

GMAG NEWSLETTER

N^o 1, February 1997

Edited by R B van Dover

Formation of the Topical Group on Magnetism and its Applications

It is a great pleasure and somewhat of a relief to be writing this article for the first issue of our Topical Group Newsletter. As you will shortly see I was not sure that I would eventually get to write this story!

As many of you know APS Council approved the formation of the new topical group on Magnetism and its Applications at the May meeting in Indianapolis. However it was by no means obvious how the vote would go. After two years of careful work since the Pittsburgh March Meeting, putting our case together with three hundred APS member signatures to the petition and a large number of non-APS signatures too, there was the real prospect of all the efforts of those involved coming to nothing.

It was very interesting to be at the meeting and have an opportunity to discuss with the Council what we believed to be an excellent case for forming the group. This was based on our need to provide more focus for our branch of physics within the Society, and the need to attract new members from outside the Society, including former APS members active in magnetism. For this reason we tested the support among non members of APS by collecting their signatures too. One of our objectives is to reach out to other professional societies such as IEEE, the Magnetics Society, MRS and ASM, and to cooperate with other APS units such as DCMP and DMP in organizing sessions and sponsoring meetings. Magnetism is perhaps the archetypal multidisciplinary subject, in an era when the multidisciplinary nature of some subjects is finally perceived as an advantage. Also we want to provide a forum for some of the more technological aspects of magnetism which, because of its natural connection through its applications to a much wider audience of scientists and engineers in industry, gives us an opportunity to draw in new members and forge contacts in areas of continued growth in magnetism. After all the magnetics market including magnetic recording, materials and energy related magnetic technologies amounts annually to between 120 and 150 billion dollars worldwide, and connections to the economy at large are being perceived as essential for survival by physicists. Naturally there were concerns about how the new group, if formed, would fit within the Society. These concerns had to be addressed and the situation negotiated carefully in order that we could come into being and still be able to count on the support of our closest allies within APS. Most of our signatories are of course also members of other divisions such as DCMP and DMP, so I felt that we understood the concerns. However for us it was a rather dramatic moment when it came to the actual vote, since

even as the vote was called after a lengthy debate that had put the meeting behind schedule, it was still unclear which way it would go.

As it was the vote was strongly in favor of formation (32-10). We now have the opportunity and responsibility for promoting magnetism in its widest sense to the physics community and beyond. Magnetism includes the traditional "solid state physics" parts of the subject, but truly it is more than just this. Magnetism transcends considerations of just electron band structures, to include electromagnetism, magnetic fields, magnetic materials, computer and numerical modeling, instrumentation and measurements, devices and sensors and magnetic recording. In the traditional solid state physics areas of magnetism APS has always been very strong, but it is these other areas of magnetism which can provide good physics problems (and funding, and career opportunities) that we need to strengthen within APS. Otherwise we risk losing out to other societies and losing members too, if we do not provide some focus on these topics for our members as they move into these other areas of magnetism. For example today probably the most rapid growth is in computational magnetics and magnetic recording. These provide career opportunities for many physicists, but these areas could easily be perceived as "engineering", and we would be doubly the worse for the loss.

Now as we look toward the future we have organized a number of sessions on magnetism at the upcoming March Meeting, together with the help of other units, including GIMS, FIAP, DMP and DCMP. Almost all of us are members of other divisions such as DMP and DCMP and forums such as FIAP, and it will be important for us to collaborate with these units to bring a stronger focus on magnetism in its broadest sense within the Society. We will need to strengthen interests of the Society and our fellow physicists in magnetism and its applications - particularly the applications. Today, as we search for reasons for others to invest in our research, it is the applications (whether we like it or not) that provide us with the selling point that enables us to continue our work. Without attention to this we can only expect an ever decreasing level of support for our research.

Finally, concerning membership, we had 274 members at the beginning of January. Currently growth seems to be about 25 per month and we would like to maintain this momentum - so once again please ask your colleagues in magnetism, both inside and outside APS, to join us. Sometimes people are just waiting and even wanting to be asked. Particularly non-APS members are sometimes unsure about joining - we should let them know that we really want them as members.

So please, ask a friend!

David Jiles
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WWW page (<http://www.aps.org/units/gmag>)

The GMAG Home Page is presently being constructed. The overall structure is established, and I have added some hyperlinks. Check it out! In order for the page to provide maximum benefit to all, I would like to solicit suggestions from our members. Among other things, I would like to have an extensive set of links to other web-based material. For example, I've set up a link to the IEEE Magnetics Society, and I think it would be good to link to university departments with magnetic programs, perhaps commercial vendors of magnetic instruments and materials, and educational resources. My hope is that our page could serve as a general gateway to Magnetism on the web. I have done some preliminary searching using search engines such as AltaVista, but haven't found many good links or documents related to magnetism. So I hope a grass-roots approach might be more productive:—if you come across any Web sites of relevance, please send me a short note with the URL, and I'll get it in the list. Furthermore, if you have any suggestions or comments regarding the design and layout of our Home Page, please forward them.

