## **IEEE MAGNETICS SOCIETY** IEEE NEWSLETTER

**GARETH HATCH, EDITOR** 

VOLUME 55 • ISSUE 1 • JANUARY 2015

#### From the President

By Bruce Terris, President of the Magnetics Society

I am much honored to be writing to you as the incoming IEEE Magnetics Society President. I take over a very healthy Society, thanks to our outgoing President Liesl Folks as well as to her predecessors. I owe sincere thanks to Liesl for her leadership over the past two years, and I hope I can pass the Society along in two years in as good a shape as I have received it.



I wish to also thank the outgoing AdCom members, Te-ho Wu, Russell Cowburn, Atsufumi Hirohata, Albrecht Jander, David Jiles, Kai Liu, Aria Yang and Leonard Spinu, as well as the outgoing Committee Chairs who have who served for the past two or more years: Massimo Pasquale (CEC), Mingzhong Wu

## INSIDE THIS ISSUE...

From the President	1
Nominations Committee Report	1
New Senior Members	2
2015 Achievement Award	3
Magnetics Society New 2015 IEEE Fellows	4
Musical Magnets	4
Hong Kong Chapter - A Year In Review	5
Conference Calendar	6
About the Newsletter	6

continued on page 2

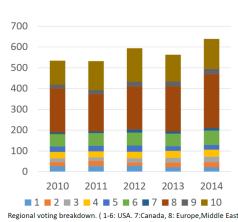
# **Nominations Committee Report**

#### By Takao Suzuki, Nominations Committee Chair

The general election of the 2015-16 AdCom members was made held from August 15 to October 15, 2014. 2,982 ballot

cards were mailed, with 639 ballots returned (21.4%), an increase of 2.4% over the previous year. Of the ballots returned, 621 were submitted via the Web, and 18 paper ballots were returned. Statistics for recent years are shown in the figure.

The newly elected members with a term of 2015-16 are Franca Albertini, Bernard Dieny, Dafiné Ravelosona, Rudolf Schäfer, Alexandru Stancu, Thomas Thomson, Jian-Ping Wang and Roger Wood.



and Africa, 9: Latin America, 10:Asaia/Pacific)

The election of the Secretary/Treasurer for the term 2015 -2016 was conducted by the voting AdCom members during

> October 11-25, 2015. There were two well-qualified candidates.

As a result, Pallavi Dhagat was elected with the majority vote. Congratulations!

I would like to thank all the members of the Nominations Committee - Bernard Dieny, Ron Goldfarb, Laura Lewis, Dmitri Litvinov, Hiroaki Muraoka, Jan-Ulrich Thiele and Mi-Ching Tsai - for their hard work and support throughout my chair time. Their efforts are well recognized.

#### From The President continued from page 1

(Education), Erol Girt (Publicity), Kaizhong Gao (Finance) and Takao Suzuki (Nominations). Under the guidance of Liesl and her leadership team, the Society has grown the reserve fund to over \$4.9M, supported Summer Schools in Europe and South America, sent four Distinguished Lecturers each year to more countries than ever before, continued the tradition of supporting student travel and best papers at conferences, and supported activities such as networking receptions, lounges, and women's networking events at INTERMAG and MMM conferences.

In addition, we have increased our support of smaller, new conferences, strengthened our sister society agreements, and continue to look to broaden and strengthen our membership base. This a vibrant professional society of which the members can all be proud, and the outgoing management team deserves a big round of applause.

We ended 2014 with MMM in Hawaii, which from all reports was a resounding success. Due to unforeseeable events, I unfortunately needed to cancel my plans to attend at the last minute, but I understand from everyone that the venue was spectacular, as was the technical program. Thank you to the Conference Chair Chris Leighton and the whole MMM 2014 management team for all their hard work and a great success.

