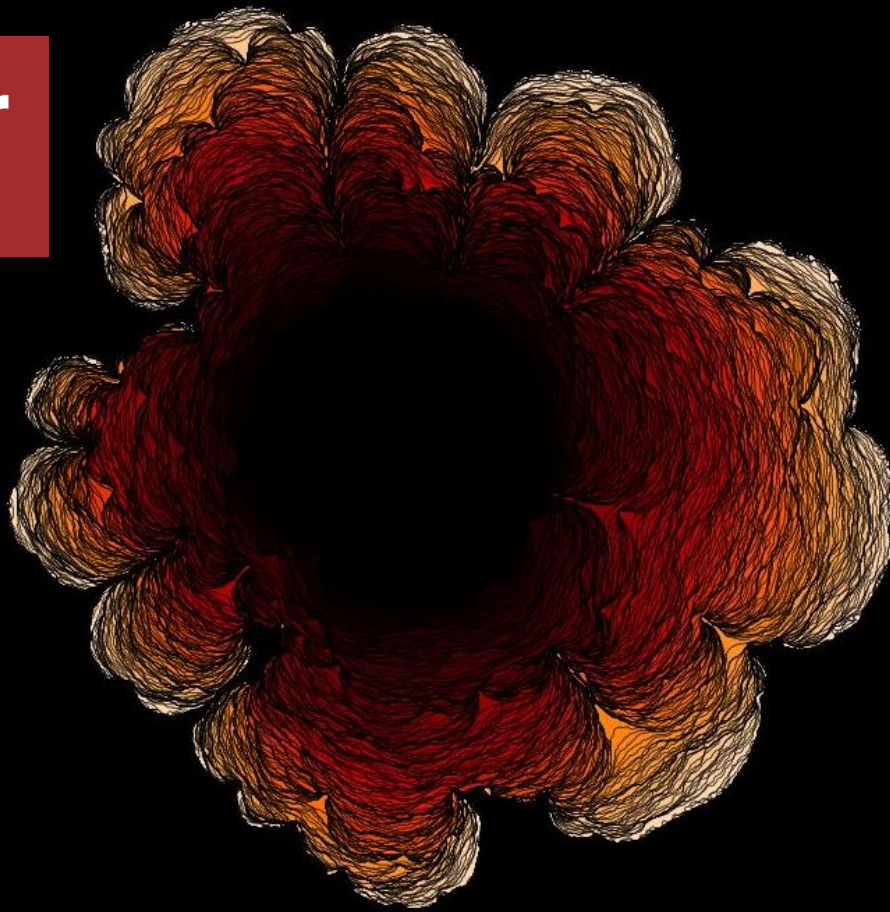


# Newsletter

May 2019



*'Too Thin for a Black Hole': Creep motion of a magnetic bubble in a thin film of CoFeB on MgO.  
Credit: Gianfranco Durin (Institute Nazionale di Ricerca Metrologica, Italy).*

## Newsletter of the IEEE Magnetics Society

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## From the President

By **Pallavi Dhagat**, *President of the IEEE Magnetics Society*

Five months have quickly flown by since I started my term as President of our Society. Here, in our quarterly newsletter, I'd like to briefly update our members on the Society's operations and activities.



In February, I attended the IEEE Technical Activities Board meeting in Florida, USA. As the name suggests, the Technical Activities Board, or TAB for short, is the governing body of IEEE Technical Activities and establishes procedures to assist in the management and operation of the IEEE Societies and Technical Councils.

The primary, and often long and heated, discussion during this two-day meeting was on the planned IEEE-wide response to the mandate being driven by influential private foundations and European funding agencies for open science—i.e., 100% "gold" open-access (OA) publications. This so called cOAlition S, or Plan S, is intended to come into effect in 2020 and, naturally, has ramifications for IEEE journals, many of which are not gold open access and the publications revenue of the individual IEEE Societies and Technical Councils.

Accordingly, the TAB Management Committee was charged with developing recommendations for each Society to be Plan S compliant (or not) based on analysis of numerous factors including current open access activity and growth trend in the Society's field of interest, execution risk (submission-to-publication time and shift needed to succeed) and financial health of the Society's existing journals.

Four possible options were analyzed for the IEEE Magnetics Society—a new full OA journal; a section in Access, IEEE's multidisciplinary open access journal; flipping Magnetics Letters or Transactions on Magnetics to full OA and sharing a full OA journal with another Society—with the recommendation to "wait and see" before committing to an option.

Needless to say that our Society's Publications Committee is keeping a close eye on Plan S developments to help us wisely steer the course when it comes time to making a call. Stay tuned

February, sadly, also saw the passing of Dominique Givord, former director of CNRS Laboratoire Louis Néel in Grenoble, France. A tribute to Dominique can be found elsewhere in the Newsletter. He was a highly regarded member of our community for his contributions as both a scientist and educator. We will miss him dearly.

In other updates, the Summer School, which brings together about 80–100 students from around the world and features expert lectures on fundamentals and select advanced topics in magnetism, will be held in early June at the Virginia Commonwealth University, USA. This will be the twelfth year of a proud tradition of our Society.

Also upcoming in June will be the second edition of the Magnetic Frontiers Conference. Initiated by the Society in 2017, this small conference series aims to focus on topics of cutting-edge interest in fundamental magnetism research or technological application. This year the conference will be held in Lisbon, Portugal and will focus on magnetic sensors.

The Summer School and Frontiers Conference are both examples of initiatives taken by the Society to serve and provide value to our members worldwide. I welcome suggestions for new initiatives that will similarly benefit a wide membership of our Society. Please write to me with your thoughts and ideas.

Finally, with deadlines for the Administrative Committee elections, the Distinguished Lecturer program and Society-level awards in mind, I remind our members to submit nominations for these opportunities. Please see the note from the Nominations Committee Chair elsewhere in the newsletter for submission guidelines. Your participation is vital to ensuring a strong and diverse nominee pool. The success, relevance and vibrancy of our Society depends on voices of all members being represented and heard!

