

# MMM 2023 Conference

Dallas, TX • October 30 - November 3, 2023 • [www.magnetism.org](http://www.magnetism.org)



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## REGISTRATION MANAGER

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## SPECIAL EVENTS/SUPPORT

## MANAGER

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## FINAL CALL FOR PAPERS

**Abstract Submission Site Closes:**

**June 23, 2023**

The MMM 2023 Conference will be held from October 30 to November 3, 2023 at the Hyatt Regency in Dallas, TX, USA. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are cordially invited to attend and actively participate in its technical sessions. The Conference provides an opportunity to share your research and interact with a large and broad collection of researchers working in magnetism, and to learn about the most recent developments in the field. Up-to-date information on the Conference can be found at [www.magnetism.org](http://www.magnetism.org). A compilation of this information is provided in this PDF. We look forward to seeing you in Dallas, and to an exciting, enjoyable, and productive Conference.

**Barry Zink**  
*General Chair*

**Karin Leistner**  
*Program Co-Chair*

**Takahiro Moriyama**  
*Program Co-Chair*

**Hendrik Ohldag**  
*Program Co-Chair*

## Important Dates

Abstract Submission Deadline ( <i>deadline will be strictly observed</i> )	June 23, 2023
Best Student Presentation Award Application Deadline	June 23, 2023
Conference Registration Opens	August 4, 2023
Author Abstract Status Notification	August 11, 2023
Accepted Author Deadline to Confirm Abstract Presentation	August 24, 2023
Child Care Support Application Deadline	August 30, 2023
Student Travel Support Application Deadline	August 30, 2023
Manuscript Submission Site Opens	September 11, 2023
Magnetism as Art Showcase Submission Deadline	September 29, 2023
Manuscript Submission Deadline	October 2, 2023
Advance Registration Deadline	October 6, 2023
Hotel Reservations Deadline	October 6, 2023
Presenter & Session Chair Registration Deadline	October 6, 2023
Presentation Upload Deadline (optional for in-person presenters)	November 3, 2023



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**TECHNICAL SUBJECT CATEGORIES:** This Conference will include basic and applied science and technology related to the field of magnetism and magnetic materials. The technical subject categories are as follows:

## **I. Fundamental Properties and Cooperative Phenomena**

- a. Electronic Structure and Critical Phenomena
- b. Highly Frustrated Magnetism, Spin Glasses and Heavy Fermion Systems
- c. Quantum Materials and Cooperative States: Superconductivity, Spin Liquids, Chern Insulators
- d. Low-Dimensional Systems, Molecular and Organic Magnets
- e. Topological Insulators, Dirac Materials, 2D and Layered van der Waals Materials

## **II. Magnetoelectronic Materials and Phenomena**

- a. Multiferroic Materials and Magnetoelectric Phenomena
- b. Complex Oxides (Bulk, Films and Heterostructures)
- c. Half-Metallic Materials and Magnetic Semiconductors
- d. New and Developing Magnetoelectronic Materials
- e. Voltage-Controlled Magnetic Anisotropy and Exchange Bias
- f. Magneto-Ionics

## **III. Spintronics – Fundamentals and Devices**

- a. Magnetoresistance in Heterostructures (GMR, TMR, TAMR)
- b. MRAM, Magnetic Logic, and Related Devices
- c. Neuromorphic Computing
- d. Antiferromagnetic Spintronics
- e. Skyrmions
- f. Spin-Orbitronics
- g. Spin Injection and Spin Transfer Torques
- h. Spin Currents, Spin Pumping, Spin Hall, and Related Effects

## **IV. Magnetization Dynamics and Micromagnetics**

- a. Magnetization Dynamics, Damping, and Ultrafast Switching
- b. Spin Waves and Magnonics
- c. Domain Wall, Vortex, and Skyrmion Dynamics and Devices
- d. Micromagnetic and Hysteresis Modeling
- e. Modeling of magnetic metamaterials
- f. New Approaches in Computational Magnetism

## **V. Soft Magnetic Materials**

- a. Ferrites and Garnets
- b. Crystalline Alloys
- c. Amorphous and Nanocrystalline Materials
- d. Magneto-Dielectric Materials

## **VI. Hard Magnetic Materials**

- a. Rare-Earth Compounds
- b. Intermetallic Alloys and L10 Alloys
- c. Rare-Earth Free Hard Magnetic Materials
- d. Nanostructured, Composite and Other Hard Magnetic Materials

