



From The President

By Randall Victora, Society President

In my first year as President of the Magnetics Society, I have written four columns, mostly detailing administrative issues such as explaining conference site selection and the organization of the IEEE. As I begin my second (and final) year, I will shift focus to a more technical topic: the 11th Joint MMM-INTERMAG conference that will occur this January in Washington, DC. This has always been my favorite conference because it reflects the exceptional breadth of our field. In particular, topics range from basic magnetism such as critical phenomena, Colossal Magneto-Resistance, and correlated electron



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2010 Summer School

By Albrecht Jander, Education Committee Chair

The third annual IEEE Magnetics Society Summer School will be held August 16-20, 2010 in Dresden, Germany. The School will be held on the campus of the Institute for Solid State and Materials Research (IFW) and co-hosted by the Forschungszentrum Dresden Rossendorf (FZD).

The Summer School will follow a similar format to the successful 2008 and 2009 schools held in Colorado Springs and Nanjing respectively. Students attending the school will participate in a week of full-day lectures on fundamental and advanced topics in magnetism, presented by leading experts from the Magnetics Society. Attendees will have an opportunity to network with their peers from around the world in poster sessions and social engagements. Graduate students from all countries are encouraged to apply for admission. We anticipate

that around 50 students will be admitted. Students accepted for the Summer School will have all local expenses and most travel expenses paid. The deadline for student applications is February 15, 2010. A letter of endorsement from the student's advisor is also required.

Up to date information on the Summer School as well as application procedures can be found on the IEEE Magnetics Society web page:

www.ieeemagnetics.org

All faculty members are encouraged to download a poster, available on the site, to advertise this opportunity to their students.

2010 IEEE Fellows

The following members of the IEEE involved in magnetics were recently elevated to the grade of IEEE Fellow. Congratulations!

- Burkard Hillebrands (Technical University Kaiserslautern) for contributions to the understanding of magnetic excitations, including linear and nonlinear spin waves
- Kevin O'Grady (University of York) for contributions to magnetic measurement techniques applied to information storage systems
- Thomas Roser (Brookhaven National Laboratory) for contributions to the design of magnets in particle accelerator applications
- Maria Sabrina Sarto (Sapienza University of Rome) for contributions to advanced

materials in electromagnetic compatibility applications

- John E. Snyder (Cardiff University) for contributions to synthesis and characterization of magnetic bulk and thin film materials
- Jan Kazimierz Sykulski (University of Southampton) for contributions to methods and applications of computational electromagnetics

The IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest.

The total number selected in any one year does not exceed one-tenth of one percent of the total voting Institute membership.

Results of Society AdCom Election for 2010-2012 Term

By Carl Patton, Nominations Committee Chair

The IEEE has provided the results of the recent AdCom election. The eight elected members for the 2010-2012 term are Roy Chantrell, Bernard Dieny, Claudia Felser, Ron Goldfarb, Stuart Parkin, Migaku Takahashi, Thomas Thomson, and Manuel Vázquez. Congratulations.

On behalf of the Society, I would like to thank all the nominators who provided "nominations for consideration for the ballot," those nominees for consideration for the ballot who agreed to stand if selected, and all of the members of the Society who cast their vote. The total number of ballots was 2,947 (hard copy ballots were sent by mail to those members without an e-mail address on the IEEE data base). The total number of votes cast was 453 (96 paper and 357 web based), for a total return of 15.4%. This return is better than last year but it could still be better. **NEXT YEAR, PLEASE VOTE.** This is YOUR Society!

There was a record number of nominations for consideration for the ballot, 32 in all. The Nominations Committee was comprised of John Chapman, Olle Heinonen, Burkard Hillebrands, Hiroaki Muraoka, Carl Patton, Sung-Chul Shin,

Usha Varshney, and Roger Wood. The committee reviewed and discussed the excellent slate of nominees for consideration for the ballot at length and narrowed the list to 18 individuals for placement on the actual ballot. Considerations for selection were as given in the Society Constitution and Bylaws (available on the Society web site). I would also like to thank these dedicated Nominations Committee members for their work in this important job for the Society.

Looking ahead, it is not too early to begin thinking about the upcoming 2010 AdCom election of eight new members for the 2011-2013 term. You will be receiving information on the nominations procedure in the March-May 2010 time frame. All members are encouraged to consider suitable candidates and work with them to prepare nominations for consideration for the ballot. Once the ballot is framed, we also hope that you, the membership, WILL VOTE.

Best wishes, and thanks for your continued membership in the IEEE Magnetism Society and your active participation in the affairs of the Society.

