

From the President

By Manuel Vázquez, President of the Magnetics Society

This Newsletter appears in the run up to INTERMAG 2017 in Dublin, 24-28 April, 2017. I should firstly acknowledge the excellent work that the organizers, headed by Nora Dempsey and Mike Coey, are doing that ensures it will result in a great event. The Program Committee, chaired by Adekunle Adeyeye, Cindi Dennis and Jeffrey McCord, has been able to infuse into the regular program some of the most outstanding magnetic researchers. In addition, they offer very attractive and promising Tutorial, Symposia and Special Scientific sessions. Additional meetings are also organized to attract the participation of the magnetics attendees. The Young Professionals event provides a tutorial on the opportunities offered by industry (not easy, overall) and public and private centers. The Women in Magnetism meeting offers a fun alternative to participate and talk, while perhaps reminding us of a lack of equitable gender distribution in our field. In the Annual Meeting of the Magnetics Society, open to

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Call for Nominations to the Administrative Committee

By Bruce Terris, Nominations Committee Chair

Deadline for submissions: Monday June 5, 2017

The Administrative Committee (AdCom) of the IEEE Magnetics Society includes 24 members who are elected directly by the Society membership. Eight of these members are elected in the fall of each year to serve a three-year term that begins at the start of the following calendar year. Membership in the IEEE and in the Magnetics Society as a regular or affiliate member is required.

The responsibility of AdCom is to manage the operations and functions of the Society. These include the publications of the Society, the conferences sponsored by the Society, the various

Society awards, and the promotion of the general interests of the Society members. More details on AdCom functions may be found in the Constitution and Bylaws of the Society posted on the Society web site: <http://www.ieemagnetics.org/>.

The IEEE Magnetics Society Nominations Committee seeks nominations of outstanding members of the Society to be considered for inclusion on the ballot for election to the AdCom. These nominees will be considered for inclusion on the August 2017 ballot for AdCom for the 2018-2020 term.

(1) Nominations will be accepted from the general membership. Self-nominations are welcome and encouraged! The deadline

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all attendees, we will summarize the activities of the Society sometimes not so well known by the magnetic community, and we expect it will be useful to promote volunteering among attendees.

I will take the opportunity to comment briefly on the Small Conferences that the Magnetics Society will fully sponsor along the year. The already classic Magnetic Recording Conference, TMRC, will hold its 28th edition in Tsukuba, Japan, August 2-4, 2017, co-chaired by Ikuya Tagawa and Mark Kief. In turn, we open the new highly-specialized series of conferences on Magnetic Frontiers, the first one devoted to Topological Insulators. It will take place in Nancy, France, September 18-21, 2017 co-chaired by Stéphane Mangin and Olga Kazakova, who have been able to attract a number of outstanding speakers. Those interested in this emerging topic should go to the Web page for further information (<https://topo-insulators.event.univ-lorraine.fr/>). Before these two meetings, the Society's Summer School, chaired by Jose Manuel Barandiarán, will take place this year during June 19-23, 2017. Based in Santander, Spain, attendees will enjoy the marvelous scenery of the country's northern coast. The event is being coordinated by the Educational Committee, chaired by Atsufumi Hiroata.

Allow me to address now the intense activity that Laura Lewis has conducted, during the short time since she became the new Chair of the Technical Committee. This includes a partial renovation of members on the Committee, with increased distribution by gender, geographical and topical areas. She has conducted a statistics overview on essential matters related with the mission of the Magnetics Society. Among them I should mention, is determining the status of fields of interest to Magnetics Society, developing road-mapping exercises of particular research topics and technologies, and acting as a subject matter expert for the Magnetics Society. Laura is also inquiring to determine the major professional challenges our

members are facing, and how the Magnetics Society should address them to promote a higher correlation between research and industry. At the moment, I know Laura is analyzing the result of the inquiry, the results of which will be summarized in the next Newsletter.

I should not forget, as our Past-president Bruce Terris reminds us in a parallel report in this Newsletter, we are approaching the time for Administrative Committee (AdCom) nominations. The most important activities of the Magnetics Society are discussed by and motions voted upon by the AdCom, after discussion and analysis by the various Committees. The AdCom is formed by the officers, the Committee chairs and 24 members who are elected by Society members through direct vote; eight positions are elected each year. I strongly encourage all of you not only to vote, but especially to nominate colleagues who you think would represent your interests — or nominate yourselves! It is of major relevance to have the widest representation of Society members. Please, do not forget that the deadline to present nominations is June 8, 2017 (for further information go to <http://ieemagnetics.org/>).