Bruce van Dover

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Magnetism sessions at the 1997 March Meeting

Here are sessions either sponsored by GMAG, submitted under category 14, or with "magnetism" in their titles.

Monday, March 17th

8:00 A19 Neutron diffraction DCMP Room 2206

11:00 B19 Hyperfine interactions DCMP Room 2206

B24 Ultrathin Magnetic Films DMP Room 4300B

14:30 C12 Semiconductors: Transport and Magnetic Compounds DCMP Room 1204A

C19 Antiferromagnetism DCMP Room 2206

Tuesday March 18th

8:00 E17 Metal Surfaces: Surface Magnetism DCMP Room 2215

E19 Giant magnetoresistance GMAG/DCMP Room 2206

E24 Magnetic Reversal Mechanisms DMP Room 4300B

11:00 F19 Clusters and nanoparticles GMAG Room 2206

F23 Magnetoresistive Oxides I: Structure DMP Room 4300F

F24 Interlayer Magnetic Coupling DMP Room 4300B

14:30 G19 Coercivity in Rare Earth Permanent Magnets GMAG/DMP Room 2206

G23 Magnetoresistive Oxides II: Magnetic Ordering DMP Room 4300F

Wednesday March 19th

8:00 I4 Symposium on giant magnetoresistive sensors GMAG/FIAP Room 2210

I12 Semiconductor Heterostructures: Magneto-Optical Properties DCMP Room 1204A

I20 Near-Field Optical and Magnetic Microscopy IMSTG Room 2207

I22 Magnetic Semiconductors and Tunnel Junctions DMP Room 4300H

I23 Magnetoresistive Oxides III: Theory DMP Room 4300F
 11:00 J12 Magnetotransport in Heterostructures: Mostly Single Layer DCMP Room 1204A
 J19 Magnetic modeling 1 GMAG Room 2206
 J22 X-Ray Magnetic Scattering and Dichroism DMP Room 4300H
 J23 Magnetoresistive Oxides IV: Thin Films DMP Room 4300F
 12:48 J'1 Magnetism and Superconductivity in Borocarbides DCMP Room 1203C
 14:30 K19 Magnetic modeling 2 GMAG Room 2206
 K22 Magnetic Nanostructures DMP Room 4300H
 K23 Magnetoresistive Oxide V: Optical Properties DMP Room 4300F
 17:30 K'19 Topical Group Business meeting GMAG Room 2206

Thursday March 20th

8:00 M18 Reflectometry and Magnetic Circular Dichroism DCMP Room 2205
 M19 Magnetic properties of materials GMAG Room 2206
 M23 Magnetoresistive Oxides VI: Transport Properties I DMP Room 4300F
 11:00 N3 Superconductivity in High Magnetic Fields DCMP Room 1203A
 N19 Magnetic measurements GMAG Room 2206
 N22 Magnetic Structure of Multilayers DMP Room 4300H
 12:12 N'3 Superconductivity, Ferromagnetism, and Other Phenomena DCMP Room 1203A
 14:30 O5 Advanced Characterization of Mag. Nanostructures GMAG/IMSTG Room 2210C
 O22 Exchange-Biased and Hard-Magnet Films DMP Room 4300H
 O24 Materials Theory: Structure Alloys and Magnetism DMP Room 4300B
 16:18 O'3 Disordered Quantum Magnets DCMP Room 1203A

Friday March 21st

8:00 Q19 Magnetic Structure and Ordering DCMP Room 2206
 Q20 Electronic Structure: Magnetism Slonczewski. DCMP Room 2207
 9:48 Q'3 Kagome Magnets DCMP Room 1203A
 11:00 R2 Organic Conductors in High Magnetic Fields DCMP Room 1203B
 R19 Spin glasses DCMP Room 2206
 12:48 R'3 Structure and Dynamics Magnetoresistance Perovskites DCMP Room 1203B
 14:30 S3 Resonant Tunneling of the Magnetizations of M12 Acetate DCMP Room 1203A
 S14 Highly Correlated Metals - Magnetism Theory DCMP Room 1205

Calendar of Upcoming Magnetism Meetings

1997

<i>date</i>	<i>organization, venue</i>	<i>primary contact</i>
March 17-21	APS March Meeting	Michael Scanlan