*Pallavi Dhagat can be contacted via email: [dhagat@ieee.org](mailto:dhagat@ieee.org).*

### New Senior Members

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

**February 2019:** Wayne Arter, Feiming Bai, Houchen Chang, Mihai Dimian, Antonio Faba, Alfredo Garcia-Arribas, Do-Kwan Hong, Yannis Karnavas, Donald Kay, Xiao Liu, Joseph Minervini, Kenichi Nakagawa, Helmut Schultheiss, Peter Sergeant, Stjepan Stipetic, Xikai Sun, Bernardo Tellini, Shaopeng Wu and Yihong Wu.

**April 2019:** Jennifer Andrew, Ruiwu Cao, Valentin Ionita, Wilmar Martinez, Jay Morreale, Sergei Nikitov and Derek Stewart.

For more information on elevation to Senior Member, visit the [IEEE Senior Member Grade](#) Web page.

## In Memory of Dominique Givord (1945-2019)

By Nora Dempsey

Dominique Givord was an outstanding scientist, a teacher to many, and a leader within the magnetism community. Dominique's research interests were wide and varied and included fundamental studies of the paramagnetic response of metallic ferromagnets, magnetism of rare-earth transition metal alloys, magnetisation reversal in high performance permanent magnets, exchange bias in nanoparticles, electric field effects on magnetic thin films, antiferromagnetic spintronics, and bio-medical applications of micro-magnets. His passion and enthusiasm inspired coworkers and colleagues, and he will be remembered for his stimulating and challenging discussions.



Dominique contributed greatly to the magnetism community at both the national and international levels. He was the director of the CNRS Laboratoire Louis Néel in Grenoble (1992-2000) and then the National Pulsed Magnetic Field Laboratory (LNCMP) in Toulouse (2000-2002). He was a co-founder and co-coordinator of the European-Commission-funded Concerted European Action on Magnets (CEAM), a project with over 70 partners from academia and industry which ran from 1985 until 1993. This project promoted pan-European collaboration related to the development and use of high-performance rare-earth transition-metal magnets through scientist exchanges, regular meetings and information sharing.

Dominique forged special links with the Vietnamese magnetism community, starting within the framework of a Dutch-sponsored effort to restore scientific research in the post-war years, and was awarded the State Prize of Science and Technology and the Medal of people friendship of the Government of Vietnam. He also played a key role in building close ties between the magnetism communities in France and Romania and was instrumental in establishing the Franco-Romanian Summer School on Magnetism. This biennial school ran from 1999-2003 and in 2005 it evolved into the "European School on Magnetism". Dominique was a driving force behind the establishment of The Joint European Magnetic Symposia (JEMS) and chaired the first edition of this conference when it was held in Grenoble in 2001. The progressive gain in importance of these two European events has contributed to building a European magnetism community, which Dominique wholeheartedly promoted as a co-founder of the European

Magnetism Association. Dominique collaborated with a number of Brazilian groups, and was a visiting professor in the Universidade Federal do Rio de Janeiro. He served as secretary of the magnetism commission of the International Union of Pure and Applied Physics (IUPAP) and as an editor of the Journal of Magnetism and Magnetic Materials.

Dominique was a caring, generous, sincere and very accessible person, and continued to the end to mentor and inspire young researchers. With his profound understanding of magnetism combined with his intuition he formed a critical link between today's research efforts, which benefit from transformational advances in both computing and characterisation possibilities, and the wealth of yesteryear's efforts. The outpouring of glowing testimonies received since his passing are a measure of the man. To paraphrase an African sage, "when an elder dies, a library burns", surely applies to this sensei who will be missed.

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## Call for Nominations

By Manuel Vázquez, Nominations Committee Chair

As all of you know, the time of the Nominations is approaching. The IEEE Magnetics Society is currently accepting nominations for positions on the Society's Administrative Committee (AdCom). These nominations are used each year to select one-third of the 24 elected members of the AdCom, the main forum where the most important activities of the Magnetic Society are discussed and voted on.

By nominating people suitable to represent your interests on the AdCom, you contribute to promoting broad diversity (in terms of gender, geography and academia-industry balance) in the Society's decision-making. The deadline for nominations is June 15, 2019. Further information can be found at the [Society Web site](#).

In addition, you can also contribute with nominations for Distinguished Lecturers (deadline is June 15, 2019), and the [IEEE Magnetics Society Awards](#)—namely the Achievement Award, the Early Career Award and the Distinguished Service Award (deadline is July 31, 2019).

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## Search for the Next Chief Editor of IEEE Magnetics Letters

By Petru Andrei, Publications Committee Chair

After founding *IEEE Magnetics Letters* in 2010 and 10 years of service as Chief Editor, Ron Goldfarb will retire from that position at the end of 2019. We invite expressions of interest from members of the Magnetics Society to be the next Chief Editor.

**IEEE Magnetics Letters** is a peer-reviewed, archival journal covering the physics and engineering of magnetism, magnetic materials, applied magnetics, design and application of magnetic devices, bio-magnetics, magneto-electronics, and spin electronics. *IEEE Magnetics Letters* publishes short, scholarly articles of substantial current interest. It is a hybrid open-access / subscription journal.

The new Chief Editor will start in January 2020 with an initial two-year appointment and two possible re-appointments. The qualified candidate is expected to have a doctorate in engineering, physics, materials sciences, or related areas; at least five years of editorial experience; broad interest across the full spectrum of magnetism and magnetic materials and devices; an established network in the magnetics community; and project-management skills.

The Chief Editor manages the operations of the journal, recruits associate editors and members of the Editorial Review Board, examines incoming manuscripts for originality and scope, assigns them to associate editors to manage the reviews, and shapes and leads the journal. It is an unpaid, volunteer position. A part-time Executive Editor serves as editorial assistant.

The new Chief Editor will have the full support of the outgoing Chief Editor and the Magnetics Society Publications Chair and Associate Publications Chair.

