IEEE Magnetics Society
NEWSLETTER

Gareth Hatch, Editor

Volume 51 • Issue 4 • October 2011

From The President

By Takao Suzuki, President of the Magnetics Society

Greetings and I hope that this edition of the newsletter finds you all well.

I am writing this article in Japan while on a business trip. Seeing the people here still struggling to recover from the damage caused by the earthquakes, tsunami and radiation contamination from the damaged nuclear power plants in March this year, I can only pray that things will get better in the very near future for the people and communities.

Although we all have been saddened by the natural disasters which have taken place around the world, as well as the sudden death of our great colleague, the former chair of the Conference Executive Committee, Dr. Doug Lavers, I am happy to announce some good news.

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INSIDE THIS ISSUE...

22nd Magnetic Recording Conference Report

By Kaizhong Gao, Chairman - TMRC 2011

The Minneapolis campus of the University of Minnesota was the site of the 22nd Magnetic Recording Conference (TMRC 2011) held Aug 29-31, 2011. The central theme of this year's conference was the magnetic recording heads and systems technologies, including energy assisted magnetic recording technologies. The program co-chairmen were Prof. Hiroaki Muraoka, Dr. Hitoshi Iwasaki and Dr. Jinshan Li who helped put together an excellent program with 36 invited papers which consist of six sessions: 1) recording systems and recording physics, 2) write head, 3) read head, 4) shingled magnetic recording and energy-assisted recording I (MAMR), 5) energy assisted recording II (HAMR), 6) HDI and Channels.

In each invited talk, the speakers were given 25 minutes for their presentations and 5 minutes follow-up questions. Poster sessions were organized by Dr. Xiaobin Wang and were held following the afternoon sessions on Monday and Tuesday. All of the invited talks were also presented as posters.

Contributors represented academia as well as a wide range of international companies. Through the efforts of Publicity Chair Dr. Jason Goldberg, the conference had 190 participants representing industry and Universities from U.S., Japan, Europe and other Asia countries such as Malaysia and Singapore. This year we have managed to have largest attendees over the past 4

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In Memory Of Professor J. Doug Lavers

By Takao Suzuki, President of the Magnetics Society

Professor J. Doug Lavers passed away on July 11, 2011. He died after the canoe he was. in capsized in a remote Yukon River in Canada. Doug was the chair of the Magnetics Society's Conference Executive Committee (CEC). At the time of his death, he was deeply involved in making arrangements for the Intermag 2015 and for the Joint MMM/Intermag 2016, as well as other major conferences such as ICM.

I was stunned when I learned of this tragedy. As many of us know, Doug ceaselessly devoted his time not only for conferences, but he also was very active in mentoring and advising us through his rich experience. He enjoyed talking and discussing ways to improve our conferences as the CEC chair and was always focused on making decisions that were the best for all. The recent very successful Intermag held in Taipei is a good example, among many other successes, which demonstrates his dedication and drive for success. This conference was the first held in Taiwan; and thus, it was not easy for the local committee members by all measures to plan at first. Nevertheless, Doug was the person who made a site visit to Taipei at an early stage of preparation, and he kept close contact with the local committee members.

Professor Lavers received the PhD degree from the University of Toronto in 1970. Since 1974, he was Professor at Department of Electrical and Computer Engineering, University of Toronto. His primary research interests focused on applications involving magnetic fields at frequencies ranging from DC to several hundred MHz, including design and development of high efficiency, high power density magnetic components for telecommunications and computer power supplies; advanced systems to control molten metal fluid velocities in high throughput continuous casting systems; magnet design for MRI systems.

On a personal note, Doug and I knew one another for more than 20 years. He was a very friendly person who always cared for others, and he loved to explore new things. I recall a few years ago during a 5-year review meeting in Colorado when Doug and his wife, Barb, had explored the Grand Canyon just before the start of the review meeting. Doug explained to me so many wonderful things about their new findings and discoveries in the Grand Canyon. That conversation is such a nice memory that still remains so clear for me.

