



CRYOGENIC ENGINEERING CONFERENCE & INTERNATIONAL CRYOGENIC MATERIALS CONFERENCE

Hawai'i Convention Center

Honolulu, HI, USA ♦ July 9 – 13, 2023

<https://www.cec-icmc.org>

2023 CALL FOR ABSTRACTS & PAPERS

◆ **Abstract Submission Deadline Extended: Friday, March 3, 2023, 11:59 PM,
US Eastern Time** ◆

We invite you to participate in the 2023 joint 24th Cryogenic Engineering Conference (CEC) and International Cryogenic Materials Conference (ICMC) to be held from **July 9 – 13, 2023**, for a lively, enriching meeting of cryogenic-related topics exchanging recent state-of-the-art developments in all areas of cryogenics, including superconductivity, cryocoolers, cryogenic materials, and applications.

CEC/ICMC 2023 will be held at the beautiful open-air Hawai'i Convention Center, which is a comfortable 5-minute stroll east of the Conference hotel, the Ala Moana Hotel. The technical program will consist of plenary and special sessions, as well as concurrent oral sessions, poster presentations, and short courses. In addition, an extensive exhibit will showcase the most up-to-date products and technologies in the cryogenic field.

ABSTRACT SUBMISSION

Authors are requested to submit abstracts and papers that address any aspect of cryogenic engineering and cryogenic materials research. The subject matter should be technically oriented and feature new, original developments in cryogenic engineering and materials.

Abstracts for oral and poster presentations must be submitted in English and will be reviewed for content. Presentations and papers will be due during the conference. The exact dates will be announced well in advance of the conference on the conference web page.

Complete information regarding abstract submission can be found at <https://www.cec-icmc.org>. **The deadline to submit abstracts has been extended to March 3, 2023 (11:59 PM, Eastern Time, UTC-5)**. Abstracts that are not submitted to the submission site by the deadline will only be considered at the discretion of the Program Chairs.

PRESENTATIONS AND PUBLICATIONS

All presentations must be in English. **Presenting authors must register for the Conference.** Manuscripts based on the Conference presentations will be peer reviewed for possible publication in the Conference proceedings. The mode of presentation (oral or poster) will have no effect on the review of the submitted paper, however, the presentation must be given during the scheduled day/time or the paper submitted will not be considered for peer review. Acceptance of an abstract for presentation does not guarantee publication in the Conference proceedings. Instructions for manuscript preparation will be made available at <https://www.cec-icmc.org/>.

EXHIBITS, SUPPORT & ADVERTISING OPPORTUNITIES

Exhibitors will have the opportunity to promote their equipment, systems, products, software, publications, and services during the Conference by posting literature, videos, images to their designated booth/detail page of the virtual platform. This is a perfect opportunity to stay connected to the scientific community and showcase your products and services. **Exhibit registrations will be accepted until April 26, 2023.**

Support and a la carte advertising opportunities will also be available to further enhance your visibility such as a designated promotional presentation during the Conference or promotional emails sent to attendees.

Detailed exhibit, support & advertising information will be made available at <https://www.cec-icmc.org>.

CONFERENCE INFORMATION

All Conference related information will be made available on the Conference website at <https://www.cec-icmc.org>. For any additional Conference inquiries, please contact the Conference Management at:

Centennial Conferences

908 Main Street, Suite 350, Louisville, CO 80027, USA

Phone: +1 303-499-2299 • Fax: +1 303-499-2599

Email: cecicmc@centennialconferences.com

CENTENNIAL
conferences

AWARDS AND SCHOLARSHIPS

Participants are encouraged to submit nominations to the CEC and ICMC for the awards, most of which will be presented during the Conference. Further information on submitting nominations or applying is available at <https://www.cec-icmc.org>.

CEC AWARDS

- The **Samuel Collins Award** honors major contributions to cryogenic engineering. *The deadline for nominations is January 18, 2023.*
- The **Russell B. Scott Best Paper Awards** will be given to authors of selected CEC papers presented at the 2021 Conference.
- The **CEC Klaus & Jean Timmerhaus** and **Donna Jung Scholarships** will be awarded at the 2023 Conference. The scholarship is intended to "develop and foster increased interest and participation in fields of cryogenic studies and to encourage future engineers and scientists in these areas". *The deadline for applications to either scholarship is May 3, 2023.*

ICMC AWARDS

- The **ICMC Lifetime Achievement Award** is given in recognition of lifetime achievements in advancing the knowledge of cryogenic materials. *The deadline for nominations is January 18, 2023.*
- The **ICMC Cryogenic Materials Award for Excellence** is awarded annually at the ICMC Conference, subject to the nomination of an appropriate candidate and individual under 40 years of age, to "recognize excellence in advancing the knowledge of cryogenic materials over recent years". *The deadline for nominations is January 18, 2023.*
- The **ICMC Student Meritorious Paper Award** will be given to an author of a selected ICMC paper presented at the 2021 Conference.
- **ICMC Best Paper Awards** will be given to authors of selected papers presented at the 2021 Conference.

