

IEEE Magnetics Society Newsletter

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TABLE OF CONTENTS:

- Message from the President
- IEEE Fiscal State of Affairs
- Chapters Corner
- MAGNEWS
- Visual Magnetism - *Quiz*
- IEEE VIRTUAL MUSEUM Open
- Conference announcements
 1. [Magnetic Microsphere Meeting](#), *May 9-11, 2002*, Tallahassee, Florida, U.S.A.
 2. [CEFC The Tenth Biennial IEEE Conference on Electromagnetic Field Computation](#), Perugia, Italy, *June 16-19, 2002*
 3. [PIERS 2002](#), Progress in Electromagnetics Research Symposium, *July 1 - 5, 2002*, Cambridge, Massachusetts, USA
 4. [BIOMAG 2002](#), Jena, Germany, *August 10 - 14, 2002*.
 5. [TMRC 2002](#), *August 26-28, 2002*, Santa Clara, USA
 6. [IEEE-NANO 2002](#) Second IEEE Conference on Nanotechnology, *Aug. 26-28, 2002*, Washington DC, USA
 7. [Wigner Centennial](#), *8-12 July 2002*, Pécs, Hungary
- IEEE Magnetics Society Distinguished Lecturers for 2001-2002
- Obituaries
 - Warren E. Henry
- Visual Magnetism – *Solution*



Message from the IEEE Magnetics Society

President: Robert Fontana, Jr.

Vice President: Ronald S. Indeck

Secretary/Treasurer: Kevin O'Grady

For information on the IEEE Magnetics Society, please check the website at

www.ieemagnetics.org

IEEE Fiscal State of Affairs

Fiscal matters continue to be the major issue before volunteers and staff, and, for yet another installment of this column, our original selection of topics is still, well, topical:

1. Selection and management of initiative programs within the Institute,
2. Periodic review of the Corporate Infrastructure activities
3. A closer look at (read "simplification of") the complicated set of business rules that are required to support the many offerings of the Societies and Councils,
4. A financial model that more properly allocates expenses among users.

1. Initiative Programs:

An Adhoc Committee of the Board of Directors will continue to look closely at initiative spending throughout the year. New and old initiatives will be scrutinized for strategic impact. TAB initiatives will be internally scrubbed before being sent on to the BoD. We should begin to see the outlines of a formal review process by the time you read this. In related activity at the February BoD series, P2SB, TAB, and the Board passed two out-of-cycle 2002 initiatives: an IEEE *Member* Digital Library, and an IEEE *Medical* Online Package. The first is just what it sounds like: online access to IEEE publications for individual Members. The second is the first experiment in a series of topical technical offerings across the Institute which cut across traditional Society lines, AND make a great deal of sense to our technical customers. Clear and detailed business plans showing rapid investment recovery facilitated passage of both items, which still leave a net positive operating budget for 2002.

2. Infrastructure Charge Distribution within TAB:

The two methods (*Principles, Blended*) under consideration for Infrastructure Charge Distribution were described in the last column. The motion before TAB in February, was to accept the *Principles* method, with a 4 year phase-in from the *Blended* method, as follows:

year	<i>Blended</i>	<i>Principles</i>
2002	100%	
2003	2/3	1/3
2004	1/3	2/3
2005		100%

When the discussion ended and the votes were counted, TAB moved to adopt the transition by nearly a 3:1 margin. Minority opinions held that:

1. The *Principles* method discouraged membership growth, because of the large per-member charge (~\$15) to Societies.
2. The transition period is too slow.

Having voted to IDENTIFY charges related to membership infrastructure as part of the *Principles* method, TAB is now armed with the awareness to do something about it. Congratulations to us all, and read on...