To apply, please submit your brief resume and a letter outlining your qualifications and position statement to me at [pandrei@fsu.edu](mailto:pandrei@fsu.edu). Ron is available to answer questions at [r.goldfarb@ieee.org](mailto:r.goldfarb@ieee.org). Applications will be considered on a rolling basis until September 1, 2019. The appointment will be announced by the IEEE Magnetics Society Administrative Committee during the Magnetism and Magnetics Materials conference in Las Vegas, Nevada, USA, in November 2019.

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## Bernard Diény Receives the 2019 Achievement Award

*By Randall Victora, Achievement Award Subcommittee Chair*

**Bernard Diény** was presented with the 2019 Achievement Award of the Magnetics Society at the recent Joint MMM/INTERMAG conference in Washington, DC. This is the highest award bestowed by the Magnetics Society, given in recognition of exceptional technical accomplishments in the field of magnetics. The citation for Dr. Diény's award reads:

*For contributions to spintronics applications including spin-valves and MRAMs and for strengthening the relationship between magnetics and microelectronics communities.*

Dr. Diény has been a leading researcher in magnetism and

spintronics for 35 years. Some of his earliest important contributions included pioneering work on giant magneto-resistance spin valves, which first appeared in hard drives in 1998. In 2002, his team at Grenoble showed the presence of perpendicular anisotropy at the magnetic metal/oxide interface, an idea that is now frequently exploited for STT-MRAM structures with reduced switching energy. Dr. Diény has published several innovative concepts useful to spintronics, including a spin-valve transistor that exploits hot electrons, and several designs of MRAM cells (thermally assisted MRAM, precessional MRAM, double MTJ MRAM) that have greatly stimulated research in this field. He has also contributed designs for spin-transfer oscillators, e.g. perpendicular polarizer and in-plane free layer, that potentially offer enhanced oscillation amplitude and signal.

Aside from his technical achievements, Dr. Diény has taken a leading role in fostering more interactions between microelectronics and magnetics communities to ease the penetration of spin-electronics within the microelectronics industry. For example, he has organized joint conferences and summer schools, including special poster sessions on MRAM at IEDM together with an oral MRAM Forum supported by industrial sponsors.

Dr. Diény received his Doctorate in physics from the Joesph Fourier University in Grenoble, France in 1985 and his Habilitation à diriger des Recherches from the same university in 2005. He became a permanent researcher at CEA Grenoble in 1992, and in 2001, he founded SPINTEC, where he now leads 90 members in his role as chief scientist.

Dr. Diény is an IEEE Fellow. He received an IBM Outstanding Achievement Award in 2002 and the De Magny Prize from the French Academy of Sciences in 2015 (awarded once every two years for work recognized as outstanding by the Academy).

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## 2019 Joint MMM/INTERMAG Conference - Plenary Session

*By Jürgen Fassbender, Honors & Awards Committee Chair*

The Plenary Session of the 2019 Joint MMM/INTERMAG Conference was held on January 16, 2019 in Washington, DC, USA, as the central event of the conference. It was opened by **Suzanne te Velthuis** (Argonne National Laboratory, USA), as the General Chair of the conference. After welcoming the audience and presenting the venue in Washington, she thanked her management committee for all their efforts put into the organization of this international event. The program committee, headed by **Laura H. Lewis** (Northeastern University, USA) and **Steven May** (Drexel University, USA) was



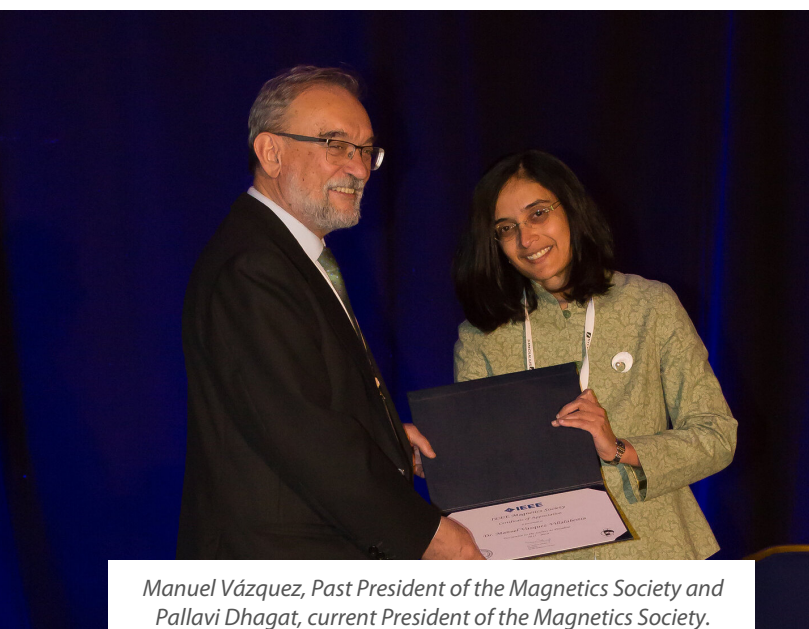
General Chair Suzanne te Velthuis opens the Plenary Session of the 2019 Joint MMM-INTERMAG Conference.

also acknowledged.

Dr. te Velthuis then presented some statistics on the conference. In total, 1496 presentations were accepted by participants from 43 countries. 140 papers were submitted to *AIP Advances* and 296 papers to the *IEEE Transactions on Magnetics*.

Next, the new President of the IEEE Magnetics Society **Pallavi Dhagat** (Oregon State University, USA) thanked her predecessor **Manuel Vázquez** (CISC Madrid, Spain) for his leadership over the past two years. She happily acknowledged that she will have his experience still at her side, in his role as Past President of the Society.

Prof. Vázquez then took the opportunity to thank **Diane Melton** who was responsible for the INTERMAG Conferences as a Conference Manager for more than 30 years. After all these successful events, Mrs. Melton is now stepping back for her



Manuel Vázquez, Past President of the Magnetics Society and Pallavi Dhagat, current President of the Magnetics Society.

retirement.