There is no doubt that it is very difficult to find someone like Doug, someone who is capable of handling the difficult job of Chair of the CEC. However, within the Magnetics Society, Doug invested much of his time and energy mentoring and cultivating our young generation. Fortunately the AdCom recently elected Dr. Massimo Pasquale as the CEC chair and I am confident that Massimo will do a great job for our Society.

We are all missing Doug. Thank you all for coming together with me in spirit to share this sad moment. With my deepest sympathy,

Takao Suzuki - President of the Magnetics Society

New Senior Members

Senior Member is the highest grade for which IEEE members can apply. The following members of the IEEE Magnetics Society were recently elevated to the grade of Senior Member.

Aug 2011: Pervez Aziz, Oksana Chubykalo-Fesenko, O-Mun Kwon, Laura Lewis, Sara Majetich, Christopher Marrows, Laurentio Stoleriu and Bruce Terris.

Sep 2011: Kristen Buchanan, Sandra Costanzo, Min-Fu Hsieh and Kannan Krishnan

For further information, visit the IEEE Web site at:

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

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First, Dr. Massimo Pasquale, former chair of the Publications committee, is the new chair of the Conference Executive Committee, and Dr. Ron Goldfarb has become the new chair of the Publications Committee. Massimo has rich experience in our Society's activities, including organizing major conferences such as the INTERMAG conference in Sacramento in 2009. Massimo has already started working hard on site selection for the 2015 Intermag, which will take place in the Asia/Pacific region, and for the 2018 ICM in North America. Ron was the chair of the Publications Committee for many years before Massimo took this office; thus Ron has much knowledge not only on publications, but also about the entire Society's activities. I have great faith in both chairs who will handle difficult tasks and will work to enhance our Society's activities.

Secondly, TMRC2011 in Minneapolis was very successful with some 200 in attendance, a very large number. Special thanks are due to the conference chair, Kaizhong Gao (Seagate), and to all of the local committee members who were led by the local chairs Randy Victora (Univ. Minnesota), Jian-Ping Wang (Univ. Minnesota), and treasurer Mark Kief (Seagate). The next TMRC2012 will be chaired by Jimmy Zhu (CMU), and the location will be announced shortly.

Thirdly, I have learned that the Perpendicular Magnetic Recording Conference has evolved into the new Iwasaki Conference. Its first meeting will be in Sendai, Japan in November 2011. This conference is financially supported by a donation from Professor Shunichi Iwasaki and is intended to train students, junior researchers and engineers working on magnetism and magnetic materials. The spirit is very similar to what our summer school has as its vision, and I hope that our Magnetics Society will join in collaborating with the Iwasaki Conference in the near future.

Regarding the subject of our summer school in New Orleans this year, I have heard wonderful things from some of the students, including those from the University of Alabama who attended, about their nice experiences at this school. The program was nicely organized, and the lectures were all very well done. I am very thankful to the Educational Committee led by the chair, Albrecht Jander, and also to the local organizers from the Department of Physics & Advanced Materials Research Institute, University of New Orleans.

You may be interested to know about the status of the entire IEEE organization. The IEEE now has a total membership of more than 400,000 people from 160 countries. It is the largest technical professional society in the world. The IEEE has 38 Technical Societies and 7 Councils, with more than 1,000 technical conferences annually. The total annual budget is about $392M. Major portions are from conferences (35%), periodicals (34%), and membership revenue for this entire annual budget is about $67M (17%) (Reported at the 2011 Section Congress held in San Francisco, August, 2011).

I may add here that revenue and membership are increasing, but these are due mainly to the increase in IEEE Xplore revenue and also in non-USA memberships (the Sections Congress 2011 was the largest Congress attended to date. A total of 1,133 attended from 92 countries with representatives from 294 Sections and 41 Technical Societies/Councils.).