3. Business Rule Complexity

Speaking of membership costs, during 2001, the IEEE Infrastructure Oversight Committee (IOC) examined the value proposition offered by IEEE and Society membership, and proposed that there are substantial savings to be gained by simplifying or reducing our present membership offerings (briefly described in the last letter). The range of savings here is between \$2 and just under \$9 per member. A savings of \$9 per member (*minimum feature* alternative) would make a sizeable dent in the \$15 charge identified by the *Principles* method of infrastructure charges. Here's an example: That membership card we carry around in our pocket costs about \$1.40. Each. In November, the BoD authorized RAB and TAB to investigate business rule changes to realize savings in a *minimum feature* alternative, and a TAB committee formed in February will give its first suggestions in June.

4. Financial Model and the Budget Update

IEEE Budget principles adopted at the November Board of Directors' Meeting for the 2002 Budget are serving as a template for the 2003 Budget development. The non-controversial principles are:

- The operating budget will be balanced.
- All investment income, including dividends and interest (D&I), is NOT part of the operating budget. Further, initiatives (continuing plus new) will be capped by D&I income. Excess D&I income will be used to offset infrastructure charges.
- Other surplus investment income will be returned to reserves.

These principles were put into place for the 2002 budget, which was passed in the February BoD meeting. Additional elements of the financial model, including methods of re-establishing Corporate Reserves, and modifying the method of paying for additional indirect core functions, are still under consideration.

Discussion

The 2002 Budget, net positive, is finally final. While we address the challenge of delivering the revenues, we must also finalize the Financial Model and Budget principles, and publish them in the IEEE financial operating manual, so that we don't forget them in the future. These will let us begin to drive down infrastructure costs, in effect, to quote an old saying, "Repairing the airplane while in flight."

Peter Staecker, Divison IV Director

p.staecker@ieee.org

March 2002

Chapters Corner

by

Dr. Richard H. Dee,
Magnetics Society Chapters Chair

*** NOTICE TO MAGNETICS SOCIETY CHAPTER CHAIRS ***

CHAPTER CHAIRS (or for that matter members at large!) please respond to the following so we can update our members on what's happening in Chapterland!

If you are the local chapter chairman and would like to share what's happening in your chapter and local area (e.g. talks, people activity, magnetics news, company or university news etc.), please forward a paragraph (or two), a picture, a reference to a interesting article or something inventive or newsworthy (in your opinion) to me at r.dee@ieee.org so we can include in the next MagSoc Newsletter.

Could you please update you contact information for me. I've noticed several emails bounce back implying that you've moved (at least email addresses). Let me know at r.dee@ieee.org so we can still communicate.

For information on local chapters check the website www.ieeemagnetics.org.



MAGNEWS

Exciting new achievements?

Share with us the news!

This is the place to inform the magnetics community about a new discovery, great achievement, theoretical or experimental breakthrough in magnetism, worth to share.

Submit a max. 100 word long information about your new results, what might be worthy of note – pictures welcome!