Before the award presentations began, two great contributors to the field of magnetism, who recently passed away, were remembered. **J. Douglas Adam** (1943 - 2018) worked on microwave acoustics and magnetic signal-processing devices and was manager of Advanced Materials and Electronic Device Research for Northrop Grumman. **Edward Della Torre** (1934 - 2019) was a path-breaking researcher in the field of magnetics, widely known for his research contributions. From 1999 to 2000 he was President of the IEEE Magnetics Society.

The Honors and Awards Chair then guided the attendees through the awards part of the session. The IEEE Magnetics Society Achievement Award is awarded every year to a Magnetics Society member who has made extraordinary contributions to the field of magnetism. This award is the highest honor bestowed by the Society, consisting of a



Diane Melton, retiring Conference Manager and Manuel Vázquez, Past President of the Magnetics Society.

certificate, a US\$3000 cash award, a travel allowance and life membership in the Society. Previous recipients have included such distinguished scientists, engineers and managers as Bill Doyle, H. Neal Bertram, John Slonczewski, Michael L. Mallary, Randy Victora, Takao Suzuki, Luc Berger, Bill Butler and last year Roy Chantrell.

This year's recipient was **Bernard Diény** (Spintec, France). The citation reads: *"For contributions to spintronics applications including spin-valves and MRAMs and for strengthening the relationship between magnetics and microelectronic communities"*. More details on Dr. Diény's award can be found elsewhere in this edition of the Newsletter.

In order to better support researchers in their early career period, the IEEE Magnetics Society has established the Early Career Award. This award will be given to an individual,



*Bernard Dieny, recipient of the 2019 IEEE Magnetics Society Achievement Award.*

nominated not more than 5 years after completion of his or her PhD, and who has already shown outstanding scientific or technical achievements which have been significantly beyond the average performance of a person at that career level. The Early Career Award consists of a cash award of US\$1500 plus a travel allowance of US\$500 and life membership in the Society.

This was the third time, that the Early Career Award is presented. After Wei Zhang (Oakland University, USA) and Anjan Soumyanarayanan (Data Storage Institute, Singapore), this year's award went to **Daive Bossini** (TU Dortmund, Germany). The citation reads: *"For contributions to the femtosecond coherent manipulation of high-energy short-wavelength magnons in antiferromagnets and for the ultrafast activation of magnetoelectricity"*. More details on Dr. Bossini's award can be found elsewhere in this edition of the Newsletter.

In 2015, the IEEE Magnetics Society Distinguished Service Award was established to honor outstanding service to the Magnetics Society, characterized by sustained voluntary service work, which has been significantly beyond the average performance of a person in that function. The award consists of

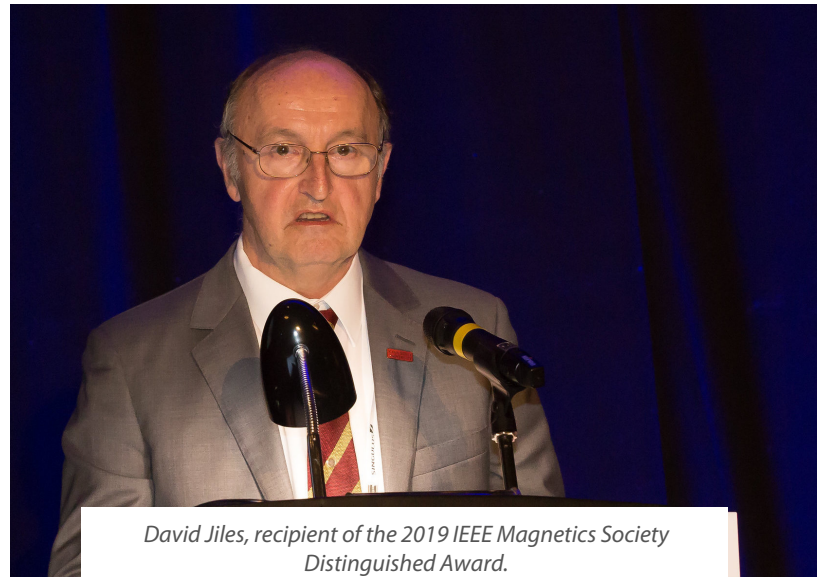


*Daive Bossini, recipient of the 2019 IEEE Magnetics Society Early Career Award.*

a certificate, a US\$ 2000 cash award plus a travel allowance of US \$ 500 and life membership in the Society. 2019 marks the fourth time that this award has been presented. The previous recipients were Ron Goldfarb (NIST, USA), Bob Fontana Jr (IBM, USA) and Kevin O'Grady (University of York, UK).

This year's award was presented to **David Jiles** (Iowa State University, USA). The citation reads: *"For twenty years of leadership in the Magnetics Society as Editor and Editor-in-Chief of IEEE Transactions on Magnetics and as an elected member of the Administrative Committee."* Prof. Jiles' award was highlighted in a previous edition of the Newsletter.

After the awards were presented, the Honors & Awards Chair recognized the new IEEE Fellows. In 2019, an outstanding number of eight members of the Magnetics Society were elevated to the Fellow grade. These were **Antonio Della Corte**



*David Jiles, recipient of the 2019 IEEE Magnetics Society Distinguished Award.*

(ENEA, Italy), **David Dorrell** (University of Kwazulu-Nata, South Africa), **Kaizhong Gao** (Argonne National Laboratory, USA), **Chih-Huang Lai** (National Tsing Hua University, Taiwan), **Mark Lantz** (IBM, Switzerland), **Jonathan Sun** (IBM, USA), **Jan-Ulrich Thiele** (Seagate, USA) and **Weisheng Zhao** (Beihang University, China).