CEC AND ICMC JOINT STUDENT WAIVER FEE PROGRAM

CEC-ICMC have jointly established an enhancing program that allows for a full early registration fee waiver for students who attend the 2023 Conference. Students wishing to apply must a) *submit their regular abstract by the submission deadline*, b) *submit a separate one-page extended abstract by March 8, 2023*, c) *must register as a CEC or an ICMC participant*, d) *present at either a CEC or an ICMC session at the conference*, and e) *agree to submit a paper based on the presentation for publication in the CEC and ICMC proceedings*. Only the presenting student of each extended abstract (one page) is eligible for the fee waiver; if one student is making more than one presentation, only one extended abstract for one of the presentations is needed for that student to participate in this program. Multiple students from the same institute/school and/or research group are encouraged to apply for the fee waiver, as long as they meet the above requirements.

NOMINATIONS FOR THE CEC BOARD

Individuals wishing to nominate a person or themselves for the CEC Board elections are requested to contact:

Wolfgang Stautner
GE Global Research
One Research Circle, EP 113A | Niskayuna, NY 12309
Phone: +1-518-387-7436 | Email: stautner@research.ge.com

The deadline for nominations is May 12, 2023.

PROGRAM SUGGESTIONS

Suggestions concerning the technical program, particularly topical workshops and special sessions, should be directed to the appropriate Conference or Program Chair.

CEC:

Conference Chair

Wesley Johnson
NASA Glenn Research Center
Email: Wesley.L.Johnson@nasa.gov

Program Chair

Jacob Leachman
Washington State University
Email: jacob.leachman@wsu.edu

Program Vice-Chair

Ram Dhuley
FNAL
Email: rdhuley@fnal.gov

ICMC:

Conference Chair

Sonja Schlachter
Karlsruhe Institute of Technology
Email: sonja.schlachter@kit.edu

Program Co-Chair

Judy Wu
University of Kansas
Email: jwu@ku.edu

Program Co-Chair

Klaus-Peter Weiss
Karlsruhe Institute of Technology
Email: klaus.weiss@kit.edu

CALL FOR SPECIAL & JOINT SESSIONS

The CEC and ICMC Organizers invite the community to propose Special and/or Joint Sessions within the general scope of the Conference. To submit your special and/or joint session proposal, please email the appropriate Program Chairs listed above prior to the abstract submission deadline to include the session title and abstract along with the motivation of the special and/or joint session.

CEC/ICMC ABSTRACT SUBMISSION CATEGORIES

CEC SUBMISSION CATEGORIES

- CEC-01 – Large-Scale: Refrigeration and Liquefaction
- CEC-02 – Large-Scale: Systems, Facilities and Testing
- CEC-03 – Cryocoolers: Non-Aerospace
- CEC-04 – Cryocoolers: Aerospace
- CEC-05 – Components: Expanders, Pumps, Compressors, Heat Exchangers, etc.
- CEC-06 – Applications: Superconducting Systems
- CEC-07 – Applications: Instrumentation, Visualization, and Controls
- CEC-08 – Applications: Cryo-fuels Testing and Logistics
- CEC-09 – Applications: Aerospace
- CEC-10 – Applications: Quantum Systems and Materials
- CEC-11 – Applications: Medicine and Biology
- CEC-12 – Fundamentals: Thermal Properties and Theory/Numerical Studies
- CEC-13 – Miscellaneous
- CEC-14 – Special Sessions (*By Invitation Only*)

ICMC SUBMISSION CATEGORIES

- ICMC-01 – NbTi/Nb₃Sn/A15
- ICMC-02 – MgB₂ Wires and Tapes
- ICMC-03 – BSCCO Wires and Tapes
- ICMC-04 – REBCO Coated Conductors
- ICMC-05 – Flux Pinning and Critical Current
- ICMC-06 – LTS and HTS Cables
- ICMC-07 – HTS and MgB₂ Bulks
- ICMC-08 – Fe-based and New Superconducting Materials
- ICMC-09 – Modelling and AC Losses
- ICMC-10 – Aging/Fatigue of LTS and HTS (e.g., Rotating Machines, Pulsed Magnets, ...)
- ICMC-11 – Thin Films, Multilayers, and Artificial Structures
- ICMC-12 – Cryogenic Materials Testing and Methods
- ICMC-13 – Metallic, Ceramic, Composite and Polymeric Materials
- ICMC-14 – Insulation/Conduction, Resins and Impregnation, and Dielectric Properties
- ICMC-15 – Thermal, Electrical, and Magnetic Properties, Radiation, Degradation
- ICMC-16 – 3D Printed Materials
- ICMC-17 – Superconductor Measurements: Mechanical, Electrical, AC Loss and Stability
- ICMC-18 – Topological Materials for Electronics
- ICMC-19 – Applications: Microelectronics, Photonics, Sensors, Detectors, Computation (Quantum, neuromorphic, others)
- ICMC-20 – Applications: Power Electronics, Electric Propulsion, Transportation
- ICMC-21 – Applications: Fusion and Accelerator Magnet Technologies
- ICMC-22 – Applications: Superconductors in Space
- ICMC-23 – Hydrogen Technologies and Compatible Materials
- ICMC-24 – Sustainability / Life Cycle Analysis
- ICMC-25 – Low Temperature Materials Database (*By Invitation Only*)
- ICMC-26 – Special Sessions (*By Invitation Only*)