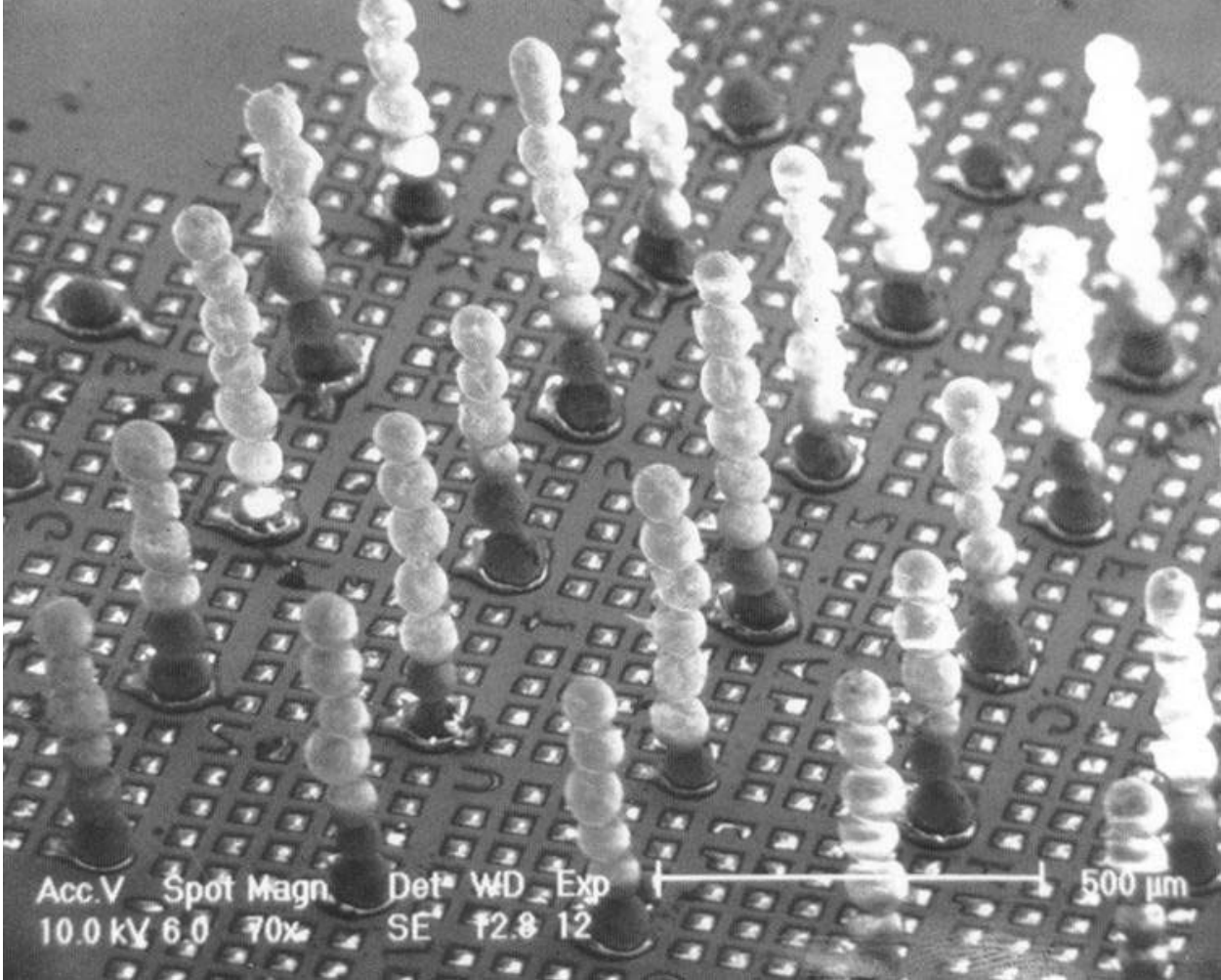
to the Editor: <mailto:pardavi@ieee.org>

Sorry, this is NOT the place for product description, or advertisement.



VISUAL MAGNETICS

WHAT IS THIS?



SOLUTION?

GO TO THE END



IEEE Virtual Museum

The new IEEE Virtual Museum, designed for educators, pre-college students, and the general public, launched on 20 Feb at <http://www.ieee.org/museum>

Containing audio and video clips, and interactive features, the first two exhibits are ***Socket to Me! How Electricity Came to Be*** and ***The Beat Goes On: How Sounds are Recorded and Played***.

Visitors can learn the answers to such questions as what was the first computer? Did Edison really invent the light bulb? How did the patterns in a Utah cornfield lead to the development of TV? What is the "X" in an X-ray? Why do Alvin and the Chipmunks merit inclusion in a technology museum? and much more.

Three more exhibits are in production and are scheduled for release by third quarter 2002. These will highlight the different applications of microwaves, the works of Thomas Edison, and contributions women have made to electrical and information technologies.

