necessary for the conduct of its business except as otherwise provided in this Constitution.

Section 4.

Business of the FTC may be handled by correspondence, telephone, facsimile, e-mail, videoconference, or other means of communication where, in the opinion of the Chair, matters requiring prompt action can be adequately handled. A majority vote of the full FTC is required to take action in such a case. Actions that do not involve a written record are to be promptly confirmed in writing by the Chair.

Section 5.

The FTC shall meet as required to conduct business and in accordance with the Bylaws.

Section 6.

If the Chair is unable to represent the FTC at meetings of the NPSS Administrative Committee (AdCom), the Chair may designate the Vice-Chair or the most recent past Chair to serve as his or her alternate. This alternate shall have the privilege of the floor on behalf of the FTC but will not have additional voting rights beyond his or her voting right as an elected member of AdCom.

Article VII – Amendments

Section 1. Amendments to this Constitution may be made by a two-thirds vote of the FTC members. After such approval, the amendment shall be incorporated into the Constitution and the new version of the Constitution and Bylaws distributed to the FTC members. Amendments go into effect after approval by NPSS AdCom. The original Constitution and Bylaws shall be Volume 1, dated January 1, 2019. The volume number and date shall be changed with each revision.

Section 2.

Bylaws and amendments thereto may be adopted by two-thirds vote of those voting members present at a FTC meeting. Alternatively a Bylaw or amendment may be adopted by a two-thirds mail or e-mail vote of the members of the FTC, provided that a fourteen-day period is provided for such responses. After such approval, the amendment shall be incorporated into the Bylaws and the new version of the Constitution and Bylaws distributed to the FTC members. Amendments go into effect after approval by NPSS AdCom.

Article VIII – Revision

Section 1.

The Chair of the FTC shall appoint a subcommittee at least once each five years to evaluate the effectiveness of the Constitution and Bylaws, to study the rules of governance required by the activities of the FTC at that time, and to propose amendments to the Constitution and Bylaws or to write a new Constitution and Bylaws appropriate to the existing and anticipated needs of the FTC. Amendments shall be approved per the provision of Article VII.

2. BYLAWS

1. Fusion Technology Committee (FTC)

1.1 FTC meetings will be called and organized by the Chair or by a majority of the members. Meetings may be by videoconference or in-person. The FTC shall meet at least twice a year. On odd numbered years a meeting in-person should be held in conjunction with the IEEE Symposium on Fusion Engineering (IEEE SOFE).

1.2 The Chair of the most recent IEEE SOFE, and the chair of the next IEEE SOFE, if not already members of the FTC, may be requested to attend to report on closeout of most recent SOFE and planning of next SOFE.

1.3 If a FTC member misses two consecutive meetings, the Chair will contact the member and encourage participation or resignation. Missing further meetings are grounds for removal from the FTC at the Chair's discretion.

1.4 The FTC shall organize functional subcommittees as required to conduct its business as outlined in Article III - Section 2 of the Constitution and in the following:

1.4.1 Each of the functional subcommittees shall submit a report of its activities to the FTC Chair prior to or at each meeting.

1.4.2 The terms of office of chairpersons of the functional subcommittees shall be two years.

2. Nomination and Election of FTC Members-at-Large

2.1 As specified in Article IV, the FTC shall include 16 voting members, each serving a four-year term. Posts, and any vacancies occurring in the previous year, are to be filled each year by election from the fusion community.

2.2 The Chair of the FTC shall arrange, before January 1, for a call for nominations to be conveyed to the whole membership through the March issue of the NPSS Newsletter.

2.3 The Nominations Subcommittee is responsible for ensuring that at least one and one-half (1.5) nominations are obtained for each position to be filled. Nominations may be made by any member of the FTC or any member of the fusion community until June 1 each year. Self-nominations are permitted.

2.4 All nominees must be either members in any grade of IEEE and NPSS or must have submitted an application for membership in IEEE and NPSS at the time the nomination is forwarded to IEEE Headquarters. Graduate students, but

not undergraduates, may apply. An affiliate member of NPSS is not eligible to be a nominee for member-at-large.

2.5 A member-at-large who is elected to fill an uncompleted term is eligible for re-nomination to the FTC for a term beginning at the expiration of the partial term.

2.6 The Nominations Subcommittee must determine in advance that all nominees are willing to serve if elected. A nomination is only valid if it is submitted in writing to the Nominations Subcommittee. The name, address, e-mail address, and phone number of the nominee must be included, as well as a short biographical statement and a statement why the individual wishes to serve on the FTC. In addition, the nominee must be a member of the IEEE and NPSS, or provide a statement that an application for membership will be submitted if selected as a candidate. The Nominations Subcommittee shall submit its recommended list of candidates to the FTC Chair who shall review and approve it before forwarding to the NPSS for the annual IEEE elections.

2.7 The distribution and counting of ballots issued to all members of the voting community shall be entrusted to IEEE Headquarters. IEEE Headquarters shall count and tabulate the votes received and report the results to the FTC Chair.

2.8 Those nominees receiving the highest number of votes will be elected. Any vacancy on the FTC resulting from an uncompleted four-year term shall remain unfilled until the next regularly scheduled election. In the event of a tie vote by the general membership of the fusion community, the individual selected will be determined by a majority vote of the voting members of the FTC.