## **VII. Structured Materials**

- a. Thin Films and Surface Effects
- b. Multi-Layered Films and Superlattices
- c. Patterned Films and Elements
- d. Nanoparticle and Nanowire Arrays and Self-Assembly
- e. Exchange Bias
- f. Nanocomposite Magnetic Materials
- g. 3D and Other Magnetic Structures

## **VIII. Multi-Functional Magnetic Materials and Applications**

- a. Magneto-Optic Materials and Devices
- b. Magneto-Elastic Materials and Devices
- c. Magneto-Caloric Materials and Devices
- d. New Coupled Magnetic Phenomena

## **IX. Magnetic Recording**

- a. Recording Media, Write and Read Heads
- b. Energy-Assisted Recording
- c. All-Optical Recording and Other New Recording
- d. Recording Physics, Modeling, Theory, and Testing

## **X. Sensors, High Frequency Devices, and Power Devices**

- a. Magnetic Sensors (Non-Recording)
- b. High Frequency, Microwave, and Millimeter Wave Devices
- c. Transformers and Inductors
- d. Magnetics for Power Electronics and Control
- e. Shielding, Levitation, and Propulsion

## **XI. Interdisciplinary and Emerging Topics**

- a. Bio-Magnetism
- b. Biomedical Applications
- c. Magnetic Fluids and Separations
- d. New Applications and Other Emerging Topics
- e. Education, Outreach, and Public Engagement in Magnetism

## **XII. Magnetic Characterization**

- a. Magnetic Microscopy and Imaging
- b. Instrumentation and Measurements Techniques



**PROGRAM:** The program will consist of invited and contributed presentations falling broadly within the scope of the categories listed on the previous page. Special sessions held onsite, including the Symposia, Tutorial, and Evening Sessions, will be recorded and available for viewing on-demand after the Conference.



@MMMConf



**INVITED PAPERS:** The submission site for nominations is now closed. Individual invited presentations and symposia, consisting of up to five invited presentations, are an important aspect of the program. Invited speakers will be selected from the nominations received and will be contacted by the Program Co-Chairs in early June. **All invited speakers (single speakers and symposia) will be expected to present onsite in Dallas.** The Program Committee may also select certain contributed abstracts on important late-

breaking results for upgrade to invited status. Please note that if you submitted a nomination, that does not guarantee an invited talk. Regardless of the nomination outcome, an abstract must be submitted separately for consideration to be part of the technical program.

**ABSTRACT CRITERIA:** To maximize your chances of acceptance, keep in mind the following abstract criteria:

- The abstract must report a substantial advance in the science of magnetism or magnetic materials.
- The advance in knowledge must be both original and significant.
- The work reported must be complete, with specific reference to new results. Lack of sufficient context and details may result in abstract rejection.
- The Program Committee wishes to permit as many groups as possible to present their work. Groups or individuals considering the submission of several related abstracts should, wherever possible, combine them into a single submission.
- The abstract must be written in clear English. If necessary, please have a native English speaker edit your abstract before submission.



**ABSTRACT SUBMISSION REQUIREMENTS:** Complete details on formatting your abstract and the online submission process may be found at [www.magnetism.org](http://www.magnetism.org) under “Authors, Abstract Submission.” All abstracts must be submitted electronically, and the presenting author must be a paid Conference registrant. **All oral contributed presenters will be expected to present onsite in Dallas. Poster presenters will have the option to present onsite in Dallas or, if they cannot attend in person, to upload an electronic poster to the Digital Conference Library and must select the format when submitting an abstract.** The Conference does not provide financial support or registration fee waivers for any presenters.

#### Important Deadlines:

- **June 23, 2023: Abstract submission deadline.** *This deadline will be strictly observed.*
- August 11, 2023: Authors notified regarding the status of their submission.
- August 24, 2023: Accepted author deadline to confirm presentation.
- October 6, 2023: Presenter & session chair registration deadline.
- November 3, 2023: Deadline for the optional presentation upload to the Digital Conference Library (*optional for in-person oral and poster presenters; required for poster presenters not attending in-person*).

**CONTRIBUTED PAPERS:** Contributed papers accepted for the Conference will be presented either as oral or poster presentations. Both oral and poster presentations are vital to the success of the Conference and are expected to be of similarly high technical quality.