As we will have the AdCom meeting during the MMM conference in Scottsdale, AZ, I will report the outcome of this meeting in the next Newsletter. I look forward to receiving your feedback and send my best regards.

Takao Suzuki can be reached via: ***takaosuzuki@mint.ua.edu***

2011 IEEE Sections Congress in San Francisco

By Peter Fischer, Oakland - East Bay Chapter and
Dan Lottis & Kumar Srinivasan, Santa Clara Valley / San Francisco Chapter

The 2011 IEEE Sections Congress chaired by Tom Coughlin, who is one of the "veteran" member of the Magnetics Society with 33 years of service, was held from August 22-21, 2011 at the San Francisco Marriott Marquis in San Francisco CA. The theme of the SC2011 was "Empowering Members to Create the Future". During the closing ceremony on August 22, the primary section delegates voted on the following recommendations:

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TMRC 2011 Report *continued from page 1*

years. The treasurer position was held by Mark Kief, who helped to plan for food and banquet arrangement.

Prof. Jian-Ping Wang and Randall Victora from Electrical and Computer Engineering, University of Minnesota, were the local chairmen responsible for logistic arrangements and for ensuring that the conference ran smoothly. A student, Yinglong Feng, helped to put conference website together. Publications co-chairmen were Dr. Samuel Yuan and Dr. Mike Suk who did an excellent job of securing abstracts of the invited talks, corresponding with two referees for each submitted paper, and organizing the accepted papers for publication in IEEE Transactions on Magnetics. More than two thirds of the invited papers will be published in the March 2012 issue of the Transactions..

The conference banquet was held Tuesday evening, Aug. 30, at the McNamara Alumni Center, located on the campus of the University of Minnesota. The keynote address was presented by: Jeff LaCroix, Vice President of Recording Head Operation, Seagate Technology. The title of his talk was "The Glorious Past and the Fabulous Future of Disk Drives".

2011 IEEE Sections Congress *continued from page 3*

1. IEEE to develop a comprehensive long-term strategy to increase the number of next generation youth pursuing science and engineering careers.
2. As members maintain their IEEE membership over their years, IEEE must reward them for their loyalty. Rewards ought to be tangible and useful and can be done simply and inexpensively. Create Global Fidelity Programs including: (a) Continue membership Recognition 5-10-15-20 years of membership (b) Bonus for specific Benefits (e.g., reduced fee, IEEE merchandise, etc).
3. IEEE membership (including e-Membership) should include a Society membership as part of the basic membership fee.
4. Increased support to students in technical activities with grants to attend conferences and organization of technical competitions.
5. To encourage interest in pre-university students in engineering careers, IEEE to publish a subscription periodical (paper or electronic) targeted to high school students that highlights engineering activities of interest to those students. The periodical should also have articles promoting the benefits of an engineering career and what the students can do in college to get involved with IEEE.

As part of the SC2011 a special event was held at the Computer History Museum in Mountain View CA. Representatives of the Santa Clara Valley and the Oakland East Bay chapters of the Magnetics Society took the opportunity to showcase the activities of the Magnetics Society to a large international IEEE audience. A booth was setup with lots of display materials and a poster summarized the current activities and organizational structure of the Magnetics Society.

Many stimulating discussion demonstrated the enormous interest in the topics which the Magnetics Society is actively pursuing. Al Hoagland (Santa Clara University), one of the pioneers of magnetic disk recording, shared with us interesting historical anecdotes from the early days of magnetic storage technology.

A special thank you to Diane Melton (Widerkehr Associates) and Janis Benett (AIP) for providing display materials, Dan Lottis, Kumar Srinivasan (SCV/SF chapter) and Peter Fischer and his son Johannes (O-EB chapter) for taking their time and manning the booth.

From l-to-r: Johannes Fischer, Peter Fischer (O-EB Chapter) & Dan Lottis (SCV/CF Chapter) at the Magnetics Society booth during the special event at the CHM (picture courtesy by Brian Berg).

