

# IEEE International Magnetics Conference

Marina Bay Sands, Singapore

April 23-27, 2018



## General Chairs

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## Best Poster Awards

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## Student Travel Awards

### Adekunle O. Adeyeye

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## 2<sup>nd</sup> Call for Papers

Dear Colleagues,

It is our great pleasure to invite you to the IEEE International Magnetics Conference, INTERMAG 2018, which will be held in Marina Bay Sands, Singapore, from Monday April 23<sup>rd</sup> to Friday April 27<sup>th</sup>, 2018.

INTERMAG is the premier conference on all aspects of applied magnetism. It provides a range of oral and poster presentations, invited talks and symposia, a tutorial session, and exhibits. It brings together international researchers with the latest developments in magnetism ranging from fundamental to applied aspects, including advances in magnetic recording, spintronics, energy and power technologies, bio-magnetism, and the emerging fields of Internet-of-Things and smart living. Selected papers from the conference are published in the IEEE Transactions on Magnetics.

We would like to cordially invite you to attend the INTERMAG conference, actively participate in its technical sessions, and contribute to the continued success of this conference series. Up-to-date information on all aspects of the conference can be found on the conference web page [www.intermag2018.com](http://www.intermag2018.com).

Located at the tip of the Malay Peninsula, Singapore's tropical climate welcomes both leisure and business travelers all year round. The island republic's excellent infrastructure enables visitors to enjoy its many sites and attractions in a safe, clean and green environment. This tiny island-state is also remarkably culturally diverse. Where else could you marvel at the charms of yesteryear in the historic Chinatown, then tuck into a delicious curry in Little India, before ending the night atop of the iconic Marina Bay Sands sipping a cocktail?

On behalf of the Management Committee of INTERMAG 2018, we look forward to seeing you in Singapore and to an exciting and enjoyable conference.

Sincerely,

**Sara Majetich S. N. Piramanayagam**

INTERMAG 2018 General Chairs



#### Call for Proposals for Invited Presentations and Symposia

One of the most important aspects of any INTERMAG Conference are the Invited Presentations and Symposia. We are soliciting proposals from the magnetics community at large; please submit your proposals online at <http://www.intermag2018.com>. The deadline for proposal submission is 17<sup>th</sup> November 2017.

#### Digest Submission

Electronic digest submission was opened on 25<sup>th</sup> November 2017. The deadline for digest submission is 5<sup>th</sup> January 2018 and will be strictly observed. The submission link is available at [http://www.intermag2018.com/?p=digest\\_submission](http://www.intermag2018.com/?p=digest_submission). Digests sent via email or regular mail will not be processed or acknowledged. Digests should be in the form of a two page summary. More details about the format are posted on the conference website. Authors will be informed of their submission status via e-mail on 29<sup>th</sup> January 2018.

#### Registration

The advance online registration at reduced rates will be available at <http://www.intermag2018.com> from 30<sup>th</sup> January, 2018 until 25<sup>th</sup> March, 2018. Online registrations after 25<sup>th</sup> March, 2018 and on-site registrations are accepted only at the higher rates. Please note that the conference registration fee includes lunches and tea-breaks during the conference.

#### Presentation

Contributed papers accepted for the conference will be presented either orally or by poster. Authors are requested to indicate their preference for giving an oral or poster presentation on the electronic submission form. The Program Committee will make the final decision on the assignment of papers to sessions and the presentation format for each session. Authors will be notified of their session type via the e-mail of acceptance.

Contributed oral presentations will consist of a 12-minute talk by a registered author using an LCD projector, followed by a 3-minute discussion period. Authors are expected to bring their presentation on their own laptop and backup copy on a USB drive.

Poster presentations will consist of well-prepared visual materials about the work posted on a designated board, with the author available to present details and answer questions during the selected poster sessions. Simply posting a hard copy of the paper is inappropriate and will be marked as a NO SHOW. For further instructions including poster board size please check the conference webpage <http://www.intermag2018.com>.

#### Publication

If your digest is accepted for presentation at INTERMAG, you may submit a manuscript for consideration of publication in the special INTERMAG issue of *IEEE Transactions on Magnetics*. The paper length is 4 to 5 journal pages for contributed papers and 7 to 8 journal pages for invited papers. The deadline for manuscript submission is 9<sup>th</sup> March 2018. Post-deadline manuscripts will not be accepted nor forwarded for review. The review standards will be identical to those used for regular articles to be published in the *IEEE Transactions on Magnetics*. Note that participation in the Conference does not guarantee that a paper will be accepted for publication. Additionally, at least one of the paper's co-authors must present the paper at the Conference in order for it to be considered for publication. Publication time constraints prohibit a second round of reviews for papers that are rejected at the initial stage. All the papers will undergo at least two peer reviews, and the final decision on the publication of the manuscripts will be made by the INTERMAG editors. More details concerning the manuscript submission and publication will be posted on the <http://www.intermag2018.com> website.