From The President *continued from page 1*

materials, to highly applied areas such as magnetic recording and motor design. Even more interesting is the path that some topics follow as they are first discovered and then (sometimes) rapidly moved towards application and commercialization. Probably the best known recent example is Giant Magnetoresistance, which moved from noteworthy basic research in the late 1980's and early 1990's to product by 1998. Along the way, it garnered basic science awards (e.g., Nobel prize), device awards (e.g., IEEE Reynolds B. Johnson Data Storage Device Award), and (usually) commercial profits.

By comparing the sessions at consecutive Joint conferences, we can identify other topics that seem to be following the same route. Although postulated theoretically years earlier, the experimental emergence of current induced spin torque was marked by a well attended symposium at the 2004 conference in Anaheim. The talks primarily reflected the interests of basic science in observing phenomena such as current induced switching of a small ferromagnetic element or oscillations at microwave frequencies. By the 2007 conference in Baltimore, the number of presentations was nearing 100 and many of them were addressing the use of spin torque for solving the scaling problems of MRAM or more explicitly recognizing the potential of the first submicrometer sized microwave source. The advance program of the 2010 conference tells me that there will be even more presentations on spin torque with more applications identified and ever better performance. It appears that a product cannot be too distant.

Magnetic recording has repeatedly revealed the same pattern of a scientific/technical discovery, initially viewed as a practical

impossibility, later becoming the mainstream product. For example, the magnetic tunnel junction (MTJ) was originally deemed unsuitable for high density recording owing to the high resistance that produced excessive time constants (along with other problems), and would only worsen as the area of a sense head decreased. However, Joint Conference papers have consistently reported ever lower resistance area product, and in recent years, MTJ sense heads have been widely commercialized. Perpendicular recording filled pages of conference programs for about 20 years before it was finally ready for commercialization. I note that energy assisted magnetic recording, primarily by laser, is enjoying a resurgence in the 2010 conference program: does this mean that future disk drives will depend on this technology?

In closing, I believe that we should all be thankful that there exists this conference that can encompass the full trajectory of the scientific/engineering endeavor beginning with basic research and ending with commercial product. It provides an important venue for basic and applied researchers to interact with each other and further both activities. It helps to remind us that it takes a range of people to discover an effect, explore its potential, and reduce it to practice: all are essential in producing the benefits of new products. Finally, at the risk of appearing self-serving, I find it greatly to the credit of IEEE and the American Institute of Physics that they have co-operated for more than 30 years to co-sponsor the Joint MMM-INTERMAG conference.

Randall Victora can be reached via email at victora@umn.edu

Update From The Technical Committee

By Jordan Katine, Technical Committee Chair

Just a friendly reminder to those looking for conference program committee members or for publishers looking for expert editors or referees: the IEEE magnetics society technical committee is a potential source of excellent candidates (or experts who can direct you to excellent candidates).



If you contact me, I can send you the current list of technical committee members along with a summary of their areas of expertise.

Jordan Katine can be reached via email at jordan.katine@hgst.com

2010 Distinguished Lecturers

The IEEE Magnetics Society selected four Distinguished Lecturers for 2010. They are:

- ▶ Prof. E. Dan Dahlberg (University of Minnesota);
- ▶ Prof. Claudia Felser (Johannes Gutenberg Universität);

- ▶ Prof. Kevin O'Grady (University of York);
- ▶ Prof. Shoogo Ueno (Kyushu University, Teikyo University, & University of Tokyo).

Each Distinguished Lecturer makes his/her own schedule, so contact them early, via the email addresses below, before their schedules are filled.

IEEE Magnetics Society 2010 Distinguished Lecturer

An Investigation of Magnetic Reversal at Almost the Nanoscale

E. Dan Dahlberg - University of Minnesota, Minneapolis, Minnesota

One of the current frontiers in magnetism is to understand the domain structure and the magnetization reversal in nanometer-sized particles. Explorations at these length scales have been aided by the development of new magnetic imaging techniques [1], one of which is the magnetic force microscope (MFM), a variant of the atomic force microscope. We have utilized the high resolution MFM (30 nm) we developed [2] to increase our fundamental understanding of magnetism on this length scale. I will discuss the field-induced magnetic reversal in particles on the order of hundreds of nanometers in width and about twice that in length. In general, for the small aspect (length to width)

ratio, the magnetization reverses by the formation of a single vortex and its propagation down the length of a particle (when the fields are applied perpendicular to the long axis). There are some surprises when the aspect ratio of the particles increases.

[1] E. Dan Dahlberg and Jian-Gian Zhu, *Physics Today*, vol. 48, pp. 34-40, April 1995.

[2] George D. Skidmore, Sheryl Foss, and E. Dan Dahlberg, *Appl. Phys. Lett.*, vol. 71, pp. 3293-3295, December 1997.