Authors should indicate their preference for oral (in-person only) or poster (in-person or virtual) presentations when submitting their abstracts; however, the Program Committee will make the final decision on the assignment of papers to specific sessions and the presentation format (oral or poster). Authors will be notified by email of their presentation format and specific session by August 11, 2023.

#### Oral Contributed Presentations:

- **All oral contributed presenters will be expected to present onsite in Dallas.**
- The contributed presentation format is a 10-minute talk by the registered author, followed by a 2-minute discussion period.
- All oral presenters will have the option to submit presentation slides for inclusion in the Digital Conference Library. Prerecorded presentations will not be collected.

#### Poster Presentations:

- **Poster presenters will have the option to present onsite in Dallas or, if they cannot attend in person, to upload an electronic poster to the Digital Conference Library.**
- Posters should consist of well-prepared visual materials about the work.
- Posters should be printed to fit the onsite presentation board dimensions of 116 cm (46 inches) wide by 238 cm (94 inches).
- Posting a copy of a paper is NOT appropriate and will be treated as a NO SHOW.
- The presenting author or representative must be a paid Conference registrant and available to provide details and answer questions during their poster session.
- Poster presenters who cannot attend in person will be required to submit an electronic poster for inclusion in the Digital Conference Library. Onsite poster presenters will also have the option to submit an electronic poster, but it will not be required.

**No Show Policy:** If any of the following applies, then the paper will be recorded as a NO SHOW and will not be published.

- Abstracts that are listed in the program but are NOT presented in person or uploaded by the specified deadline (only for poster presenters not attending in-person).
- Abstracts that are presented by an unregistered and/or unknowledgeable author or representative.
- Abstracts that did not have a registered author or representative available and responsive to address questions.

**PUBLICATIONS:** Conference papers will be published online in early 2024 in *AIP Advances* as a special topic. *AIP Advances* is an open access journal published by AIP Publishing, and articles are freely available to read, download and share. All previously published MMM articles can be viewed at <http://mmm.aip.org>, and published Conference papers are identified by presentation IDs. **All MMM Conference papers published in *AIP Advances* will be open access at no additional cost to the authors.** Detailed instructions on the preparation of manuscripts is available at [www.magnetism.org](http://www.magnetism.org) under “Publications.”

- Recommended paper length: 6,000 words for invited papers and 3,500 words for contributed papers.
- The manuscript submission site opens on September 11, 2023. **All manuscripts must be received by October 2, 2023.** Post-deadline manuscripts will not be accepted and will not be forwarded for review.
- Reviewing and revisions will be handled through the online system. Review standards are the same as those used for regular articles submitted to *AIP Advances*. Due to time constraints, a second review may not be possible for resubmitted papers that were originally rejected.



- Presentations listed as a No Show will not be eligible for publication.
- All manuscripts assigned to *AIP Advances* must be submitted through the AIP Publishing online submission site, Peer X-Press (PXP).

**ADVANCES IN MAGNETISM AWARD:** *AIP Advances* will sponsor the third annual **Advances in Magnetism Award**. The Award will be given to the best paper submitted as part of the MMM 2023 Conference and presented at MMM 2025 in Palm Beach, Florida. **To be eligible to win this exciting award, you must submit your MMM 2023 Conference paper to *AIP Advances*. The winner will receive a cash prize of \$3,500 plus a travel allowance!**

**SUPPORT OPPORTUNITIES:** Organizations interested in supporting Conference events should contact [info@magnetism.org](mailto:info@magnetism.org).

**HOTEL:** MMM 2023 has negotiated a special discounted rate for attendees at the Hyatt Regency Dallas. The special group rate is **\$239 USD per night (plus applicable taxes)**. A limited number of student and government rate rooms are also available. **Book no later than October 7 to secure the discounted group rate.** Reservation links are now available at [www.magnetism.org](http://www.magnetism.org) under "Travel, Hotel Information."

**Congratulations to the Best Student Presentation Award winner and the finalists at the MMM 2022 Conference:**

Winner: **Cheng-Hsiang Hsu**, *University of California Berkeley*

*Finalists:*

Riccardo Battistelli, *Helmholtz-Zentrum Berlin*

Xing Chen, *Université Paris-Saclay*

Rachel Nickel, *University of Manitoba*

Yulan Chen, *Cornell University*

**REGISTRATION:** Conference registration fees and the online registration link will be available on the Conference website in early August 2023.