Next, **Bethanie Stadler**, Chair of the Distinguished Lecturer Committee presented the certificates of appreciation to the 2018 Distinguished Lecturers **Allison Flatau** (University of Maryland, USA), **Can-Ming Hu** (University of Manitoba, Canada), **Mitsuteru Inoue** (Toyohashi University of Technology, Japan) and **Yoshichika Otani** (University of Tokyo, Japan). The Society President Pallavi Dhagat then acknowledged last year's INTERMAG Conference Chairs **Sara Majetich** (Carnegie Mellon University, USA) and **S. N. Piramanayagam** (Nanyang Technological University, Singapore) which was held in Singapore.

The Administrative Committee manages the IEEE Magnetics Society and elects biennially the President-Elect and Secretary/Treasurer. After the two-year term, the President-Elect becomes the new President of the Society. The Administrative Committee consists of 24 elected members which serve for a period of three years. Each year eight new members are elected, while the knowledge transfer is guaranteed by the remaining 16.

This year five members of the Administrative Committee, **Kaizhong Gao** (Argonne National Laboratory, USA), **Ganping Ju** (Seagate, USA), **Vincent Mazauric** (Schneider Electric, France), **Massimo Pasquale** (INRIM, Italy) and **Robert Stamps** (University of Manitoba, Canada), ended their terms and were acknowledged for their service to the Society. In addition, 11 chairs of the standing committees are appointed by the President, for a two-year term. This year six chairs finished their service to the Society. A certificate of appreciation was presented to **Bruce Terris** (Nominations), **Burkard Hillebrands** (Honors & Awards), **Atsufumi Hirohata** (Education), **Laura H. Lewis** (Technical), **Mingzhong Wu** (Finance) and **Hiroaki Muraoka** (International Relations).

In addition, the outgoing regional chapter chairs and the chair of the student Summer School **Dario Niebieskikwiat** have been acknowledged with a certificate of appreciation. In the remaining part of the plenary session, the best student presentation finalists were awarded and the travel grant recipients were recognized (see the separate report in the Newsletter).

Before the plenary talk, the winner of the Magnetism as Art Showcase, **Gianfranco Durin** (Istituto Nazionale di Ricerca Metrologica Torino, Italy) was announced by the conference chair (see the separate report in the Newsletter). Finally, **Meigan Aronson** (University of British Columbia, CA) gave her plenary talk on *"Quantum Magnetism: an Unfinished Revolution"*.

Following the Plenary Session, the conference attendees met at the Conference Dinner and used the opportunity for discussions and exchange.



*Meigan Aronson gives the Plenary Talk at the 2019 Joint MMM-INTERMAG Conference.*

## **Davide Bossini Receives the 2019 Early Career Award**

*Submitted by Masahiro Yamaguchi, President-Elect of the IEEE Magnetics Society*

The newly established Early Career Award was presented for the third time in 2019. The IEEE Magnetics Society has established this award in order to better support researchers in the early period of their career. The award is given to an individual, nominated no more than five years after the completion of his or her PhD, and who has already shown outstanding scientific or technical achievements which are significantly beyond the average performance of a person at that career level. The Early Career Award consists of a cash award of US\$1500, a travel award of US\$ 500 and life membership in the Society.

This year's recipient is **Davide Bossini** (TU Dortmund, Germany). Dr. Bossini received his PhD in April 2015 from Radboud University Nijmegen (the Netherlands) with a thesis titled *"Femtosecond optical excitation of spins in antiferromagnetic fluorides. An opto-magnetic journey from the center to the edges of the Brillouin zone."* His supervisors were Prof. A.V. Kimel and Prof. Th. Rasing, and during April-October 2015 he worked as a post-doctoral researcher at Radboud University, with the same supervisors.

From November 2015 to August 2017, Dr. Bossini worked at the University of Tokyo (Japan), initially as a post-doctoral researcher and then a JSPS Post-doctoral Fellow. His supervisors were Prof. J. Yumoto and Prof. M. Kuwata-Gonokami. From September 2017 to May 2018, he worked at TU Dortmund, as a post-doctoral researcher, supervised by Prof. M. Cinchetti. Since June 2018, Dr. Bossini has extended his career at TU Dortmund, in the Experimental Physics department, as Akademischer Rat (equivalent to a non-tenured assistant professor).

Dr. Bossini is an active and resourceful young scientist in the field of spintronics. In particular, his main focus deals with the control of spins by means of ultrashort laser pulses on the femtosecond timescale. Dr. Bossini has chosen the most suitable magnetic systems for optical techniques. He investigated dielectric antiferromagnets which, being insulators, do not absorb optical radiation.

The research field of ultrafast magnetism suffered a lack of understanding of the observed phenomena in its early days, because the entire research effort was directed towards metals. The strong absorption of light by the free electrons triggers complicated pathways of interaction between electrons, the lattice and spins, hindering the processes underlying observations and generating a massive heat load.

In this framework Dr. Bossini showed that light can trigger coherent and incoherent magnons in dielectric

antiferromagnets even in the absence of electronic and lattice heating. Later, he also demonstrated that optical stimulus can push the frequencies of the observed spin oscillations up to the fundamental limit. In fact, he realized the excitation, coherent control (i.e. amplification, phase-flipping and suppression) of magnons with wavevector at the edges of the Brillouin zone. This breakthrough provides further drive to research in antiferromagnetic spintronics. This activity is usually motivated by the terahertz frequencies of the magnetic resonance modes; however Dr. Bossini demonstrated control of the intrinsically highest-frequency magnon modes in a given antiferromagnet.

Dr. Bossini received a Postdoc Travel Award from the journal *Applied Science* in 2017; he won two LASERLAB-EUROPE grants (one as Principal Investigator), providing financial support for experimental campaigns in specialized facilities. Dr. Bossini is a reviewer for several journals (*Nature*, *Nature Physics*, *PRL*, *PRX*, *APL*, *PRB*) and he was Chair of the Gordon Research Seminars (GRS) on Spin Dynamics in Nanostructure 2015 and 2017.

The citation for the Early Career Award reads: "For contributions to the femtosecond coherent manipulation of high-energy short-wavelength magnons in antiferromagnets and for the ultrafast activation of magnetoelectricity."