I would like also to remind you of the nominations for awards of the Magnetics Society, coordinated by Burkard Hillebrands. We have three main Awards, for Achievements, Early Career and Distinguished Services. In this case, the deadline is July 31 and you can go to the appropriate link on the Society Web site for further details.

Finally, allow me to encourage you once more to join us and volunteer for the various activities developed by the Magnetics Society. This is your Society, from professional and scientific points of view, and we will all benefit from its services when we have the broadest participation.

Manuel Vázquez can be reached via manuel.v.vazquez@ieee.org.

New Senior Members

The following members of the IEEE Magnetics Society were recently elevated to the grade of Senior Member.

February 2017: Bruno Dehez, Eric Hellstrom, Paulo Pereirinha, Jorge Rocha Echeverria, Carmine Senatore and Mario Versaci.

For further information, visit the IEEE Web site at:

www.ieee.org/membership_services/membership/grade_elevation.html

Call for Nominations to the AdCom

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for the receipt of nominations is June 5, 2017. All nominations are to be submitted online, as described below. To be guaranteed a place on the ballot, candidates may also be nominated by petition. For nominations by petition, a list of 60 (or more) petitioners' names, IEEE membership numbers, and original petition signatures must be sent separately to the Nominations Committee Chair. See further information below.

(2) For nominations other than self-nominations, the nominator **MUST** verify that the prospective nominee is willing to stand for election if selected and work closely with the nominee to obtain the required information in the proper format.

(3) The required nominee data are (a) family (last) and (b) given (first) names, (c) IEEE membership number, (d) e-mail address, (e) telephone number, (f) affiliation, (g) country, (h) Biographical Statement (written in the third person), and (i) Statement of Candidacy (written in the first person). Each statement must be in English and be 1200 or fewer characters in length.

(4) Required nominator data (except for self-nominations) are: (a) full name, (b) IEEE number, (c) e-mail address, (d) affiliation, and (e) an optional list of names, IEEE membership numbers and affiliations for additional endorsements of the nomination (limited to 400 characters). For self-nominations, please enter "SELF NOMINATION" in the nominator name block.

(5) Both the nominee and the nominator **MUST** be current members of the IEEE, and of the Magnetics Society or be a Society Affiliate as defined in the IEEE rules. The provided IEEE member number of the nominee will be taken as his/her agreement to stand for election if selected by the Nominations Committee and to serve if elected.

(6) The Nominations Committee makes no guarantee that a nominated person will be included on the ballot. The Committee will select a minimum of 12 names (as required by the Bylaws) and likely no more than 16 names to assemble a ballot that reflect the global nature of the Society. Criteria will include factors such as technical accomplishment, professional honors, leadership, and past service to the Society. The 8 individuals with the largest number of votes will become the elected AdCom members for the 2018-2020 term. The election will be administered by the IEEE and will be held from mid-August to mid-October 2017.

(7) IEEE rules also allow for nomination by petition by 2% of the membership of the Society for automatic inclusion on the ballot. Based on the current membership (around 3000, as of Nov 2016), 60 valid signatures are required for a nomination by petition. The nomination process is the same, except that the list of petitioner names, IEEE membership numbers, and original signatures must be submitted in hard copy to the Chair of the Nominations Committee on or before June 5, 2017. **FOR NOMINATION BY PETITION SIGNATURE LISTS ONLY, SEND MATERIALS TO:** Bruce Terris, IEEE Magnetics Society Nom. Com. Chair, Western Digital, 5601 Great Oaks Pkwy, Bldg. 50/B2, San Jose CA 95119 USA.

(8) All nominations shall be submitted on or before June 5, 2017 via: **<http://ieeemagnetics.org/nominations.php>**.

(9) Nominators are urged to collect and check the required materials **BEFORE** going to the online nomination form, and to carefully proofread the entered fields **BEFORE** final submission. Once submitted, there is no provision for edits or corrections. For those nominations selected for the ballot, the Biographical Statement and Statement of Candidacy will be included on the ballot as submitted.

(10) Questions should be sent by e-mail to: **bruce.terris@ieee.org**.

(11) The members of the Nominations Committee are listed below. These individuals may also be contacted for additional information:

Adekunle Adeyeye: **kunleadeyeye@nus.edu.sg**

Atsufumi Hirohata: **atsufumi.hirohata@york.ac.uk**

June Lau: **june.lau@nist.gov**

Sara Majetich: **sara@cmu.edu**

Stéphane Mangin: **stephane.mangin@univ-lorraine.fr**

John Moreland: **john.moreland@nist.gov**

Te-Ho Wu: **wuteho@gmail.com**

Thank you for your support of the IEEE Magnetics Society, through your membership and your participation in this process.