2.9 The FTC Chair shall submit to the Secretary of the NPSS AdCom the names of the candidates elected to fill the designated vacancies.

2.10 All terms of office of elected members-at-large of the FTC shall begin January 1 of the year immediately following their election.

3. Election of FTC Chair and Vice-Chair

3.1 The Chair and Vice-Chair of the FTC are elected by written ballot in odd-numbered years (years when the SOFE conference is held). The ballot will indicate self-nominated candidate(s). The Chair shall send written ballots to all voting FTC members at least three weeks prior to SOFE meeting during the final year of his or her term. The Chair shall verify and count the ballot responses received. The candidate receiving the most votes will be declared Chair, and the runner-up will be declared Vice-Chair. The term of office of Chair and Vice-Chair shall begin January 1 of the year immediately following the election.

3.2 The newly elected FTC Chair and Vice-Chair shall be announced at the IEEE SOFE meeting following the election and preceding the beginning of his or her term.

4. Symposium on Fusion Engineering (SOFE)

4.1 SOFE is an official IEEE Nuclear and Plasma Science Society Conference that is conducted by the FTC in odd numbered years. This Conference is the main forum for exchange of information in fusion science, engineering, technology and applications of that technology. The FTC and the SOFE Technical Program Committee of each conference organize and manage the conference, plan and conduct the technical program and publish the digest of technical papers for the conference.

4.2 Each proposed SOFE Conference Chair shall be approved by a majority vote of the FTC. The Chair need not be a member of the FTC.

4.3 SOFE Program Committees are formed by the Conference Chair to organize and implement conference activities and publish the technical papers generated by the conference. The digest of technical papers or presentations of each conference is made available to the attendees of the Conference.

4.4 The budget for each conference is presented to the FTC for preliminary approval and to the NPSS President and Treasurer for final approval. The budget must follow IEEE and NPSS guidelines and be presented in the IEEE format.

5. Awards

5.1 Awards Subcommittee

The FTC Chair appoints an Awards Subcommittee Chairperson. Additional members of FTC may volunteer to assist. The Chair of the Awards Subcommittee will serve for a two-year term.

5.2 Fusion Technology Award

5.2.1 The award is approved by IEEE TAB and funded by NPSS. To change an award or award criteria, FTC must petition NPSS AdCom. If approved by AdCom the NPSS Awards Chair will seek approval of the IEEE TAB.

5.2.2 The award is to recognize outstanding contributions to research and development in the field of Fusion Technology. Two awards are presented at each biennial Symposium on Fusion Engineering (SOFE), one for each calendar year of the two-year cycle with the first year corresponding to the year between

SOFE conferences and the second year corresponding to the year of the SOFE conference at which the presentation is made.

5.2.3 Any person, regardless of nationality or Society affiliation, is eligible for the award, with the exception that no current member of the FTC may be considered.

5.2.4 The recipient shall be selected for one of two categories as determined by the FTC that year: (a) outstanding and innovative technical contributions which are widely recognized and have a major impact in the fusion technology community; or (b) outstanding and innovative technical leadership in or service to the fusion technology community. The nominee is not required to be a member of IEEE or NPSS but, where candidates have otherwise equal qualifications, preference shall be given to the candidate who is a member of IEEE.

5.2.5 Nominations will be requested by e-mail by the fusion community and in the NPSS Newsletters each year in January of the year of the award period. All nominations shall be due by the end of February. Schedule may be adjusted under extenuating circumstances as agreed to by the FTC Chair and Awards Subcommittee Chair. Selection will be based on FTC vote, including the Chair and Awards Subcommittee Chair. The nominee with the most votes is the winner.

5.2.6 The announcement of the award recipient each year will be featured in the NPSS Newsletter. The presentation of the awards for the year prior to SOFE, and the year of SOFE, will be made at the SOFE banquet.

5.2.7 Unsuccessful nominations for the award will be automatically considered by the FTC once for the following cycle pending the nominators consent and approval. An application that is unsuccessful for a second time will not be further considered unless it is resubmitted by the nominator as a new proposal.

5.3 Best Student Paper

5.3.1 The Best Student Paper award is funded by the SOFE conference at which the award is given. The prize consists of a sum of money and a plaque.

5.3.2 The purpose is to recognize outstanding student papers presented at the Symposium on Fusion Engineering (SOFE) in the field of Fusion Technology. Up to two awards can be made at each SOFE conference.

5.3.3 Any student presenting a paper (or papers) at the current year's Symposium on Fusion Engineering, regardless of nationality or Society affiliation, is eligible for the award. All students presenting a paper (or papers) at the current year's SOFE and who submit their abstract(s) in accordance with abstract submittal requirements will be automatically qualified for consideration.

5.3.4 Student abstracts submitted are prescreened by the Awards Subcommittee. A select number of students are invited to present a 10-minute oral summary of their paper at the FTC luncheon, which is held early in the week of the symposium. The award recipient(s) shall be selected based on the quality of their oral presentation and the quality of the work represented by their presentation

5.3.5 Presentation is made by the Awards Subcommittee Chair during the SOFE banquet.

5.3.6 The announcement of the award recipient will be featured in the NPSS Newsletter.