	Kansas City, Missouri	APS Meetings Department Fax: (301) 209-0866 scanlan@aps.org
April 1-4	International Magnetism Conference (INTERMAG) New Orleans, Louisiana	Diane Suiters Courtesy Associates Washington DC Fax: (202) 347-6109 magnetism@mcimail.com
May 12-14	Properties and Applications of Magnetic Materials (PAMM) Chicago, Illinois	Bonnie Dow Illinois Institute of Technology Fax: (312) 567-8976
May 12-14	International Symposium on Nonlinear ElectroMagnetic systems (ISEM) Braunschweig, Germany	Christine Dukaczewski, PTB, Braunschweig Fax: +49 (531) 592-2405 isem@ptb.de
July 27 - August 1	International Conference on Magnetism (ICM) Cairns, Queensland, Australia	Julie Morrison Fax: +61 (3) 9819-3700 meeting@iaccess.com.au
September 14-18	ASM/TMS Materials Week Indianapolis, Indiana	Joe Bularzik Magnetics International Inc. Burns Harbor, Indiana Fax: (219) 399-6562
September 24-26	Soft Magnetic Materials Conference (SMM) Grenoble, France	Afef Kedous-Lebouc ENSIEG, Grenoble Fax: +33 (7) 682-6300 smm13@leg.ensieg.fr
November 3-6	Computational Magnetism (CompuMag) Conference Rio de Janeiro, Brazil	Jose Roberto Cardoso Fax: +55 (11) 818-5719 compumag@pea.usp.br

1998

<i>date</i>	<i>organization, venue</i>	<i>primary contact</i>
January 6-9	Joint Magnetism and Magnetic Materials/INTERMAG Conference San Francisco, California,	Diane Suiters Courtesy Associates, Washington DC

		Fax: (202) 347-6109 magnetism@mcimail.com
September 9-12	European Magnetic Materials and Applications (EMMA) Conference Zaragoza, Spain	Conference Secretariat Physics Department University of Zaragoza Fax: +34 (7) 676-1229 emma98@posta.unizar.es
November 9-12	Magnetism and Magnetic Materials Conference, Miami, Florida	Diane Suiters Courtesy Associates Washington DC Fax: (202) 347-6109 magnetism@mcimail.com

GMAG Officers (Interim)

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Interim Secretary-Treasurer

Bruce van Dover

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Martin Sablik

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Report of the Nominating Committee

It was a rewarding experience for me to serve as the Chair of the Nominating Committee for our new Topical Group. The selection of nominees was a problem, not because of a lack of suitable candidates, but because there was such a plethora of well-qualified people from which to choose. I believe that the makeup of the ballot demonstrates the strength and potential of our new Group; regardless of the outcome of the election, its leadership will be in good hands. I was struck, as were many others I discussed it with, by the difficulty of making ballot choices-- selecting an equal among equals. We hope and expect that the unsuccessful candidates will consider running again.

There were a few ground rules that were followed in the makeup of the ballot. Candidates from the same institution were not in direct opposition; both candidates for Vice-Chair are affiliated with industrial organizations, so that we are assured that a future Chair will be from industry; finally, the decision to have an unopposed election for Chair and Secretary-Treasurer was a popular and obvious one, given the importance of those offices, particularly for a Group getting started. Bruce van Dover agreed to take on a critical and labor-intensive position. As for David Jiles, I would like to add a postscript to his article in this Newsletter.

Despite the "two years of careful work since the Pittsburgh March Meeting, putting our case together", success was still entirely dependent on the Council vote. No reference to that Council meeting should omit the key factor in the eventual positive outcome: David Jiles. I believe that David was uniquely suited to be the point man during the *lengthy* debate. The attributes he brought to his role were patience, diplomacy, and tact, defined as "the ability to appreciate the delicacy of a situation and do or say the most fitting thing" [best delivered with a British accent, of course].

Larry Rubin, Nominating Committee Chair
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The Ballot—1997

Ballots were mailed on about 22 January 1997, and must be returned to Larry Rubin as indicated on the ballot. Don't forget to vote!

Chair(*unopposed*)
David Jiles, Iowa State University

Secretary-Treasurer(*unopposed*)
R. Bruce van Dover, Bell Labs

Chair-Elect
Carl Patton, Colorado State University
Lawrence Bennett, NIST, George Washington University

Vice-Chair

Fred Pinkerton, General Motors R&D Center
Bernell Argyle, IBM T J Watson Research Center

Executive Committee*(1 yr. term)*

(elect 2)

Alison Chaiken, Lawrence Livermore National Lab
Brad Dodrill, Lake Shore Cryotronics
Ernst Schloemann, Consultant
Simon Foner, MIT

Executive Committee*(2 yr. term)*

(elect 2)

Martin Sablik, Southwest Research Institute
James Tobin, Lawrence Livermore National Lab
Yaacov Shapira, Tufts University
Robert O'Handley, MIT

Executive Committee*(3 yr. term)*

(elect 2)

Laura Henderson Lewis, Brookhaven National Lab
David Sellmyer, University of Nebraska
Ron Goldfarb, NIST (Boulder)
David Pappas, Virginia Commonwealth University