The IEEE Virtual Museum explores the global social impact of electrical and information sciences and technologies and demonstrates the relevance of engineering and engineers to society. It is supported by the IEEE Foundation, the IEEE Life Members, and the Trustees of the IEEE History Center.

<http://www.ieee-virtual-museum.org/>

http://www.ieee.org/organizations/history_center/

Kim Breitfelder

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IEEE/Rutgers University History Center
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Conference announcements 1

Fourth International Conference on the Scientific and Clinical Applications of Magnetic Carriers

May 9 - 11, 2002
Tallahassee, Florida, U.S.A.

Magnetic Microsphere Meeting

Since 1996, a specialized conference on the **Scientific and Clinical Applications of Magnetic Carriers** has taken place every two years.

The 4th conference will be held this year in Tallahassee, Florida, U.S.A. from May 9-11, 2002. Nearly 200 scientists will discuss all aspects of magnetic microspheres and ferrofluids. Topic will include:

- the preparation, analysis and magnetic properties of magnetic microspheres made from all kinds of materials such as polymers, ceramic, biomaterials, biodegradables
- in vitro and in vivo applications, such as molecular biology, in vitro diagnostics, contrast agents in MR imaging, stem cell separation, magnetic drug delivery, toxic metal removal, magnetic cell sorting, hyperthermia treatment, groundwater decontamination
- nanotechnology applications such as magnetoelectronics, sensors, and magnetic particle motion analysis. Dr. Valerie Browning will discuss why the Department of Defense is interested in this area.

A critical review of the current state of the art will be given by Dr. Kurt Hofer in hyperthermia and by Dr. Sherif Farag in medical therapies requiring cell separation. Dr. John Wolfe will provide an introduction to gene therapy highlighting how magnetic carriers can be used in this new area. This year's meeting will also include a tour of the National Magnetic High Field Laboratory in Tallahassee with an overview of research conducted at this facility given by its director, Dr. Jack Crow.

All details for the meeting are available on the website

<http://www.magneticmicrosphere.com>

http://www.geocities.com/hafeliu/mag_carriers.html

Conference announcement 2



**The Tenth Biennial
IEEE Conference on
Electromagnetic Field
Computation**
Perugia, Italy,
June 16-19 2002

Department of Industrial Engineering, University of Perugia

The Tenth Biennial IEEE Conference on Electromagnetic Field Computation (**CEFC**) will be held at Perugia during **June 16-19, 2002**. The last Conference was held in Milwaukee, Wisconsin, USA in 2000.

Perugia is an ancient town founded in the prehistoric epoch, located in the Umbria region, also called "the green heart of Italy" for its rich and extensive vegetation. Perugia is a very popular tourist destination, known for its important monuments, its folklore, its rich cuisine and its quiet and friendly people.

The aims of the IEEE CEFC are to present the latest developments in modeling and simulation methodologies for the analysis of electromagnetic fields and wave interactions, with the application emphasis being on the computer-aided design of low and high frequency devices, components and systems. Scientists and engineers worldwide are invited to submit original contributions in the areas of static and quasi-static fields; wave propagation; material modeling; coupled problems, optimization; numerical techniques, software methodology; applications of electromagnetic CAD to electrical/electronic device, component and system prototyping. The Conference will feature oral and poster presentations.

Further information can be obtained from:

[CEFC2002 Secretariat](#)

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<http://www.unipg.it/cefc2002/preliminary.htm>

Conference announcement 3

PIERS 2002

Progress in Electromagnetics Research Symposium

July 1 - 5, 2002

Cambridge, Massachusetts, USA

Progress in Electromagnetics Research Symposium (PIERS) provides an international forum for reporting progress and recent advances in the modern development of electromagnetic theory and its new and exciting applications.

PIERS 2002 will be held on July 1 - 5, 2002 in Cambridge, Massachusetts, USA.