## 2019 Joint MMM-INTERMAG Conference: Best Student Presentation Finalists

Submitted by Brian Kirby, Education Committee Chair

The winner of the Best Student Presentation Award was selected at the 2019 Joint MMM-INTERMAG Conference in Washington, DC. There were 36 submissions and five finalists.

The selection committee consisted of Atsufumi Hirohata and Brian Kirby. The presentations were judged by an on-site committee which included Zoe Boekelheide, Jodi Iwata, Kyung-Jin Lee, Tim Mewes, Atsufumi Hirohata, Takahiro Moriyama and Brian Kirby.

The winner was **Zhuyun Xiao** (UCLA, USA) with her presentation titled 'Single domain magnetoelastic Terfenol-D

microdisks for particle and cell manipulation'. She received a certificate and a \$1500 cash award. The other finalists received a certificate and a \$250 cash award and were:

- **Niklas Roschewsky** (UC Berkley, USA)  
Title: Spin-orbit torque and Nernst effects in  $\text{Bi}_x\text{Sb}_{1-x}$ /ferromagnet heterostructures;
- **Kresna Bondan Fathoni** (University of Tsukuba, Japan)  
Title: Large MR ratio by using metastable bcc-Cu spacer layer in epitaxial current in-plane giant magnetoresistance devices;
- **William Legrand** (University of Paris-Sud / CNRS Thales, France)  
Title: Controlling the profile, stability and dynamics of chiral hybrid skyrmions; and
- **Rahul Mishraz** (National University of Singapore, Singapore)  
Title: Electric-field control of spin accumulation direction in a spin-orbit torque device.

## 2019 Joint MMM-INTERMAG Conference: Student Travel Grant Reports

Submitted by Jürgen Fassbender, Honors and Awards Committee Chair

Each recipient of a student travel-grant award from the IEEE Magnetics Society was asked to write a brief summary of their conference experience. The following are extracts from the summaries written after the 2019 Joint MMM-INTERMAG Conference in Washington, DC.

\* \* \*

"As the MMM-Intermag Joint Conference 2019 was my first international conference experience, I was amazed by the scale of the event and the number of brilliant researchers from all around the globe. Not only was the MMM-Intermag an enriching experience for the overview of different research fields represented, it also provided me with new angles to look at my own research. I was able to connect to other researchers and discuss various ideas, which I think will help with both my current PhD research and possible future collaborative projects. Overall, I am grateful for the opportunity to attend the event and to receive a travel grant from the IEEE Magnetics Society."

-- Björn Büker

Bielefeld University, Germany

"Participating in MMM-INTERMAG 2019 was an enriching experience which enabled me to expand my knowledge of current research across many fields of magnetism. Presenting work to an international audience was a valuable opportunity





for developing my research career, and attending the plenary allowed me to interact with students, academic experts and leaders in industry. I wish to thank the IEEE Magnetics Society for supporting me through their Student Travel Grant."

-- Charlotte Bull  
University of Manchester, UK

"I sincerely thank IEEE Magnetic Society for providing me student travel grant which helped me to attend the 2019 Joint MMM-Intermag Conference . I made one oral and three poster presentations. I learned a lot while interacting with the experts from my research areas. Poster sessions were quite helpful to enrich the understanding of knowledge-based research being carried out by magnetism community from all over the world."

-- Avinash Kumar Chaurasiya  
S. N. Bose National Centre for Basic Sciences, Kolkata, India

"I really appreciated the opportunity to attend the conference. I learned how other research in magnetism is conducted, to network with students and experts from universities and industries, and to present professionally. I couldn't have learned through those experiences without the support of the Society."

-- Minyeong Choi  
University of Alabama, USA

"What an amazing experience for my first international conference ever! This meeting has helped me as a young scientist to share my work, receive feedback from experts and gave me an opportunity to gain more network. Thank you for the Travel Grant provided by the Society that made it possible for me to join this meeting."

-- Kresna Bondan Fathoni  
National Institute for Material Science, Tsukuba, Japan

"The conference was a great opportunity to meet and discuss with experts from different universities, research labs and industry involved in the wide spanning topic of magnetism. I enjoyed the interesting poster and oral sessions very much and the special events. I'd like to thank the IEEE Magnetics Society for supporting my conference participation with the Travel Grant."

-- Thomas Feggeler  
University Duisburg-Essen, Germany

"This conference given me the chance to learn about the current emerging research areas / work in the field of magnetism / spintronics. In addition, I got a chance to meet experts who are working in either experimental or computational magnetism. The close interaction with other young researchers and experts will be very useful for my PhD and my future scientific career. Finally, I want to thank the IEEE Magnetics Society for



Student Travel Grant recipients with Jürgen Fassbender, Honors and Awards Committee Chair.

supporting me through their Student Travel Grant."

-- Hanuma Kumar  
Indian Institute of Technology, Madras, India

"Many thanks to IEEE Magnetics Society for sponsoring my Travel Grant. The conference was a great journey for me, which provided the opportunities to learn the current state of research from world leaders in magnetics. It also gave a chance to present my research progress and build a network with students and experts all over the world."

-- Xuyang Liu  
University of Hong Kong, China

"I am very grateful for being able to participate in the conference. I would express my appreciation for the great opportunity to talk with experts and students working with magnetism. The poster session was especially enjoyable. Those three hours flew by so fast. I hope that every participant was inspired and got something from attending the conference."

-- Ryohei Morimoto  
Toyohashi University of Technology, Japan

"I greatly appreciate the opportunity to travel to the conference because of the IEEE Magnetics Society Student Grant, particularly as I approach the final year of my graduate studies. I had the opportunity to talk with several experts in my field, and the longer invited talks and sessions throughout the week exposed me to the fascinating research in other subfields."

-- Alice Perrin  
Carnegie Mellon University, USA

"As a graduate student I found this event very interesting as I could meet the experts, whom I have been following, from various fields. The event itself was vibrant with a nice welcome by snowfall. I would definitely join future events by the IEEE Magnetics Society."

