



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

28th IAEA Fusion Energy Conference (FEC 2020)

Nice, France

12–17 October 2020

Organized by the
International Atomic Energy Agency (IAEA)

Hosted by the
Government of France

through the
French Alternative Energies and Atomic Energy Commission (CEA)

and the
ITER International Fusion Energy Organization

Announcement and Call for Synopses

A. Introduction

The International Atomic Energy Agency (IAEA) fosters the exchange of scientific and technical results in nuclear fusion research and development through its series of Fusion Energy Conferences. The 28th IAEA Fusion Energy Conference (FEC 2020) aims to provide a forum for the discussion of key physics and technology issues as well as innovative concepts of direct relevance to the use of nuclear fusion as a future source of energy.

With a number of next-step fusion devices currently being implemented — such as ITER (‘International Thermonuclear Experimental Reactor’) in Cadarache, France, and the Wendelstein 7-X stellarator in Greifswald, Germany — and in view of the concomitant need to demonstrate the technological feasibility of fusion power plants, as well as the economic viability of this method of energy production, the fusion community is now facing new challenges. The way these challenges are addressed will determine the direction of research in the present and coming decades.

The scientific scope of FEC 2020 is, therefore, intended to reflect the priorities of this new era in fusion energy research. The conference aims to serve as a platform for sharing the results of research and development efforts in both national and international fusion experiments that have been shaped by these new priorities, and to thereby help in pinpointing worldwide advances in fusion theory, experiments, technology, engineering, safety and socio-economics. Furthermore, the conference will also set these results against the backdrop of the requirements for a net energy-producing fusion device and a fusion power plant in general, and will thus help in defining the way forward.

With the participation of international organizations such as the ITER International Fusion Energy Organization and the European Atomic Energy Community (Euratom), as well as the collaboration of more than 40 countries and a great number of research institutes, including those working on smaller plasma devices, it is expected that this conference will, like previous conferences in the series, serve to identify the possibilities and means for continuous and effective international collaboration in this area.

The 28th Fusion Energy Conference is being organized by the IAEA through the French Alternative Energies and Atomic Energy Commission (CEA) and the ITER Organization. Previous conferences in this series were held in Salzburg (1961), Culham (1965), Novosibirsk (1968), Madison (1971), Tokyo (1974), Berchtesgaden (1976), Innsbruck (1978), Brussels (1980), Baltimore (1982), London (1984), Kyoto (1986), Nice (1988), Washington DC (1990), Würzburg (1992), Seville (1994), Montreal (1996), Yokohama (1998), Sorrento (2000), Lyon (2002), Vilamoura (2004), Chengdu (2006), Geneva (2008), Daejeon (2010), San Diego (2012), Saint Petersburg (2014), Kyoto (2016) and Ahmedabad (2018).

B. Topics

(For further information, see Annex A)

- **EX** Magnetic Fusion Experiments
- **TH** Magnetic Fusion Theory and Modelling
- **TECH** Fusion Energy Technology
- **IFE** Inertial Fusion Energy
- **IAC** Innovative and Alternative Fusion Concepts

Contributions on these topics will be considered for presentation at the FEC 2020 if they are clearly relevant to the development of fusion energy (see the attached Annex B, *Scientific Guidelines for Authors*). A Programme Committee consisting of a representative international membership will be responsible for the selection of contributions, the arrangements of conference sessions and the overall scientific content of the conference. The Programme Committee will meet in May 2020 at the IAEA's Headquarters in Vienna, Austria, to finalize the technical programme for the conference.

Please be aware that because of the large interest within some countries in submitting contributions, official authorities in those countries may pre-screen the contributions to be submitted. Authors are advised to acquaint themselves with possible deadlines for this process at their earliest convenience.

C. Participation and Registration

All persons wishing to participate in the conference must be designated by an IAEA Member State or should be members of organizations that have been invited to attend. The list of invited organizations can be requested from the Conference Secretariat (see Section O).

In order to be designated by an IAEA Member State, participants are requested to send the following form(s) (as applicable) to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority):

- Participation Form (Form A): participation only; no deadline if only Form A is submitted.
- Form for Submission of Contributions (Form B): participants submitting a contribution (through the conference's web browser-based file submission system (IAEA-INDICO)) must send the completed and signed Form B together with Form A to their competent national authority for onward transmission to the IAEA (Official.Mail@iaea.org) by **27 March 2020**.
- Grant Application Form (Form C): participants requesting financial support from the IAEA must complete Form C and send it together with Form A (and Form B, if applicable) to the competent national authority for onward transmission to the IAEA (Official.Mail@iaea.org) by **27 March 2020**. Form C must be stamped and signed by the competent national authority.