INTERMAG 2012: First Call For Papers

By Jan-Ulrich Thiele, General Chair - INTERMAG 2012

It is my honor to invite you to the International Magnetics Conference, INTERMAG 2012, which will be held in Vancouver from May 7th to May 11th, 2012.

INTERMAG is the premier conference on all aspects of applied magnetism, and all members of the international scientific communities interested in new developments in magnetism and associated technologies are invited to attend and submit their latest findings to INTERMAG 2012. The conference will provide a range of oral and poster presentations, invited talks and symposia, a tutorial session, and exhibits reviewing the latest developments in magnetism. Selected papers from the conference will be published in the IEEE Transactions on Magnetics.

We would like to cordially invite you to attend the conference, actively participate in its technical sessions, and contribute to the continued success of this conference series. Up-to date information on all aspects of the conference can be found on the conference webpage at http://intermagconference.com/2012/.

Vancouver, the site of this year's conference, is well known for its majestic natural beauty, as it is nestled between the Coast Mountains and the Pacific Ocean. It is frequently ranked as one of the "best cities to live in" and is certainly a beautiful destination to visit. The Convention Center is located right in Downtown Vancouver, and the four hotels in which blocks of sleeping rooms at special INTERMAG rates are available are located within a short walking distance from the Convention Center. The Downtown area holds many of the city's attractions and is home to beautiful architecture, fine dining and world class shopping. For the many things to see and to do in and around Vancouver, please visit the official webpage of the tourism office, www.tourismvancouver.com.

On behalf of the Management Committee of INTERMAG 2012, I look forward to seeing you in Vancouver and to an exciting and enjoyable conference.

20th Soft Magnetic Materials Conference SMM20

By Vangelis Hristoforou, General Chair - SMM20

The 20th Soft Magnetic Materials Conference (SMM20) took place in the Kos International Convention Center (KICC), Kos Island, Greece from Sep 18 - 22, 2011.

In the midst of the fiercest crisis in postwar years -- in Greece, Europe and the whole world -- it would be pointless for a conference of the size and importance of SMM20 to emphasize only the classical advances in soft magnetic materials while ignoring the signs of the times. Science and technology have shown the way out of critical deadlocks time and again in history and must do so again. Soft magnetic materials science and technology must contribute to this effort, to the extent possible. It is in this spirit that the organizers of the SMM20 aspired to focus on three critical and global problems:

Energy: Electromotion and electrical energy production, based on renewable forms of energy, are of critical importance for all developed and developing countries. Soft magnetic materials, like electric steels and amorphous ribbons/wires/films, promise improved operation of electric machines, such as wind generators and motors for electric vehicles, and improved transformer performance. The combination of soft nano-magnets, with non-rare earth-based, large-anisotropy materials may offer a low -ost, reliable alternative to existing materials, revolutionizing the technology of electric machines.

Environment: Magnetic characterization techniques, as suggested by the results of many magnetic laboratories, can be used to deduce internal stresses in soft magnetic materials such as low carbon and other types of magnetically soft steels. These techniques offer tools for the predicting the useful life of steel components. Thus, the monitoring of critical steel structures such as pipelines, railways, sea-going vessels, automobiles and power stations is possible. Additionally, industrial waste, treated via appropriate techniques, may yield valuable soft magnetic materials.