E. Dan Dahlberg received the B.S. and M.S. in physics from the University of Texas at Arlington in 1970 and 1972, respectively, and the Ph.D. from University of California, Los Angeles, in 1978. He joined the faculty at the University of Minnesota in 1980 and is currently a professor of physics

and an Institute of Technology Distinguished Professor. He is the director and principal investigator of the Magnetic Microscopy Center (MMC) at the university. His recent research is on exchange bias, the physics of magnetic tunnel junctions, and noise in magnetic devices. Some of his previous research includes magnetotransport and other magnetic properties of thin films and multilayers, the dynamics of spin glasses, nonequilibrium superconductivity, the thermodynamics of magnetic superconductors, and the quantum Hall effect.

Prof. Dahlberg is a member of Sigma Pi Sigma (1971) and a Fellow of the American Association for the Advancement of Science (1995) and the American Physical Society (1996). He was an Alfred P. Sloan Foundation Research Fellow (1981-1985). He served as general chair of the 2001 Joint Magnetism and Magnetic Materials (MMM)-Intermag Conference and as an editor of several MMM and MMM-Intermag conferences. He was divisional councilor to the Division of Condensed Matter Physics of the American Physical Society (1999-2002), a member of the Executive Board of American Physical Society (2001-2002), and Vice President of the International Union of Pure and Applied Physics (IUPAP) (2006-2009).

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Heusler Compounds: Multifunctional Materials for Spintronics

Claudia Felser - Johannes Gutenberg Universität, Mainz, Germany

Tremendous progress has been made recently in the development of magnetic Heusler compounds specifically designed as materials for spintronic applications [1]. While problems in the field of spintronics remain, the use of half-metallic Heusler compounds provides a prospect for novel solutions.

Heusler compounds can be made with high spin polarization and high Curie temperature as well as high spin injection efficiency, either very low or high damping, tunable magnetic moment (low and high magnetic moments can be realized), and tunable anisotropy. There is, therefore, great potential that many materials-related problems present in current-day 3d metal systems can be overcome.

The handling of interfaces with respect to their chemical properties (atomic diffusion and roughness), electronic properties (e.g., Schottky barrier design), and spin properties (injection and pumping) remains a big challenge. The potential exists for new phenomena and applications with the use of novel materials in the Heusler compound family—for example,

the use of semi-conducting Heusler compounds as non-ferromagnetic spin conductors.

High spin polarization and high Curie temperatures were found in Co₂-Heusler compounds, with Curie temperatures up to 1120 K in Co₂FeSi. Mn₂YZ compounds (Y = Mn, Cr; Z = Al, Ga, Si, Ge, Sb) such as Mn₃Ga are ferrimagnets with low magnetic moments despite their high Curie temperatures. Due to the Jahn Teller instability of manganese in these materials, some of them show a tetragonal distortion, which renders out-of-plane magnetization in thin films possible. Semiconducting half-Heusler compounds such as TiNiSn have attracted attention as potential candidates for thermoelectric applications. These complex C1b compounds can be designed as n- and p-type thermoelectrical materials with exceptionally large figure of merit, $ZT \approx 1.5$ at high temperatures.

The potential for applications of these ternary compounds as rationally designed, multifunctional materials will be discussed.

[1] C. Felser, G. H. Fecher, and B. Balke, *Angew. Chem. Int. Ed.*, vol. 46, pp. 668-699, January 2007.



Claudia Felser earned her diploma in chemistry at the University of Cologne in 1989 and completed her doctorate in physical chemistry there in 1994. After postdoctoral fellowships at the MPI in Stuttgart and the CNRS in Nantes (France), she joined the

University of Mainz. She was a visiting scientist at Princeton University (USA) and a visiting professor at the University of Caen (France). She became a full professor at the University of Mainz in 2003. She is the chair of the DFG research group “New Materials with High Spin Polarization” and is the director of the Graduate School of Excellence “Materials Science in Mainz” of the German Science Foundation (DFG). She was honored with the order of

merit “Landesverdienstorden” of the state Rhineland-Palatinate for the foundation of a lab for school students at the University of Mainz.

Prof. Felser has written more than 150 articles and been granted several patents. Her recent research focuses on the design of new materials for spintronics and energy technologies such as solar cells, thermoelectric materials, and superconductivity. The materials under investigation are Heusler compounds and compounds with related structure type.

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A New Paradigm for Exchange Bias in Polycrystalline Films

Kevin O'Grady - The University of York, Heslington, York, United Kingdom

The phenomenon of exchange bias has remained something of a mystery since it was discovered in core-shell particles in 1956 [1]. Over the subsequent years many different models have been proposed to explain this effect, most of which agree with some experimental data that can be found in the literature. No single theory, however, has been able to explain the data consistently for different systems.