Participants who are members of an organization invited to attend, are requested to send the above form(s) through their organization to the IAEA (Official.Mail@iaea.org).

In addition, participants are requested to pre-register online through the conference website.

Participants who have registered in accordance with the above procedure will receive from the IAEA further information approximately three months before the opening of the conference.

Please note that the IAEA is in a transition phase to manage the entire registration process for all regular programme events electronically through the new InTouch+ (<https://intouchplus.iaea.org>) facility, which is the improved and expanded successor to the InTouch platform that has been used in recent years for the IAEA's technical cooperation events. Through InTouch+, prospective participants will be able to apply for events and submit all required documents online. National authorities will be able to use InTouch+ to review and approve these applications. Interested parties that would like to use this new facility should write to: InTouchPlus.Contact-Point@iaea.org.

27 March 2020 Deadline for submitting Form B and/or Form C
(together with Form A).

D. Submission of Synopses

Anyone wishing to present a contribution during the conference must submit **a synopsis of not more than 1250 words including references** (see the attached Annex B, *Scientific Guidelines for Authors*) through IAEA-INDICO. Instructions on how to upload the synopses will be made available on IAEA-INDICO, which will be accessible through the IAEA conference web page (see Section P). All synopses must be submitted through this system **between 11 February and 16 March 2020** (Central European Time). No other form of submission will be accepted.

IMPORTANT: The synopses will be considered by the Programme Committee only if governmental approval (designation) has been received by **27 March 2020**.

11 February 2020 Opening of synopses submission through IAEA-INDICO

16 March 2020 Deadline for submitting synopses through IAEA-INDICO

E. Contributions, Manuscripts and Journal Articles

E.1. Acceptance of synopses as contributions

Authors will be notified by email by **15 June 2020** as to whether their synopses have been accepted and, if so, in which format they are to be presented (i.e. overview oral, regular oral, overview poster or regular poster). They will also be informed of the assigned presentation session.

E.2. Submission of manuscripts

A manuscript must be submitted for each contribution. Any contribution for which no manuscript is received by the given deadline will be removed from the conference programme. The deadline for submission of the manuscripts as PDF files through IAEA-INDICO is **28 September 2020** (Central European Time). The IAEA will not accept submissions after the deadline.

Specifications and instructions for the layout of the full manuscript as well as for the preparation of posters will be posted on the IAEA web page for the conference (see Section P) by **15 June 2020**. The manuscript must be submitted through IAEA-INDICO and uploaded as a PDF file. IAEA-INDICO will be reopened for submission of manuscripts on **31 July 2020** (Central European Time).

Page limits for manuscripts

Summaries:	20 pages
Overviews:	12 pages
Oral presentations:	8 pages
Overview posters	12 pages
Posters:	8 pages

15 June 2020	Authors notified about the acceptance of their synopses and the format of presentations (specifications and instructions for the layout and electronic format of the full manuscripts, as well as for the preparation of posters, will be posted on the IAEA web page for the conference)
31 July 2020	Opening of manuscript submission through IAEA-INDICO
28 September 2020	Deadline for submitting manuscripts through IAEA-INDICO

E.3. Dissemination and publication routes

The IAEA will not be issuing proceedings of the 28th IAEA Fusion Energy Conference. Instead, synopses, presentation slides, posters and manuscripts compiled as “Conference Material” will be made available on the IAEA Fusion Portal (see Section P).

The primary publishing route is the IAEA journal *Nuclear Fusion*. Authors may, however, choose to leave the manuscript as the final record.

The online conference material will be updated in 2021 with links to the *Nuclear Fusion* journal articles, and digital object identifiers will be appended to the manuscripts as required.

E.3.1. Submission to *Nuclear Fusion* journal

E.3.1.1. Overview and summary contributions

Authors of contributions to be presented as ‘overview oral’, ‘overview poster’ and ‘summary’ contributions are kindly requested to submit their papers for publication in a dedicated special issue of the journal *Nuclear Fusion* to appear in 2021. Papers should be submitted via <http://mc04.manuscriptcentral.com/nf-iaea> as soon after the conference as possible and by **27 November 2020** at the latest.