The technical program is available at:

<http://piers.org/piers2k2/program.html>

PIERS Office

c/o Professor J. A. Kong

Room 26-305

77 Massachusetts Avenue

Cambridge, MA 02139, USA

Fax: 617-258-8766 and/or 617-258-9525

E-mail: piers@ewt.mit.edu and/or piers@ceta-mac1.mit.edu

<http://piers.org/piers2k2/index.html>

For your convenience and reference, here is a collection of the downloadable material made available on this site:

- [PIERS SURVEY FORM \(PDF\)](#)
- [SAMPLE SUMMARY SUBMISSION \(PDF\)](#)
- [DOWNLOAD PIERS 2002 CALL FOR PAPERS \(PDF\)](#)

Conference announcement 4

BIOMAG 2002 **13TH INTERNATIONAL CONFERENCE ON BIOMAGNETISM** Jena, Germany, August 10 - 14, 2002.

Biomagnetism is an interdisciplinary field of research with scientists working in biological, physiological, medical, physical, technical and other associated disciplines. Biomagnetic research ranges from basic research to clinical applications. The common denominator of all of these research activities is the analysis of the magnetic field produced by the human body. Because of the totally non-invasive character of the biomagnetic techniques, we believe that the prospective socio-economic impact of this new medical technology is extremely high. We are convinced that the BIOMAG 2002 will substantially contribute to exchange of new ideas and new views in this field.

The conference will take place in Jena, a historical city with a University founded in 1558, a brewery tradition since 1328, and a wine making tradition that has lasted more than 2000 years. At the same time, Jena is a very young and lively city with 20,000 students and the second highest density of young (dot.com) start-ups on the stock market in Germany. We feel that this mixture will provide a very stimulating surrounding for the BIOMAG 2002 conference.

<http://biomag2002.uni-jena.de/>

Jens Haueisen and Hannes Nowak

Conference announcement 5

INTERNATIONAL CONFERENCE ON MAGNETIC RECORDING MEDIA **TMRC 2002**

The Thirteenth Magnetic Recording Conference (TMRC 2002)
will be held
August 26-28, 2002, at Santa Clara University, Santa Clara, CA, USA

TMRC 2002 will be on MAGNETIC RECORDING MEDIA. The Conference will focus on both Magnetic Recording Media as well as Tribology. About thirty invited papers of the highest quality will be presented orally and subsequently considered for publication in the IEEE Transactions on Magnetics. The topics to be presented include:

- Antiferromagnetic Coupled Media
- Perpendicular Recording Media
- Magnetic Media Thermal Stability
- Thermally Assisted Writing
- Magnetics and Microstructure
- Test and Characterization
- Head / Media Interface
- Tribology

The full program booklet of TMRC 2002 will be distributed to members of the IEEE Magnetic Society in June 2002 and posted on the web site below where current information on TMRC 2002 can be now found.

<http://www.iist.scu.edu>

Al Hoagland

Director, Institute for Information Storage Technology (IIST)
& Director, Magnetic Disk Heritage Center (MDHC)
Santa Clara University

Conference announcement 6

IEEE-NANO 2002
Second IEEE Conference on
Nanotechnology

Aug. 26-28, 2002,
Washington DC, USA

Sponsored by
IEEE Nanotechnology Council

Conference organization:

General Chair: Dr. Clifford Lau, ONR, lauc@onr.navy.mil

Program Chair: P.L.E. Uslenghi, Univ. of Illinois at Chicago, uslenghi@uic.edu

http://www.mein.nagoya-u.ac.jp/IEEE-NANO/IEEE_NANO_2002.html

Conference announcement 7

Wigner Centennial 8-12 July 2002, Pécs, Hungary



Wigner Jenő Pál (Eugene Paul Wigner), one of the greatest physicists of the 20th century was born in Budapest, Hungary in 1902. In the year 2002 the physics community will celebrate the Wigner Centennial year in various forms.