I now enter 2015 with big shoes to fill. Along with my assuming the office of President, Manuel Vasquez will advance from Secretary-Treasurer to President-Elect, and I congratulate Pallavi Dhagat on election to Secretary/Treasurer. We also welcome the six newly elected AdCom members: Franca Albertini, Bernard Dieny, Dafine Ravelosona, Rudolf Schäfer, Alexandru Stancu, Thomas Thomson, Jian-Ping Wang and Roger Wood along with the 12 continuing members. In addition, Kai Liu was elected to fill Pallavi Dhagat's vacant seat as a result of her election to Secretary/Treasurer.

I would like to introduce the new Committee Chairs, who have been approved by the AdCom and to thank them for accepting the challenge of serving the Society. I am confident that the Society will be in good hands under their leadership along with the guidance from AdCom. The Committee Chairs are:

Conference Executive Committee – Randy Victora Technical Committee - S.N. (Prem) Piramanayagam Honors and Awards Committee - Burkard Hillebrands Distinguished Lecturer Committee - Sara Majetich Education Committee – Chih-Huang Lai Membership Committee - Laura Heyderman Publicity Committee – Philip Pong Finance Committee - Mingzhong Wu Chapters Committee - June Lau Nominations Committee – Liesl Folks Publications Committee - Ron Goldfarb Planning Committee – Manuel Vázquez

Finally, I encourage all members to become active members in the Society. Magnetism continues to be a vibrant research field with many new and exciting fundamental discoveries as well as potential new applications. As a result, the balance of areas of interest within the Society continually evolve, presenting both challenges and opportunities for the Society membership and for our conferences. In the coming years, it is likely this trend will continue, and I encourage all in the magnetism community to help identify the growth areas in magnetism. Please consider volunteering for activities of interest to you, and continue to bring forward all your suggestion and ideas for the Society.

Bruce Terris can be reached via: **bruce.terris@ieee.org**.

#### **New Senior Members**

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

October 2014: Ebrahim Shahrodi and Yan Zhou.

November 2014: Predrag Hadzibabic and Deliang Liang.

For further information, visit the IEEE Web site at:

www.ieee.org/membership\_services/ membership/grade\_elevation.html

# Takao Suzuki Receives 2015 Achievement Award

Submitted by Isaak Mayergoyz, Achievement Award Subcommittee Chair

Each year the IEEE Magnetics Society honours one of its outstanding members for his or her lifetime professional achievement. This is the highest award of the Society and is given for scientific achievements, technical achievements and service to the Society. The award is presented at the INTERMAG conference each year, and consists of a diploma with citation and a cash prize.

Prof. Takao Suzuki receives the 2015 Achievement Award for "contributions to the micromagnetics of materials with high

magnetocrystalline anisotropy and their applications in magnetic recording media."

Prof. Suzuki received his BS and MS degrees in applied physics from Waseda University, Japan in 1962 and 1964 respectively, and a PhD in electrical engineering from the California Institute of Technology in 1969. He worked as a postdoctoral fellow at the Max Planck Institute in Stuttgart, Germany from 1969 through 1972, and then served as an assistant professor and associate professor at Tohoku University in Sendai, Japan from 1972 through 1988.

From 1988 through 1995, he worked as a research staff member at the IBM Almaden Research Center in San Jose, California. In 1995, Prof. Suzuki joined Toyota Technological Institute in Nagoya, Japan where he was Vice President and a principal professor until 2010. Prof. Suzuki currently holds the position of Endowed Chair, Director for Center for Materials for Information Technology (MINT Center), and Professor of the Electrical and Computer Engineering, and Metallurgical and Materials Engineering at the University of Alabama in Tuscaloosa, Alabama, USA. He also is the Director for the International Consortium for "rare-earth free permanent magnets sustainable for the next generation" sponsored by the G8 national councils.