In this lecture the reason for our inability to explain exchange bias will be reviewed, and a new paradigm to explain the phenomenon in sputtered polycrystalline films will be presented. This new paradigm is based on an original granular model described by Falcomer and Charap [2]. Its premise is that very careful thermal and magnetic cycling is required to ensure that the order in the antiferromagnetic grains is controlled. Without such careful control, reproducible data cannot be obtained.

These time-consuming and complex measurement procedures, to which we refer as the York protocol, have been developed over the last 9 years. Using the York protocol and an extension of the former granular model, effects such as the film thickness

dependence and grain size dependence of exchange bias can be fully explained with an excellent fit between theory and experiment [3]. The York protocol also allows for the measurement of the anisotropy constant of antiferromagnetic grains [4]. This model provides an understanding of the behavior of the individual antiferromagnetic grains in detail. Since the behavior of the "bulk" of the antiferromagnetic grains is now known, preliminary data describing the behavior of the interface spins can now be distinguished from the behavior of the bulk. Possible mechanisms for the behavior of the interfaces themselves will also be presented.

[1] W. H. Meiklejohn and C. P. Bean, Phys. Rev., vol. 102, pp. 1413-1414, June 1956; IEEE Trans. Magn., vol. 37, pp. 3866-3876, November 2001.

[2] E. Fulcomer and S. H. Charap, J. Appl. Phys., vol. 43, pp. 4190-4199, October 1972.

[3] G. Vallejo-Fernandez, L. E. Fernandez-Outon, and K. O'Grady, J. Phys. D: Appl. Phys., vol. 41, 112001, June 2008.

[4] G. Vallejo-Fernandez, L. E. Fernandez-Outon, and K. O'Grady, Appl. Phys. Lett., vol. 91, 212503, November 2007.



Kevin O'Grady received the Ph.D. in physics from The University of Wales in Bangor. He was a junior professor at Loughborough University of Technology and subsequently in the School of Electronic Engineering at Bangor, where he achieved a full professorship. In 2000 Prof. O'Grady relocated

to the Physics Department at The University of York.

Prof. O'Grady's work concentrates on magnetization reversal in a wide range of materials, but particularly those finding application in the information storage industry such as magnetic hard disk drives. In his early career Prof. O'Grady investigated fundamental fine particle magnetism by utilizing colloidal dispersions (ferrofluids) as the medium for study. His current research interests are in the field of materials for hard

disks, and also in exchange bias materials where an antiferromagnet is grown in contact with a ferromagnet and is used to pin one layer in a giant magnetoresistance stack in disk drive read sensors.

Prof. O'Grady has published over 250 refereed works on the subject of magnetization reversal. He is a former president of the IEEE Magnetics Society and an editor of The Journal of Physics D: Applied Physics. He has been associated with the Intermag Conference as Program Committee co-chair in 1996, 2002 and 2008, and will serve as the general chair of the 2010 Joint MMM-Intermag Conference. He is the founding director of the York Materials Research Institute.

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Biomagnetics: An Interdisciplinary Field Where Magnetics, Biology, and Medicine Overlap

Shoogo Ueno - Kyushu University, Teikyo University, and University of Tokyo, Japan

Biomagnetics is an interdisciplinary field where magnetics, biology and medicine overlap. It has a long history since 1600, when William Gilbert published his book *De Magnete*. Recent advances in biomagnetics have enabled us not only to detect extremely weak magnetic fields from the human brain, but also to control cell orientation and cell growth by extremely high magnetic fields. Pulsed magnetic fields are used for transcranial magnetic stimulation (TMS) of the human brain, and both high frequency magnetic fields and magnetic nanoparticles have promising therapeutic applications for treatments of cancers and brain diseases such as Alzheimer's and Parkinson's. On the imaging front, magnetic resonance imaging (MRI) is now a powerful tool for basic and clinical medicine. New methods of MRI based on the imaging of impedance of the human body, called impedance MRI, and the imaging of neuronal current activities in the human brain, called current MRI, are also being developed.

This lecture focuses on the advances in biomagnetics and bioimaging obtained mostly in our laboratory in recent years. The lecture describes: (1) a method of localized magnetic stimulation of the human brain by TMS with a figure-eight coil; (2) magneto-encephalography (MEG) to measure extremely weak magnetic fields produced from brain electrical activity using superconducting quantum interference device (SQUID) systems; (3) impedance MRI and current MRI; (4) cancer therapy and control of iron-ion release from, and uptake into, ferritin, an iron-storage protein, by using both high frequency and pulsed magnetic fields and magnetic nanoparticles; and (5) magnetic control of biological cell orientation and cell growth by strong static magnetic fields. These new biomagnetic approaches will open new horizons in brain research, brain treatment, and regenerative medicine.