-- Arjun Sapkota  
University of Alabama, Tuscaloosa, U.S.A.

"As the conference occurred during my third year as a PhD student it presented me with the opportunity to present my work to a large audience. I was able to see presentations focused around my area of work as well as many new topics, such as the use of magnetism in areas of biology. The Smithsonian Zoo lecture gave some light relief from very detailed magnetism work to a broader topic, which I previously hadn't considered too much. I found the "What will we make magnets from?" question very inspiring and an area which should be looked at and taught more to the wider community to younger generations to allow for new researchers to get involved."

-- Laura Stuffsins  
Loughborough University, UK

"It was a pleasure to attend the conference thanks to the gracious support of the IEEE Magnetic Society Travel Grant. At the conference, I was able to meet and even mingle with the big names in magnetism research. Seeing them in person rather than just their name on a paper has definitely changed the way I read scientific papers now. It was a pleasure to meet other research students in magnetism and learn from them their strategies for work. from navigating through their individual Ph.D programs to looking for a postdoc position or a job in industry."

-- Alexander Toh  
National University of Singapore, Singapore

"The conference was an amazing experience for me. I attended a month after obtaining my master degree and it helped me to get a more insightful look at my field of work and to extend my knowledge in other fields. The posters sessions were very varied and great to communicate with students and researchers from all around the world. I presented two posters at the conference and won my first 'best poster award', which was a very great surprise. I really want to thank IEEE Magnetics Society for giving me the chance to attend this outstanding event."

-- Daniela Valdés  
Instituto Balseiro, Rio Negro, Argentina

## Taiwan Chapter News

By Ko-Wei Lin, Taiwan Chapter Chair

The Taiwan Chapter of the IEEE Magnetics Society held a Members Day during January 5-6, 2019 at the Hui-Sun Forest Resort in Nantou, Taiwan.

The forest is managed by the Department of Agriculture of the National Chung Hsing University (NCHU). In 2010, the annual conference of the Taiwan Association for Magnetic Technology was held here.

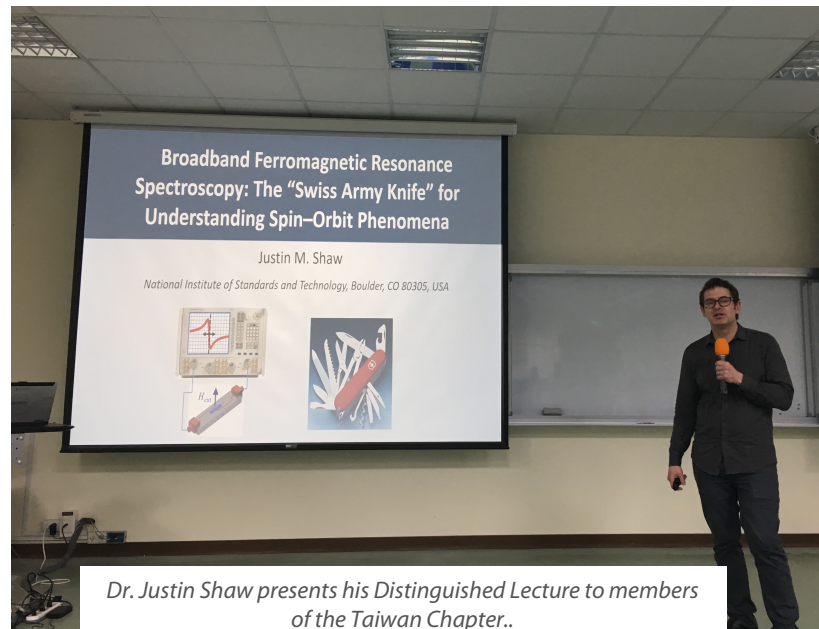
More than 20 people participating in the event, including 12

IEEE members and their families. The purpose of the event is to encourage more people in Taiwan's Magnetic Society to join the Chapter, to discuss their research fields as well as opportunities for collaboration among members.



Some of the attendees of the Taiwan Chapter Members Day at the Hsui-Sun Forest Resort in Nantou, Taiwan.