In his early career (the 1960s through the 1980s), Prof. Suzuki worked on magnetization distributions including domain walls, ripple structures and vortex in thin films mainly by Lorentz electron microscopy. From the 1970s through the 1990s, he



worked on rare-earth-transition metal amorphous thin films for magneto-optical recording media applications. From the 1980s through the present, he has been working on high magnetic anisotropy materials of various types. Prof. Suzuki was the first to experimentally show the strong correlation of the magnetic anisotropy of the ordered phase  $L1_o$  (Fe-Co-Ni)Pt alloy thin films with the number of valence electrons. In the early 2000s, he and his group for the first time experimentally realized the Fe<sub>3</sub>Pt alloy thin films that exhibit a very high magnetic anisotropy of the order of  $10^7 \text{ erg/cc}$  at room temperature. He

> was one of the IEEE Magnetics Society Distinguished Lecturers in 2007 on the topic of "High Magnetic Anisotropy Materials." Most recently, he has been working on rare-earth free high magnetic anisotropy materials.

> Prof. Suzuki has received awards including the Society Award of the Magnetics Society of Japan (2010), IEEE Magnetics Society Distinguished Lecturer (2007), and the Technical Achievement Award of the Magnetics Society of Japan (1999).

> Prof. Suzuki was President of the IEEE Magnetics Society during 2011-2012,

and he is an IEEE Fellow. He is Professor Emeritus of Toyota Technological Institute and has published more than 300 scientific papers in peer-reviewed journals, four books, and holds 17 patents issued in the USA, Japan, and other countries.

Prof. Suzuki joins a distinguished list of past recipients: Fred Luborsky 1981, Herb Storm 1982, Harold Lord 1984, Joe Suozzi 1985, Fritz Friedlaender 1986, Andrew Bobeck 1987, Floyd Humphrey 1988, Paul Biringer 1989, Daniel Gordon 1990, Emerson Pugh 1991, Yoshifumi Sakurai 1992, William Doyle 1993, Richard Barker 1994, Mark Kryder 1995, Koosuke Harada 1996, Gordon Slemon 1997, Stan Charap 1998, Dave Thompson 1999, Denis Mee 2000, Fred Hagedorn 2001, Sun-ichi Iwasaki 2002, Carl Patton 2003, Yutaka Sugita 2004, Robert Fontana 2005, Neal Bertram 2006, John C. Mallinson 2007, Jack H. Judy 2008, Roger Wood 2009, Isaak Mayergoyz 2010, Jian-Gang (Jimmy) Zhu 2011, John Slonczewski 2012, Michael Mallary 2013 and Randy Victora 2014.

# Magnetics Society New IEEE Fellows 2015

Submitted by Diane Melton, Executive Director, IEEE Magnetics Society



Charaniit





Mircea Popescu

Ming Cheng

Singh Bhatia

Six members of the IEEE Magnetics Society were recently elected as 2015 IEEE Fellows:

- Charanjit Singh Bhatia, "for contributions to magnetic head-media interfaces and tribology;"
- Ming Cheng. "for contributions to the development and control of stator permanent magnet machines for vehicular propulsion and wind power generation;"







Yoshihiro Shiroishi Jian-Ping Wang

**Dieter Weller** 

- Mircea Popescu, "for contributions to AC induction and permanent magnet electric machines;"
- Yoshihiro Shiroishi, "for leadership in the development of high density magnetic recording technologies and devices;"
- Jian-Ping Wang, "for contributions to magnetic material and spintronic devices for magnetic recording, information processing and biomedical applications;" and
- Dieter Weller, "for contributions to heat-assisted magnetic recording media."

## **Musical Magnetics**

By Jennifer Fiske, Deputy Executive Director, IEEE Magnetics Society



The Bierstube - we all know the meaning of that word! A gathering at the end of the conference day when scientists, colleagues and friends gather for beer and fellowship.

At the MMM 2014 Conference, held this past November in Honolulu, Hawaii, the Bierstubes were held in a hotel space that had a grand piano.

Having worked with the MMM group for many years, I know physicists love music, but imagine my surprise when, one afternoon, I heard someone playing Gershwin, then swing, then jazz!