*Bruce Terris can be reached via **bruce.terris@ieee.org** or +1-408-717-5262.*

Selected INTERMAG Digests Published on IEEE Xplore

By Petru Andrei, Publications Committee Chair

The International Magnetism Conference (INTERMAG) has a long history of publishing the digests accepted for presentation at the conference on the IEEE Xplore platform. As of March 2017, digests from the following INTERMAG conferences have been published on IEEE Xplore: 1989, 1990, 1992, 1993, 1997, 1999, 2000, 2002, 2005, 2006, and 2015. Selected digests from the InterMag 2017 conference will be published on IEEE Xplore during the Summer of 2017. The Magnetism Society receives revenue from downloads of these digests.

There is no cost for INTERMAG authors to publish their accepted digests on IEEE Xplore, and the publication of the digests is optional. In order for a digest to be published, the corresponding author needs to sign an electronic copyright form and present the work at the conference. If the author does not sign the electronic copyright form or present the work at the conference, the digest will not appear on IEEE Xplore. In general, corresponding authors will receive an invitation email to sign the electronic copyright form a few days after the acceptance notifications are sent out.

All the digests published on IEEE Xplore can be accessed on the IEEE Xplore website at <http://ieeexplore.ieee.org/xpl/conhome.jsp?punumber=1000426>. Currently, only subscribing institutions have access to INTERMAG digests. However, starting in 2018, all IEEE Magnetism Society Members will have free access.

To publish conference digests on IEEE Xplore, each conference needs to: (1) Register the conference with IEEE PDF eXpress and request a PDF eXpress site. (2) Request a Letter of Acquisition, which provides the ISBN number for the digests. (3) Collect e-copyright forms from all the authors who wish to publish their digests on IEEE Xplore. (4) Collect and convert each digest to an Xplore-compatible PDF (using the IEEE online tool). (5) Use the Java IEEE Packing List Generator to generate the files necessary to send to IEEE for publication. (6) Send all the files to IEEE.

Interested conferences sponsored by the IEEE Magnetism Society that employ conference digests (not short abstracts), may contact me at pandrei@eng.famu.fsu.edu.

Book Review: *Fundamentals and Applications of Magnetic Materials*

By Ron Goldfarb, Publications Committee Associate Chair

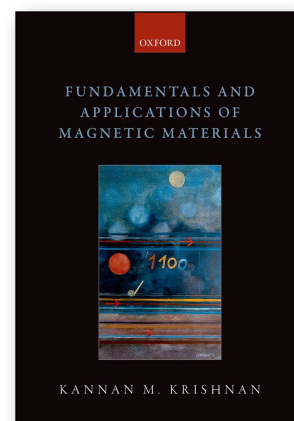
Prof. Kannan M. Krishnan of the University of Washington has assembled three decades of experience in research and classroom teaching in a new book published by Oxford University Press: *Fundamentals and Applications of Magnetic Materials*.

This volume presents introductory magnetism to students at the advanced undergraduate and beginning graduate levels. The book goes beyond the basics in the areas of Prof. Krishnan's research specialties: fine particles, nanostructures, thin films, magnetic domains and domain imaging, medical and biological applications, magneto-electronics, and recent advances in magnetic information storage. A student will obtain both a solid grounding in the fundamentals plus an understanding of current areas of intense research interest.

A collection of exercises at the end of each chapter, suggestions for further reading, and a large set of illustrations make this

book especially suited for use in the classroom. As is the case with many textbooks, the author's former students served as experimental subjects for the development of the exposition. The equations are derived in SI units, with parallel presentations in cgs units.

The book concentrates on the physics and materials aspect of magnetism, including modern applications. It covers some of the specialized methods of magnetic imaging and measurements but does not describe common instruments used for magnetometry.



Introductory Course on MRAM - InMRAM 2017

Submitted by Bernard Dieny, InMRAM 2017 Chair

The 2017 Introductory Course on Magnetic Random Access Memory (InMRAM 2017) will take place during July 3-5, 2017 at PHELMA MINATEC in Grenoble, France.

This introductory course aims at helping students, researchers and engineers to better understand the physics and working principles of this new class of magnetic memory called Magnetic Random Access Memory (MRAM), based on magnetic tunnel junctions. MRAM and particularly Spin-Transfer-Torque MRAM (STT-MRAM) are attracting increasing interest in the microelectronics industry. In 2016, numerous announcements from major microelectronics companies have been published about the forthcoming volume production of MRAM-based products.