27 November 2020 Deadline for submitting ‘overview oral’, ‘overview poster’ and ‘summary’ papers via <http://mc04.manuscriptcentral.com/nf-iaea> for publication in *Nuclear Fusion*

E.3.1.2. Other contribution categories

Authors of contributions to be presented as ‘regular oral’ and ‘regular poster’ contributions are also encouraged to submit their papers to the journal *Nuclear Fusion*. The papers must contain original work and should omit, or only briefly mention in the introduction, material that has already been published. Papers should be appropriate, in terms of style and content, for a high-quality scientific journal and will be subject to the standard double-referee peer review procedure observed by the editors of *Nuclear Fusion*. All communications with the authors regarding details for publication and charges will be handled by the *Nuclear Fusion* editorial office (email: nf@iaea.org).

Authors will be contacted by the editorial office in **June 2020** to ascertain their intentions to further submit the conference papers to *Nuclear Fusion*. Journal articles may be submitted via <http://mc04.manuscriptcentral.com/nf-iaea> at any time before **8 January 2021**.

Published articles will be indexed within the journal as IAEA Fusion Energy Conference papers and linked to the manuscript in the Conference Material.

8 January 2021 Deadline for submitting ‘regular oral’ and ‘regular poster’ papers via <http://mc04.manuscriptcentral.com/nf-iaea> for publication in *Nuclear Fusion*

F. Post-Deadline Synopses

A limited number of post-deadline synopses will be accepted. To be considered, a synopsis must meet all of the following criteria:

- It deals with subject matter appropriate to this conference;
- It presents new experimental or theoretical data, or technological developments, of sufficient importance to attract wide-ranging interest among the conference participants; and
- It is submitted together with a completed Form for Submission of Contributions (Form B; see Section C) and an officially endorsed Participation Form (Form A; see Section C).
- The synopsis should be a maximum of 1250 words (including references) and should be sent by email as a PDF file attachment to the IAEA's Scientific Secretariat (Fusion-Physics@iaea.org) for the conference by **21 September 2020**. The Programme Committee will meet **between 12 and 14 October 2020** to consider post-deadline submissions. Authors will be notified promptly about the acceptance or rejection of their synopses through announcements at the conference. Authors of post-deadline contributions should be prepared to provide either a regular oral presentation or a regular poster. Time will be made available for two post-deadline oral presentations. The manuscripts of post-deadline contributions will be included in the conference material and must follow the same guidelines as detailed in Section E.

21 September 2020 Deadline for submitting synopses for post-deadline acceptance to Fusion-Physics@iaea.org (**PDF files only**), together with a completed Form for Submission of Contributions (Form B) and an officially endorsed Participation Form (Form A)

G. Expenditures

The costs for the organization of the conference are to be borne by the Host Government and the IAEA. **No registration fee will be charged to participants.**

The IAEA is generally not in a position to bear the travel and other costs of participants in the conference. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants. Upon specific request, such assistance may be offered to normally one participant per country provided that, in the IAEA's view, the participant will make an important contribution to the conference. Grant applications will only be considered for authors of contributions.

If Governments wish to apply for a grant on behalf of one of their participants, they should submit the Grant Application Form (Form C), together with the Participation Form (Form A) and Form for Submission of Contributions (Form B), if applicable, to the IAEA by **27 March 2020** (see Section C).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance.**

H. Distribution of Documents

A preliminary programme of the conference will be made available on the conference web page (see Section P).

The final programme (**in electronic form only**) will be available free of charge upon registration at the conference. An app is also intended to be made available that will allow participants to access the programme and other conference-related details through their smartphones.

I. Working Language

The working language of the conference will be English. No simultaneous interpretation will be provided. All communications and contributions must be sent to the IAEA in English.

J. Conference Venue and Accommodation

The conference will be held at the Nice Acropolis Convention Centre in Nice, France. Participants must make their own travel and accommodation arrangements. Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying cancellation fees or for re-booking and no shows.

K. Visas

Participants who require a visa to enter France should submit the necessary application to the nearest diplomatic or consular representative of France at least four weeks before they travel to France. Since France is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States where France has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing France in the country in question.

L. Satellite Meetings

Details on how to arrange room reservations will soon be made available on the host organization's web page for the conference (see Section P).

M. Exhibitions

Space will be available for commercial vendors' displays/exhibits during the conference (further information will be made available in due course on the IAEA's conference web pages).