**REQUIREMENTS FOR ENTRY INTO THE USA:** Obtaining your visa to enter the U.S. for the MMM 2023 Conference may take 3-6 months for processing of your application and receipt of your visa. **For details that apply specifically to your country, go immediately to the nearest U.S. Consulate or Embassy.** Review your visa status now to determine if you need a U.S. visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and other vital instructions. To request a letter of invitation from the Conference, you must be a paid registrant or have already submitted an abstract in order to receive an invitation letter. Complete the online form at [www.magnetism.org](http://www.magnetism.org) under "Travel, Visa Info."

For the most current information on U.S. COVID-19 entry requirements, visit the U.S. Department of State website at <https://travel.state.gov/content/travel/en/traveladvisories/ea/covid-19-information.html>.

**BEST STUDENT PRESENTATION AWARD:** This \$1,000 fellowship recognizes and encourages excellence in graduate studies in the field of magnetism. Finalists will receive a \$250 fellowship. For additional details on and the selection process go to [www.magnetism.org](http://www.magnetism.org) under "Awards."

**Eligibility:**

- The nominee must be a full-time graduate student expecting to graduate within one year of the Conference. Postdoctoral fellows, undergraduates or non-students are not eligible.
- The student's area of research may either be theoretical or experimental in any of the general technical and scientific areas normally presented as part of the Conference.
- The student's regularly submitted abstract must have been accepted for presentation through the normal abstract review process by the Program Committee as an oral presentation.
- The student must attend the Conference to present their talk in person.

**Student Award Application Procedure:**

1. Students must submit an abstract to the Conference according to the standard submission guidelines and deadlines as outlined on the Conference website. DO NOT identify the abstract as part of the student award competition in the text of the abstract. The Conference **abstract submission deadline is June 23, 2023.**
2. Award applications will be accepted via ScholarOne, and must include the following supplemental information:
  - Expected graduation date, advisor name, advisor email.
  - Extended two-page abstract of the presentation which includes a short (300 words or less) explanation of your contribution to the work and significance of the research results.
  - Letter of support from the student's advisor.

**STUDENT TRAVEL SUPPORT:** The Conference will offer travel support to a limited number of qualified students who wish to attend the Conference. This support is intended to offset travel costs.

**The deadline for submitting applications and letters of endorsement is August 30, 2023.** For additional details on eligibility requirements and the application process, go to [www.magnetism.org](http://www.magnetism.org) under "Travel, Student Travel Support."

**CHILD CARE SUPPORT:** There is a limited amount of child care support funding for Conference attendees who bring small children to the meeting or who incur extra expenses in leaving their children at home (i.e., extra daycare or babysitting services). For additional details on allowable expenses and the application form, go to [www.magnetism.org](http://www.magnetism.org) under "Travel, Child Care Support." **The deadline for submitting applications is August 30, 2023.**

**BEST POSTER AWARDS:** Only posters presented in person will be eligible for nomination for this award provided they meet the requirements detailed on the Conference website. Authors must attend in person to present their poster. Selections, made by Poster Session Chairs, will be based on the level of the research, quality of the poster, and clarity of the presentation. Award winners will be announced during the Conference and prominently displayed onsite.

**MAGNETISM AS ART SHOWCASE:** MMM 2023 will host a Magnetism as Art Showcase to highlight the beauty of magnetism and magnetic materials. All submissions will be displayed on the Conference website. Four finalists will be selected by a panel of judges and those submissions will be displayed onsite. The winner will be selected by popular vote.

Detailed information on the Showcase rules and submission requirements are available at [www.magnetism.org](http://www.magnetism.org) under "Program, Magnetism as Art Showcase." **The submission deadline is September 29, 2023.**

**ADDITIONAL INFORMATION:** To receive additional information about the MMM 2023 Conference, to be added to the Conference mailing list, or to update your address, contact [info@magnetism.org](mailto:info@magnetism.org). The latest information on the MMM 2023 Conference can be found at [www.magnetism.org](http://www.magnetism.org).

## Future Conferences

### 2024 INTERMAG CONFERENCE

May 6-11, 2024, Rio de Janeiro, Brazil

### 16<sup>TH</sup> JOINT MMM-INTERMAG CONFERENCE

January 13-17, 2025, New Orleans, Louisiana, USA

### 2025 CONFERENCE ON MAGNETISM AND MAGNETIC MATERIALS

October 27-31, 2025, Palm Beach, Florida, USA