Miroslav Marysko, of the Institute of Physics of the ASCR in Prague, was at the keyboard. A crowd had gathered, enjoying the music with their refreshments. Dr. Marysko told us music is his hobby, and he played for several afternoons. He also presented two papers at MMM.

It was a delightful addition to an old tradition!

#### Hong Kong Chapter - A Year In Review

#### Philip Pong, Hong Kong Chapter Chair

In 2014, the Hong Kong Chapter organized three Distinguished lectures and one technical seminar. Prof. Tim St. Pierre visited Hong Kong on April 11 and gave his distinguished lecture at both the University of Hong Kong and the City University of Hong Kong. Prof. Hans-Benjamin Braun presented his lecture at the University of Hong Kong on June 27 and Prof. Qiliang Li, from George Mason University, visited us on June 30. He talked on his research on novel flash memory, two-dimensional semiconductors and topological insulators.

Our flagship event, the IEEE Magnetics Society Symposium on Magnetism and Magnetic Technologies, was organized again this year. This Symposium featured two keynote speeches from Prof. Takao Suzuki from the University of Alabama and Prof. Ko-Wei Lin from the National Chung Hsing University. Prof. Suzuki talked on rare-earth-free, high-magnetic-anisotropy materials and Prof. Lin gave his talk on the modification of magnetic properties of thin films by ion-beam bombardment. There were three invited talks by Dr. Frank Klose (Australian Nuclear Science and Technology Organisation), Dr. Antonio Ruotolo (The City University of Hong Kong), and Dr. Yan Zhou (The University of Hong Kong). In addition, students and postdocs contributed nine talks in total. Dr. Li Li (The University of Hong Kong) was presented with Best Research Award for her work on biomedical sensing platform with spintronic sensors and magnetic nanoparticles. Qi Shao (The City University of Hong Kong) was presented with Best Presentation Award for her talk on surface-enhanced Raman scattering (SERS) based on non-polar Mn-substituted ZnO/Au substrates.

The Chapter Web site was updated with informative tourist materials for colleague visiting the Hong Kong Chapter. We suggested 10 places you must visit in Hong Kong. Please have a look at our website **http://www.eee.hku.hk/ieee/magsoc**, and you may find Hong Kong your next destination.

In 2015, Dr. Dennis Leung (Hong Kong Polytechnic University) and Dr. Antonio Ruotolo (The City University of Hong Kong) will be the Chairman and Vice-Chairman of the Hong Kong Chapter.



IEEE MAGNETICS SOCIETY NEWSLETTER • VOL 55 • ISSUE 1 • JAN 2015 • PAGE 5

Conference Calendar	
May 11-15, 2015	INTERMAG Beijing, China www.intermagconference.com
June 1-4, 2015	9th International Conference on Power Electronics ECCE Asia (ICPE 2015) Seoul, Korea www.icpe2015.org
June 5-6, 2015	PELS Workshop on Emerging Technologies: Wireless Power (2015 WOW) Seoul, Korea
June 23-25, 2015	Frontiers in Biomagnetic Particles IV Telluride, Colorado, USA http://magneticnanoparticle.com
July 5-10, 2015	20th International Conference on Magnetism (ICM2015) Barcelona, Spain http://www.icm2015.org
July 12-17, 2015	22nd International Colloquium on Magnetic Films and Surfaces Krakow, Poland http://icmfs2015.agh.edu.pl/
September 6-10, 2015	European Conference on Molecular Magnetism (ECMM 2015) Zaragoza, Spain http://ecmm2015.unizar.es
January 11-15, 2016	Joint MMM-INTERMAG Conference San Diego, California, USA www.magnetism.org
To list your confere	nce in the Newsletter Conference Calendar, please contact the Editor

#### About the Newsletter

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

Gareth Hatch Technology Metals Research, LLC 180 S. Western Ave #150 Carpentersville, IL 60110 USA

Email: g.p.hatch@ieee.org

IEEE information contained in this newsletter may be copied without permission provided that copies for commercial advantage are not made or distributed, and the title of the publication and its date appear on each copy.