#### Best Student Presentation Award

The IEEE Magnetics Society Best Student Presentation Award recognizes and encourages excellence in graduate studies of magnetism. Full-time, presenting author of an oral contribution, graduate students may apply. Note that supplementary information is required to describe the motivation for the research, significance of the research results and the applicant's contribution to the work being presented. A brief letter of support from the student's advisor is also required. Up to five finalists will be selected based on the accepted digests and the supplementary information. Preference will be given to students and their advisors who are current members of the IEEE Magnetics Society. Only the

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finalists will receive notification from the selection committee. The winner will be selected at the conference by the Best Student Presentation Award subcommittee, and announced soon after the conference. The award consists of a prize of \$1500 and certificate for the winner, and a \$250 prize and certificate for the remaining finalists.

## Exhibition & Sponsorship

Exhibits of related services, equipment, materials, software, technical journals and books will be held as a part of the INTERMAG 2018 Conference. Each exhibitor will receive two full complimentary registrations. The complimentary registration entitles the exhibitor entry to the Conference technical sessions, obtain lunches and to a copy of the digest book.

INTERMAG 2018 has a full complement of events and items that your company/institution can support to gain more exposure and recognition. We welcome your participation and support in making the Conference a success. There are three level of support: Platinum level \$25,000, Gold level \$10,000, and Silver level \$5,000. Or in addition, when your company supports any of the items such as, Bierstube, Registration Lanyards, Receptions, Program on Flash Drives, Awards, Breakfast/Coffee Service and so forth, your company will be acknowledged in the INTERMAG 2018 Conference Program Book (both electronic and print versions), on the conference website as well as on-site. In addition, sponsor names will be displayed at plenary reception. All interested in purchasing booth space and/or sponsoring INTERMAG 2018 should contact any of the following: atsufumi.hirohata@york.ac.uk, ykim97@korea.ac.kr, or eleyang@nus.edu.sg.

## Local Information

Located at the tip of the Malay Peninsula, Singapore's tropical climate welcomes both leisure and business travelers year round. The island republic's excellent infrastructure enables visitors to enjoy its many sites and attractions in a safe, clean and green environment. This tiny island-state is also remarkably culturally diverse. Where else could you marvel at the charms of yesteryear in the historic Chinatown, then tuck into a delicious curry in Little India, before ending the night atop of the iconic Marina Bay Sands sipping a cocktail?

## Hotel Reservation

The 2018 Intermag conference has negotiated special discounted rates for Conference attendees at the Marina Bay Sands (MBS) Hotel. The hotel is located just next to the conference venue (Marina Bay Sands Convention Centre) and Gardens by the Bay, and offers easy access to the city's best attractions, Sentosa, China Town, Little India, etc. Singapore's Changi International Airport is just 20 km away. There is an MRT station just at the doorsteps of MBS Hotel. Several great dining options are available within and around the hotel, including The Sky on 57 on the 57th floor. MBS hotel also has a Sky Pool at the top of the building, with its breathtaking view of the city.

## Travel Information

Singapore is well connected to many airports in the world. There are many direct flights to Singapore's Changi International Airport (SIN) each day. Upon arrival, there are many different ways to reach hotels and conference site. While a typical MRT train ride is around \$2, a typical taxi ride is around \$20. The detailed local transportation will be available at the [conference website](#).

## Visa

Visitors from certain countries may require a Visa to enter Singapore. Depending on which country the visitor is from, the requirement for Visa application may be different. For detailed information, please look at the Visa information page at the [conference website](#).

## Student Travel

Travel grants of up to \$1,000 each will be awarded to a limited number of students in the areas of basic and applied magnetism. These grants sponsored by the IEEE Magnetics Society are intended to partially offset travel and local costs related to participation in INTERMAG 2018. Support is for current graduate students only. Postdoctoral fellows, undergraduates or non-students are not eligible. To be eligible for the IEEE Magnetics Society award, the student's advisor must be a member of the IEEE Magnetics Society. Preference for these grants will be given to those applicants who are student members of the Magnetics Society, nearing completion of their graduate studies and presenting conference papers. Students who have previously received travel

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support from the Magnetics Society for any other conference are not eligible. The application website including application forms and instructions will open 30<sup>th</sup> January 2018. The deadline for submitting applications and letters of endorsement is 16<sup>th</sup> March 2018. Incomplete or late applications and endorsement letters will not be considered. Applicants will be notified of the committee's decision about a week after.