Shoogo Ueno received the B.S., M.S. and Ph.D. (Dr. Eng.) degrees in electronic engineering from Kyushu University, Fukuoka, Japan, in 1966, 1968, and 1972, respectively. Dr. Ueno was an associate professor with the Department of Electronics, Kyushu University, from 1976 to 1986. From 1979 to 1981, he

spent his sabbatical with the Department of Biomedical Engineering, Linköping University, Linköping, Sweden, as a guest scientist. He subsequently served as a professor in the Department of Electronics, Kyushu University (1986-1994) and in the Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo (1994-2006). In 2006 he retired from the University of Tokyo as professor emeritus. Since 2006 he has been a professor with the Department of Applied Quantum Physics, Graduate School of Engineering, Kyushu University, and is also dean of the Faculty of Medical Technology, Teikyo University, Fukuoka.

Dr. Ueno is a Fellow of the IEEE (2001) and of the American Institute for Medical and Biological Engineering (2001). He is a

Fellow and Member-at-Large of the Governing Council of the International Academy for Medical and Biological Engineering (2006). He was an elected member of the IEEE Magnetics Society Administrative Committee (2004-2009). He was President of the Bioelectromagnetics Society (2003-2004), Chairman of the International Union of Radio Science's Commission K on Electromagnetics in Biology and Medicine (2000-2003), President of the Japan Biomagnetism and Bioelectromagnetics Society (1999-2001), President of the Magnetics Society of Japan (2001-2003), and President of the Japanese Society for Medical and Biological Engineering (2002-2004). He received the Doctor Honoris Causa from Linköping University, Linköping, Sweden (1998). He was a 150th Anniversary Jubilee Visiting Professor at Chalmers University of Technology, Gothenburg, Sweden (2006), and a visiting professor at Simon Fraser University, Burnaby, Canada (1994) and Swinburne University of Technology, Hawthorn, Australia (2008).

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Conference Calendar

- Jan 18 - 22, 2010 11th Joint MMM-INTERMAG Conference
Washington, DC, USA
Web site: www.magnetism.org
- Jan 28 - 29, 2010 Magnetics Conference 2010
Orlando, FL, USA
Web site: www.magneticsmagazine.com
- Mar 28 - Apr 1, 2010 4th Seeheim Conference on Magnetism
Frankfurt, Germany
Web site: www1.tu-darmstadt.de/magnetism/
- Apr 20 - 25, 2010 International Conference on Superconductivity and Magnetism ICSM2010
Antalya, Turkey
Web site: www.icsm2010.org
- May 25 - 29, 2010 8th International Conference on the Scientific and Clinical Applications of
Magnetic Carriers
Rostock, Germany
Web site: www.magneticmicrosphere.com/meetings/
- Jun 1-5, 2010 International Conference on Microwave Magnetics ICMM 2010
Boston, MA, USA
Web site: www.northeastern.edu/icmm2010/
- Jun 9 - 11, 2010 4th International Conference on Magnetism and Metallurgy WMM'10
Freiberg, Germany
Web site: www.ukmagsoc.co.uk
- Jun 28 - Jul 2, 2010 IV Euro-Asian Symposium "Trends in Magnetism": Nanospintronics
Ekaterinburg, Russia
Web site: conference.imp.uran.ru/en/eastmag2010/
- Jul 6 - Jul 10, 2010 13th International Conference on Megagauss Magnetic Field Generation
Shanghai, China
Web site: www.megagauss.org
- Jul 12 - Jul 16, 2010 International Symposium on Advanced Magnetic Materials & Applications
Sendai, Japan
Web site: www.ecei.tohoku.ac.jp/isamma2010/
- Aug 29 - Sep 2, 2010 21st Workshop on Rare-Earth Permanent Magnets and their Applications
Bled, Slovenia
Web site: nano.ijs.si/rep10.htm
- Sep 19 - 24, 2010 7th International Symposium on Metallic Multilayers MML2010
Berkeley, CA, USA
Web site: mml2010.lbl.gov

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

Isaak Mayegoyz Receives 2010 Achievement Award

By Bruce Gurney, Awards Committee Chair

Prof. Isaak Mayegoyz has received the 2010 IEEE Magnetics Society Achievement Award “for seminal contributions to the analysis of electromagnetic fields and nonlinear magnetization dynamics, hysteresis modeling, and service to the IEEE Magnetics Society”.

Prof. Mayergoyz is a world authority on Preisach modeling of hysteretic magnetic and superconducting materials, and is a recognized expert in the study of eddy currents and skin effects in ferromagnets. He has also made contributions in the application of magnetostatics, time-dependent magnetic fields, finite-element and boundary-element calculations, and computational micromagnetics to various fields of engineering. He has authored or coauthored twelve books; notable among them are *Mathematical Models of Hysteresis* (1990), *Spin-Stand Microscopy of Hard Disk Data*, (2007) and *Nonlinear Magnetization Dynamics in Nanosystems* (2009). He has published more than 350 scientific papers.