N. Key Dates and Deadlines

FORMS A, B AND C

27 March 2020 Deadline for submitting Form B and/or Form C (together with Form A); no deadline if only Form A is submitted (see Section C)

SYNOPSIS AND MANUSCRIPTS

11 February 2020 Opening of synopsis submission through IAEA-INDICO

16 March 2020 Deadline for submitting synopses through IAEA-INDICO

15 June 2020 Authors notified about the acceptance of their contributions and in which categories (specifications and instructions for the layout of the full manuscripts, as well as for the preparation of posters, will be posted on the IAEA web site for the conference)

31 July 2020 Opening of manuscript submission through IAEA-INDICO

21 September 2020 Deadline for submitting synopses for post-deadline acceptance to Fusion-Physics@iaea.org (**PDF files only**), together with a completed Form for Submission of Contributions (Form B) and an officially endorsed Participation Form (Form A)

28 September 2020 Deadline for submitting manuscripts through IAEA-INDICO

PUBLICATION

27 November 2020 Deadline for submitting overview oral and overview poster papers as well as summary papers via <http://mc04.manuscriptcentral.com/nf-iaea> for publication in *Nuclear Fusion*

8 January 2021 Deadline for submitting regular oral and regular poster papers via <http://mc04.manuscriptcentral.com/nf-iaea> for publication in *Nuclear Fusion*

O. Conference Secretariat

Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries of the conference and correspondence on administrative matters to the IAEA's Conference Services Section.

Scientific Secretaries:

Ms Sehila González de Vicente

Mr Matteo Barbarino

Mr Danas Ridikas

Physics Section

Division of Physical and Chemical Sciences

Department of Nuclear Sciences and Applications

International Atomic Energy Agency

Vienna International Centre

PO Box 100

1400 VIENNA

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Tel.: +43 1 2600 21753

Contact email address (also for submission of post-deadline contributions): Fusion-Physics@iaea.org

Administration and Organization:

Mr Sanjai Padmanabhan

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P. Conference Web Pages

Participants are encouraged to visit these web pages regularly to check for new or updated information regarding the conference:

IAEA conference web page:

<https://www.iaea.org/events/FEC2020>

Host organization conference web page:

www.fec2020.fr

Conference Material will be published at:

IAEA Fusion Portal

<https://nucleus.iaea.org/sites/fusionportal>

ANNEX A — TOPICS

- **EX** Magnetic Fusion Experiments
Keywords: Toroidal and Helical Configurations, Confinement, Stability, Performance and Control, Wave-plasma interactions, Current Drive, Heating, Energetic Particles, Plasma-material interactions, divertors, limiters, Scrape-Off-Layer

- **TH** Magnetic Fusion Theory and Modelling
Keywords: Confinement, Stability, Performance and Control, Wave-plasma interactions, Current Drive, Heating, Energetic Particles, Plasma-material interactions, divertors, limiters, Scrape-Off-Layer

- **TECH** Fusion Energy Technology
Keywords: Materials, Magnets, Engineering, System Integration, Neutron Sources, Radiation Transport and Activation, Power Plant Design, Safety, Maintenance and Remote Handling, Socio-Economic and Environmental Aspects.

- **IFE** Inertial Fusion Energy
Keywords: Materials, Power Plant Design, Targets, Drivers.

- **IAC** Innovative and Alternative Fusion Concepts
Keywords: Linear Configuration, Non-magnetic Configurations, Hybrid Concepts, Fusors.

The keywords are indicative only and not limiting.

Overview papers will be considered in the following categories:

- A review of studies in one of the above topic areas,
- An overview of significant results from a facility.

ANNEX B — SCIENTIFIC GUIDELINES FOR AUTHORS

- i. The synopsis is the only material used by the PC for selection and should not exceed 1250 words including references
- ii. The evaluation criteria are Impact, Novelty and Quality.
- iii. A meaningful title that communicates the main achievements is helpful.
- iv. The synopsis should clearly emphasize how the work described meets the criteria. It is recommended that there is a clear focus on results obtained, conclusions and impact in the field.
- v. Results obtained should be described and clearly stated at the beginning to assist the evaluation. Note that the PC work is conducted under strict confidentiality agreement.
- vi. Methodology and motivational statements are important but should not dominate the content of the synopsis.
- vii. The use of 2-3 figures in the synopsis can be very helpful in clearly communicating principal results.
- viii. The synopsis for overview contributions should provide a coherent analysis of a specific subject area, clearly showing main cross references in the same FEC.
- ix. Plans to undertake future productive analysis are welcome but cannot substitute for evidence of completed work.
- x. Conference manuscripts are not peer reviewed publications and will be made available within the Conference Material. If the work is subsequently published in the IAEA journal, *Nuclear Fusion*, a link via the DOI will be appended.