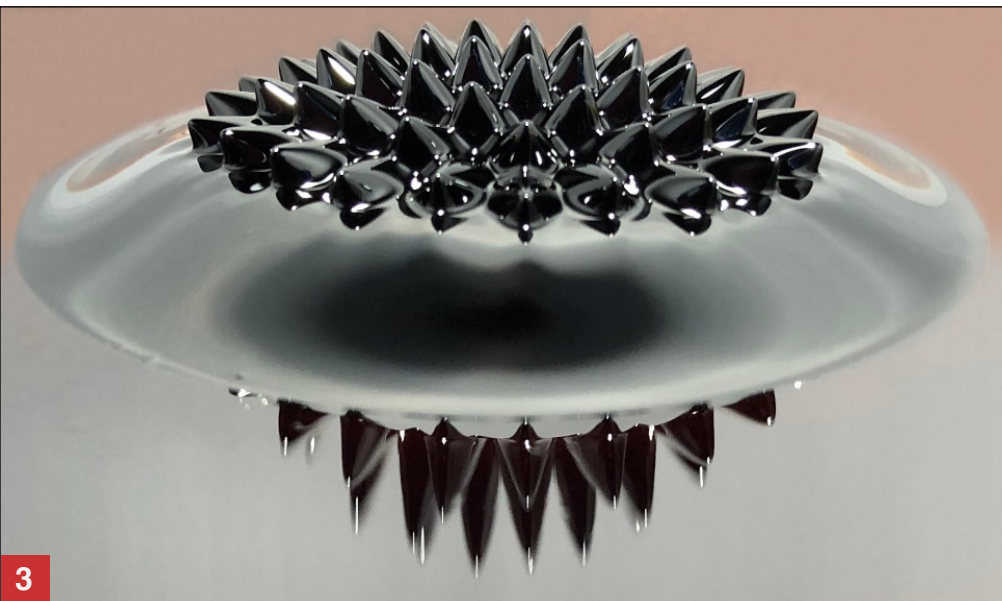
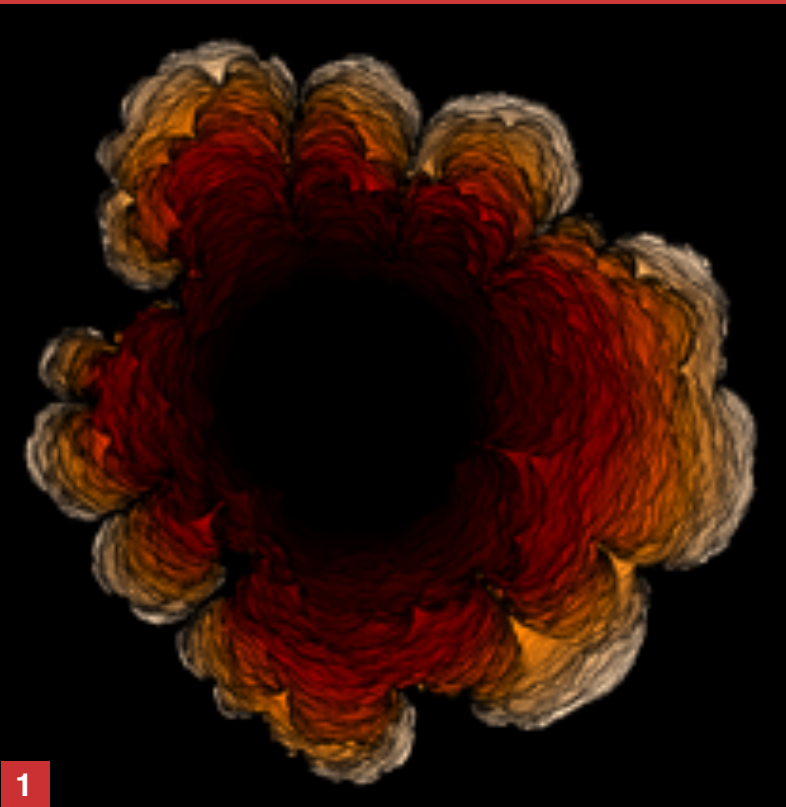
During the event, newly elected IEEE Fellow Prof. Chih-Huang Lai (National Tsing Hua University, Taiwan) handed the position of Chapter Chair to Prof. Ko-Wei Lin (NCHU).



Dr. Justin Shaw presents his Distinguished Lecture to members of the Taiwan Chapter..

On March 26, 2019, the Chapter hosted an IEEE Magnetics Society Distinguished Lecture by Dr. Justin Shaw (NIST, USA), titled 'Broadband Ferromagnetic Resonance Spectroscopy: the "Swiss Army Knife" for Understanding Spin-Orbit Phenomena.'

The event was held at the meeting room of the Research Center for Sustainable Energy and Nanotechnology at NCHU, with 25 people in attendance.



## 2019 Joint MMM-INTERMAG Conference: Magnetism as Art Contest

A total of 36 submissions were received for the Magnetism as Art Contest at the 2019 Joint MMM-INTERMAG Conference, in Washington, DC.

Of these, 24 submissions were invited for display as posters during the Conference, though not all as contestants. Conference attendees then voted on the submissions to produce four shortlisted finalists, and two local art experts selected the winner.

### The 2019 Magnetism as Art Contest Winner:

1. *Too Thin for a Black Hole*, creep motion of a magnetic bubble in a thin film of CoFeB on MgO, submitted by **Gianfranco Durin** (Institute Nazionale di Ricerca Metrologica, Italy.)

### Other Contest Finalists:

2. *Sunflower*, CoFe target on top of a magnetron sputtering source, submitted by **Tianhan Liu** (Florida State University, USA.)
3. *Magnetic UFO*, spikes generated by the instability of a ferrofluid with a strong magnetic field, submitted by **Mina Aziziha** (West Virginia University, USA.)
4. *Magnetic Turbulence*, submitted by **Gong Chen** (University of California Davis, USA.)

The four shortlisted images will feature on the cover of future editions of the Newsletter, starting with the current edition.



## 2019 Joint MMM-INTERMAG Conference: In Pictures





## About the Newsletter

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

Contributions are solicited from Society members, Officers & other volunteers, conference organizers, local chapters, and other individuals with relevant material. The Newsletter is published quarterly on the Society webpage at:  
<http://www.ieeemagnetics.org>

Please send all contributions via email to the Newsletter Editor, Gareth Hatch, at: [g.p.hatch@ieee.org](mailto:g.p.hatch@ieee.org)

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## Conference Calendar

By **Gareth Hatch**, Newsletter Editor

### International Conference on Fine-Particle Magnetism (ICFPM19)

May 27-31, 2019 - Gijón, Spain

### IEEE Magnetics Society Summer School

June 2-7, 2019 - Richmond, Virginia, USA

### York-Tohoku-Kaiserslautern Research Symposium on New-Concept Spintronic Devices

June 12-14, 2019 - York, UK

### Magnetic Frontiers 2019: Magnetic Sensors

June 24-27, 2019 - Lisbon, Portugal

### 15<sup>th</sup> International Conference on Magnetic Fluids (ICMF 2019)

July 8-12, 2019 - Paris, France

### Frontiers in Biomagnetic Particles

August 5-7, 2019 - Telluride, Colorado, USA

### 11<sup>th</sup> International Conference on Magnetic and Superconducting Materials (MSM19)

August 17-24, 2019 - Seoul, South Korea

### European School on Magnetism (ESM 2019)

September 2-13, 2019 - Brno, Czech Republic

### 24<sup>th</sup> Soft Magnetic Materials Conference (SMM24)

September 4-7, 2019 - Poznan, Poland

### Conference on Magnetism and Magnetic Materials (MMM 2019)

November 4-8, 2019 - Las Vegas, Nevada, USA

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