Prof. Mayergoyz received his Master and Ph.D. degrees in the former Soviet Union where he worked as a senior research scientist in the Institute of Cybernetics of Ukrainian Academy



of Sciences before his emigration to the United States. In 1980 he became a full professor of the Electrical and Computer Engineering Department of University of Maryland, College Park, where he helped establish and maintain the electric power engineering curriculum and educational program in the ECE Department. He has mentored more than 30 Ph.D. students and post doctoral fellows. He is a Distinguished Scholar-Teacher of University of Maryland, College Park (1994) and a recipient of Outstanding Teacher Award of College of Engineering (1987). He was a visiting research fellow of the Research and Development Center of General Electric Company, where he also served as a consultant. He was the editor of the Academic Press-Elsevier Electromagnetism series.

Prof. Mayergoyz has served the IEEE Magnetics Society in many capacities. He has been a Distinguished Lecturer, Chair of the Distinguished Lecturer Committee, Program Chair for several Conference on Magnetic Field Computation meetings, program committee participant for more than a dozen MMM and Intermag conferences, member of the Administrative Committee and editor of the IEEE Transactions on Magnetics. He is a Fellow of the IEEE.

New Chapters for the IEEE Magnetics Society

By Kaizhong Gao, Chapters Chair

In addition to the newly confirmed chapters (Hong Kong & Germany) at the beginning of 2009, we would like to announce the newly approved chapter from Nanjing, China before the end of 2009. The Nanjing chapter currently has over 50 members, and will represent the magnetic community in Southeast part of China, including people from universities in Jiangsu, Shanghai, Anhui and Zhejiang and many people from magnetic industry such as Seagate and SAE. The Chair will be Prof. Xiaoshan Wu, chapter organizer for Nanjing chapter as well as the host for the Society's Summer School in Oct 2009. Congratulations to the new chapter from China.

In addition, a Beijing chapter is currently in the approval process, and we expect to receive confirmation within the next month. We are also in the process of establishing the first chapter in India and Canada. If you are currently a Magnetics

Society member and would like to help, please contact me directly via kaizhong.gao@seagate.com

There are three simple requirements to form a new chapter:

1. A petition with 12 signatures of current Magnetics Society members that is higher than student grade from your section,
2. Approval of the section executive board then send it to IEEE for approval, and
3. Approval of the society president.

The Magnetics Society is ready to support the activities of its chapters around the globe. Please reference <http://www.ieeemagnetics.org/newpages/toplevelpages/chapters.htm> for information on chapter formation and obtain contact information for your own region, or email me at the address above.

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New Senior Members

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

September 2009: Lawrence Akre Jr, Horia Chiriac, Michael McHenry & Kumar Srinivasan

October 2009: Marina Díaz Michelena, James Rantschler & Yoskiaki Sonobe

November 2009: Nicola Bianchi, Valeria Hrabovcova, Enrique Melgoza

Senior Member is the highest grade for which IEEE members can apply. For further information, visit the IEEE Web site at:

www.ieee.org/web/membership/senior-members

Hong Kong Chapter News

By Zhiqiang Lei and Guijun Li, Hong Kong Chapter Volunteers

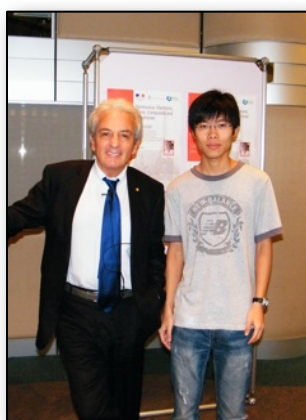
Learning Experience in Hong Kong

With great interests in magnetics, we had joined the IEEE Magnetic Society Hong Kong Chapter Student Branch this autumn. Both of us are now pursuing M.Phil degrees in the Department of Electrical and Electronic Engineering, the University of Hong Kong (HKU). Our research interest is mainly in magnetic tunnel junctions (MTJs), which is a promising candidate for producing portable, low-power and high sensitivity magnetic field sensors. As we are Magnetics Society volunteers, we would like to share our learning experiences in Hong Kong.



At the beginning of this semester, we had the chance to enroll into a cross-institutional graduate course offered by the City University of Hong Kong, which enabled us to study for the courses not only offered by HKU but also other universities in Hong Kong. All these courses were closely related to our

current research and helped us have a better understanding of magnetic materials and spintronics theory. In addition, many distinguished scholars were invited here to give lectures. For example, we attended the lecture on 21 October 2009 in the City University of Hong Kong delivered by Prof. Albert Fert,



2007 Nobel Laureate in Physics for his contribution to the discovery of giant magnetoresistance (GMR) effect. In his lecture, titled “Spintronics: Electrons, Spins, Computers and Telephones”, Professor Fert reviewed the development of spintronics in recent years and explained how it will impact our lives in the future. He pointed out a number of promising directions of spintronics (GMR effect, spin transfer phenomena, molecular spintronics, single electron spintronics, quantum spin hall effect, etc.) in details. Some feasible applications of spintronics in semiconductors, such as magnetic storage, telecommunication, radar and chip to chip communication were also introduced. The pictures are the snapshots of us with Prof. Albert Fert after his lecture.