The course will cover various aspects of MRAM technology: the basic spintronics phenomena involved in MRAM, the materials constituting the magnetic tunnel junctions, the various categories of MRAM (pros/cons, performances, degree of maturity), a comparison with other technologies of non-volatile memory in terms of working principle, performances, foreseen applications (Phase Change RAM and Resistive RAM), their fabrication process, and the perspectives of low-power electronic circuits based on this hybrid CMOS/magnetic technology.

The course is accessible to attendees having little or no background in magnetism. It lasts 2.5 days plus an optional half day. The course language is English. This will be the fourth edition of InMRAM. The three previous editions were quite

successful with an average of 80 attendees from all over the world, coming from both academic laboratories and companies. At the beginning of the course, each attendee can choose between two introductory tutorials (in the morning of July 3): one on magnetism (for attendees having no or little background in magnetism) and one on microelectronics (for those having little background in microelectronics). Following the previous editions, tutorials on Spin-Orbit-Torque MRAM and Race Track memories have added to the program. On the afternoon of the 3rd day (July 5, optional), each attendee has the opportunity of either visiting SPINTEC or attend a training session on tools for the design of hybrid CMOS/magnetic circuits.

Registration is now open until June 3, 2017. Pre-registration is required: this can be accomplished by visiting <https://www.azur-colloque.fr/DR11/inscription/preinscription/124>.

See the InMRAM Web site at <http://www.InMRAM.com> for more details.

Finally, as mentioned in the last edition of the Newsletter, a new book, *Introduction to Magnetic Random Access Memory*, has just been published, of relevance to this topic. More information can be found at <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-111900974X.html>.

The 28th Magnetic Recording Conference

By Roger Wood, Conference Program Co-Chair

The 28th Magnetic Recording Conference (TMRC 2017) will be held during August 2-4, 2017 at the Tsukuba International Congress Center in Tsukuba, Japan (near Tokyo).

TMRC is the premier international conference on magnetic storage technologies. This year's conference will showcase 38 invited papers focused on significant new advances in magnetic storage, especially for future HDD and MRAM including: Heat-Assisted Magnetic Recording, Solid State Magnetic

Memory, Two-Dimensional Magnetic Recording, Microwave-Assisted Magnetic Recording, and much more.

Evenings will include a lively poster session where the latest ideas can be exchanged. Poster submissions can be made as late May 1, 2017. We look forward to seeing you in Tsukuba.

For more information, visit: <http://www.nims.go.jp/mmu/tmrc2017.html>.

Conference Calendar

April 24-28, 2017 INTERMAG Europe 2017
Dublin, Ireland
<http://www.intermag2017.com>

June 19-23, 2017 IEEE Magnetics Society Summer School
Santander, Spain
<http://summerschool.ieeemagnetics.org>

June 26-30, 2017 European Conference on Physics of Magnetism (PM'17)
Poznań, Poland
<http://www.ifmpan.poznan.pl/pm17/>

July 3-7, 2017 Introductory Course on Magnetic Random Access Memory
Grenoble, France
<http://www.inmram.com>

August 2-4, 2017 The 28th Magnetic Recording Conference (TMRC 2017)
Tsukuba, Japan
<http://www.nims.go.jp/mmu/tmrc2017.html>

September 3-6, 2017 18th. Int. Symposium on Applied Electromagnetics & Mechanics (ISEM2017)
Chamonix, France
<http://www.isem2017.org>

October 9-21, 2017 The European School on Magnetism (ESM 2017)
Cargèse, Corsica, France
<http://www.magnetism.eu/66-esm-2017.htm>

November 6-10., 2017 62nd Annual Conf. on Magnetism and Magnetic Materials (MMM 2017)
Pittsburgh, PA, USA
<http://www.magnetism.org>

To list your conference in the Newsletter Conference Calendar, please contact the Editor

About the Newsletter

The purpose of the IEEE Magnetics Society Newsletter is to publicize activities, conferences, workshops and other information of interest to the Society's members and other technical people in the general area of applied magnetics.

Contributions are solicited from Magnetics Society members, conference organizers, Society Officers & other volunteers, local chapters, and other individuals with relevant material. The Newsletter is published quarterly on the Magnetics Society webpage at

<http://www.ieeemagnetics.org>.

Please send articles, letters & other contributions via email to the Newsletter Editor, Gareth Hatch, at g.p.hatch@ieee.org.

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