## Important Dates

Nominations for Invited Talks and Symposia Deadline:	November 17, 2017
Digest Submission Opens:	November 25, 2017
Best Student Presentation Application Deadline:	January 4, 2018
Digest Submission Closes:	January 5, 2018
Notification of Acceptance:	January 29, 2018
Advance Registration Opens:	January 30, 2018
Final Paper Submission Deadline:	March 9, 2018
Full-Rate Registration Starts:	March 26, 2018

Presented by:



NANYANG  
TECHNOLOGICAL  
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<http://www.intermag2018.com>  
[intermagconf@gmail.com](mailto:intermagconf@gmail.com)

#### Conference Topics

- 1. Soft magnetic materials**
  - a. Crystalline, nanocrystalline and amorphous materials
  - b. Ferrites, garnets and other materials
  - c. Magneto-dielectric materials or meta-materials
- 2. Hard magnet materials**
  - a. Intermetallic and other hard magnets
  - b. Nanostructured and composite hard magnetic materials
  - c. Rare earth transition metal borides
  - d. Hard magnet process and application
- 3. Multi-functional magnetic materials and applications**
  - a. Magnetic fluids and separation
  - b. Magneto-caloric materials and devices
  - c. Magneto-elastic materials and devices
  - d. Magneto-optic materials and devices
  - e. Molecular, organic other and novel magnetic materials
- 4. Magneto-electronics: fundamentals and applications (non-recording)**
  - a. Complex oxides
  - b. Giant magnetoresistance
  - c. Magnetic semiconductors
  - d. Magnetoresistive and half-metallic materials
  - e. MRAM, magnetic logic and devices
  - f. Antiferromagnetic spintronics
  - g. Multiferroic materials
  - h. Organic and carbon-based spin transport
  - i. Spin Injection and transport.
  - j. Spin transfer torque
  - k. Spin-orbitronics (spin-pumping, spin Hall, spin Seebeck)
  - l. Tunneling magnetoresistance
  - m. Voltage-controlled magnetic anisotropy and switching
- 5. Structured materials**
  - a. Ultrathin films and surface effects
  - b. Dzyaloshinskii–Moriya interactions (DMI)
  - c. Multilayer films and superlattices
  - d. Patterned films and elements (non-recording)
  - e. Magnetic clusters, nanoparticles and nanowires
  - f. Exchange bias
  - g. 3D magnetic structures
- 6. Fundamental properties and cooperative phenomena**
  - a. Electronic structure
  - b. Critical phenomena
  - c. Spin glasses and frustrated magnets (e.g., spin ice)
  - d. Correlated systems
  - e. Superconductivity
  - f. Low-dimensional and other systems
- 7. Magnetization dynamics, walls and vortices**
  - a. Domain wall, vortex, and skyrmion dynamics
  - b. Magnetization dynamics and damping
  - c. Spin waves and magnonics
  - d. Ultrafast and all-optical switching
- 8. Modeling and computational magnetism**
  - a. Ab-initio and first principles calculations
  - b. Micromagnetics and multiscale modeling
  - c. Hysteresis modeling
- 9. Magnetic recording**
  - a. Recording media
  - b. Recording heads and materials
  - c. Recording physics, modeling, theory and testing
  - d. Energy assisted recording
  - e. Head-disk interface and tribology
  - f. Magneto-optic, hybrid and novel recording
  - g. Recording systems, coding, servo, actuators and channels
- 10. Sensors and MEMS**
  - a. Magnetic field sensors (non-recording)
  - b. Sensors (not of magnetic field)
  - c. Micro electro-mechanical systems (MEMS)
- 11. High frequency materials and devices**
  - a. Microwave and millimeter wave materials
  - b. Microwave and millimeter wave devices
  - c. Thin film inductors
- 12. Microscopy, imaging and characterization**
  - a. Magnetic and structural measurements and instrumentation
  - b. Magnetic microscopy and imaging
- 13. Life sciences applications**
  - a. Bio-magnetism
  - b. Biomedical diagnostics and imaging
  - c. Biomedical therapies and nanomedicine

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## 14. Motors, generators, transformers, and power devices

- a. Shielding and electromagnetic compatibility
- b. Motor, generator design and modeling
- c. Motor, generator controls and drives
- d. Novel motor applications
- e. Actuators
- f. Power and control magnetics
- g. Magnetic gears, bearings and levitation
- h. Transformers and inductors

## 15. Emerging and interdisciplinary topics

- a. Applications to “internet of things” (IoT)
- b. Emerging topics
- c. Interdisciplinary topics