France Chapter News

By Bernard Diény, France Chapter Chair

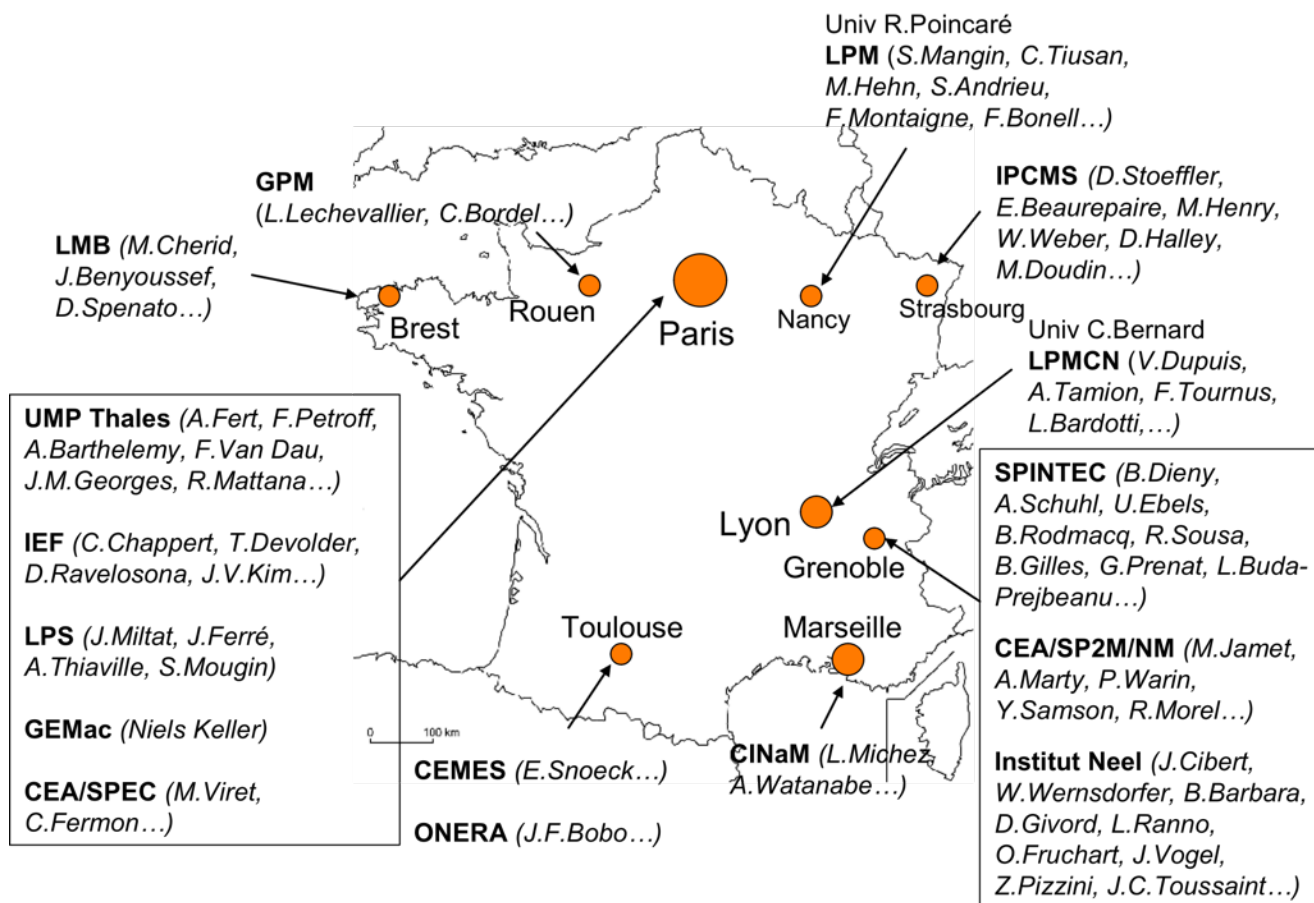
The French Chapter of the IEEE MagSoc was created in 2007. The French community of magnetism is rather strong particularly in the South area of Paris and in Grenoble. France has a long tradition in magnetism inherited from Prof. Louis Néel (Nobel Prize 1970). France is now particularly active in the field of spintronics. The Nobel Prize awarded to Prof. A. Fert and Prof. P. Grunberg has been a great honour for the whole French community. Both basic and applied aspects of spintronics are investigated in France. Start-ups such as Crocus Technology, In-Silicio and Spinroc have been launched in this field.