Health: Soft super-paramagnetic nanoparticles and other soft magnetic materials are currently successfully being used in targeted drug delivery, e.g. in cancer treatments such as

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Conference Calendar

Oct 30 - Nov 3, 2011	56th Conference on Magnetism & Magnetic Materials MMM 2011 Scottsdale, AZ, USA Web site: www.magnetism.org
May 7-11, 2012	International Magnetics Conference INTERMAG 2012 Vancouver, BC, Canada Web site: www.intermagconference.com/2012/
May 22-26, 2012	9th International Conference on the Scientific and Clinical Applications of Magnetic Carriers Minneapolis, MN, USA Web site: www.magneticmicrosphere.com
Sep 9-14, 2012	Joint European Magnetic Symposia 2012 Parma, Italy Web site: www.jems2012.it
Sep 10-12, 2012	22nd Workshop on Rare-Earth Permanent Magnets And Their Applications Nagasaki, Japan Web site: intrax.jp/REPM2012/
Nov 14-19, 2012	International Conference on Megagauss Magnetic Field Generation Maui, HI, USA Web site: www.megagauss.org
Nov 3-8, 2013	57th Conference on Magnetism & Magnetic Materials MMM 2011 Denver, CO, USA Web site: www.magnetism.org

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

Book Review: *Rising Force* By Jim Livingston

By Stan Trout

Like his earlier book, 'Driving Force: The Natural Magic of Magnets', Jim Livingston takes us on a fast-paced ride through the land of magnetic levitation. It is a magnetically levitated ride of course! He discusses maglev from a number of interesting perspectives, from Earnshaw's theorem on stable levitation from the 19th Century, to the toys we played with as children, to some playful ways that magnetic levitation has been applied, like levitating frogs and Sumo wrestlers, to the use of magnetism to levitate and propel trains in the 20th and 21st Centuries. The latter being a mildly depressing point, considering the initial excitement about maglev trains, the money spent so far, the lack of progress and the large amount of money remaining to be spent to bring some of these projects to fruition. In an era of government frugality, this doesn't seem the time for maglev trains to flourish. Jim successfully manages to pull this all off with the limited use of mathematics, to reach a larger audience.

Knowing the author for many years, it was very easy for me to imagine Jim reading this book to me. His lively and excitable conversational style came through loud and clear. I never thought that I would read a book that would connect Dave Barry, Mahmoud Ahmadinejad and Carl Gauss, but Jim has done just that in a fun way. Will there be a third book in the series? I don't know for sure, but Twisting Force: The Magic of Magnetic Motors seems like a very reasonable title. If Jim writes it, I look forward to reading it.

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hyperthermia and selected chemical cell activity. Furthermore, new measuring techniques involving the spatial determination of magnetic particles in the human body, may offer new ways to diagnose and to treat various diseases, by means of using soft magnetic materials as measuring probes.

The SMM20 program was designed to serve the above aspirations. The first day of the conference was devoted to energy and the environment, the second to sensors and bio-magnetics, and finally the third and fourth to novel materials and electric steels respectively. The agenda of the round table on the third day was also designed around these three topics.

From the 355 registered participants, 210 were full participants, 102 students and 43 attendees, while 291 papers have been submitted to the IEEE Transactions MAGCON portal.

On the lighter side, the cultural programme of the conference featured a concert of popular Greek songs on the first day. The conference banquet took place on the second day, following a tour of the Island of Hippocrates, as the island of Kos is known. The banquet ended with traditional Greek dances by professional dancers and conference participants.

SMM20 organizers are grateful to the National Technical University of Athens (NTUA), the Technical Chamber of Greece (TEE) who, in spite of the severe financial crisis in our country, have unwaveringly and substantially supported SMM20; the Institute of Electronic and Electrical Engineers (IEEE) and the IEEE Magnetics Society; and the Thyssen-Group and the Multirama group for their financial and technical support. SMM20 organizers are also grateful to all members of the international steering committee of SMM, for helpful suggestions and advice.

Problems With Annual Membership Payments

By Peter Fischer, Membership Committee Chair

It has come to our attention that some of our members experienced technical difficulties in renewing their membership online. We ask all of our members to report such incidences immediately to the Membership Committee (peter.fischer@ieee.org) to investigate and fix the root cause of such problems.

We not only want to make sure that your renewal process goes as smooth as possible, moreover, we need your continued membership in the Magnetics Societies in the years to come.

Let's stay connected!

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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