The map below represents the French community of magnetism, showing France and its main cities. The circle size is related to the number of inhabitants. The magnetism labs are listed with a few senior researchers of each lab.

In 2009, the France Chapter of the Society has welcome two Distinguished Lecturers - Prof. Kannan M. Krishnan who gave lectures in Nancy, Grenoble, Lyon and Paris, and Prof. Ohno who gave lectures in Grenoble and Paris. Prof. T. Rasing should also be visiting us in Spring 2010.

In addition, the France Chapter has filled an application to host Intermag 2014 in the lovely city of Lyon. The competitive selection of candidate sites is still in progress.

The Chapter is also taking part in the organisation of a large French Colloquium (Louis Néel Colloquium) which will take place in Alsace from March 31st to April 2nd 2010. This Colloquium is organized every one and half year and gathers the whole French magnetism community (typically 150 attendees). It will be sponsored by the Chapter.



Taiwan Chapter News

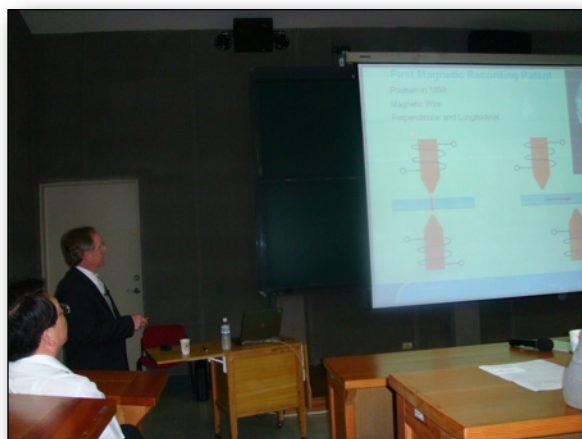
By Jen-Hwa Hsu, Taiwan Chapter Chair

In 2009 our Chapter was very pleased to have all four distinguished lecturers visit us and to deliver lectures here. We'd like to thank them for their contributions to help promote the images of the IEEE Magnetic Society in Taiwan.

Besides these visits, the Chapter was also honoured to have Dr. Stuart Parkin from IBM join our technical meeting on Nov 19 and to give a lecture on "Exotic phenomena in spintronics nanostructures: from giant spin dependent tunneling to unconventional ferromagnetism".

The annual meeting of Taiwan Chapter was held at National Sun Yi-Sen University, Kaohsiung, Taiwan on June 24, 2009. About 80 persons including researchers and students from various parts of Taiwan attended this meeting. Prof. Takao Suzuki, IEEE Magnetic Society President-Elect (2010-2011), also joined this meeting and gave the opening speech.

We would like to thank all Chapters members and volunteers for organizing and participating in this annual meeting. This was the first Chapter Annual Meeting held in Taiwan.



Call For Abstracts: MML2010 In Berkeley, California

By Peter Fischer, MML2010 Conference Chair

The IEEE 7th International Symposium on Metallic Multilayers (MML2010) will be held from Sep 19-24, 2010 at the Doubletree Hotel & Executive Meeting Center in Berkeley CA, USA.

The MML2010 follows the series of previous symposia that were held in Kyoto (1992), Cambridge (1995), Vancouver (1998), Aachen (2001), Boulder (2004) and Perth (2007).

The conference topics cover a wide range of aspects of fundamental magnetic material properties relevant to both a fundamental understanding as well as technological applications of such low dimensional systems.

Scientific topics include:

- spin injection, spin torque effects and spin dependent tunneling
- spin excitations and ultrafast spin dynamics
- magnetic nanostructures, magnetic recording and patterned media

- complex heterostructures and multiferroic materials
- nano-biomagnetism and other novel applications.

The structure of the symposium will be a single session style. It will consist primarily of invited talks given by world leading experts from research institutes, universities and industry. The presentations include topical overview and plenary talks. There will be extensive poster sessions, where attendants and particularly early career scientists and students are encouraged to present their work related to the fields covered by the MML2010.

Abstract submissions for the MML2010 is now open until February, 28, 2010. More information can be found at



<http://mml2010.ibl.gov>

For questions or comments regarding the MML2010 please contact Peter Fischer via peter.fischer@ieee.org.

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. Manuscripts are solicited from Magnetics Society members, conference organizers, Society Officers & other volunteers, local chapters, and other individuals with relevant material.

The Newsletter is published in January, April, July and October electronically on the Magnetics Society webpage at www.ieeemagnetics.org. Submission deadlines are January 1, April 1, July 1, and October 1 respectively.

Please send articles, letters & other contributions to the Newsletter Editor:

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