A Centennial Conference in Commemoration of Eugene Paul Wigner will be held in Hungary on 8-12 July, 2002 as a part of this celebration. The conference will be hosted by University of Pécs, which was the first university established in Hungary, and one of the oldest in Europe.

The conference is intended to cover at least partly the large variety of fields to which Wigner made contributions, breaking new paths in many domains of physics. The heritage of the ingenious work of Wigner includes important contributions to nuclear physics, epoch-making work on how symmetry is implemented in quantum mechanics, the determination of all the irreducible unitary representations of the Poincaré group, and his work with Bargmann on realizing those irreducible unitary representations as the Hilbert spaces of solutions of relativistic wave equations, discrete symmetries and superselection rules in quantum mechanics, symmetry implications for atomic and molecular spectra, natural line-width theory, contrast of microscopic and macroscopic physics and of general relativity and quantum mechanics, explanation of why symmetry yields more information for quantum than for classical mechanics, introduction of the quasiprobability distributions later named after him and prevalently used in quantum optics, philosophical questions such as what nature laws should be, limits on causality, and whether quantum mechanics could in principle explain life.

Information on the conference

- The conference will be held in Pécs, South Hungary, on 8-12 July, 2002.
- <http://quantum.ttk.pte.hu/~wigner>
- Mail to: wigner@quantum.ttk.pte.hu



IEEE Magnetics Society Distinguished Lecturers 2001-2002



**Advanced Magnetic Materials and Transducers:
Enabling Factors for the Digital Storage Explosion**

Shan X. Wang
Stanford University

**Advanced Magnetic Materials:
Development and Micromagnetics**

Josef Fidler
Vienna University of Technology



**Ferromagnetic Resonance Force Microscopy:
Probing Ferromagnets at the Micrometer Level**

Philip E. Wigen
Ohio State University

See details at:

Details: : <http://www.ieeemagnetics.org/>



Obituary

Warren E. Henry 1909-2001

We regret to announce that Dr. Warren E. Henry passed away on October 31, 2001.



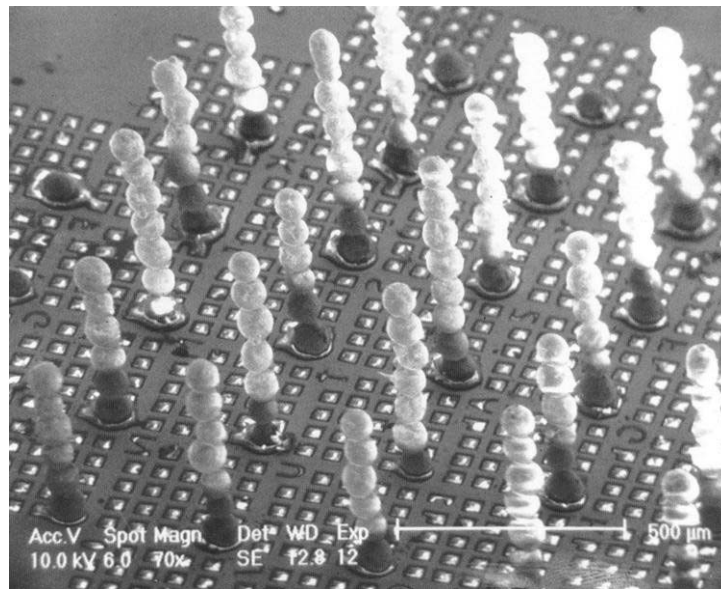
Warren E. Henry's nearly seven decades of work in the fields of magnetism and superconductivity have earned him praise as one of the most eminent African American scientists in this nation's history. He has written or contributed to hundreds of scientific articles and co-authored the 1934 book, *Procedures in Elementary Qualitative Chemical Analysis*. His monograph on paramagnetism (Halliday and Resnick: *Electricity and Magnetism*) has been a physics textbook standard in this country for years.

http://www.math.buffalo.edu/mad/physics/henry_warren.html

VISUAL MAGNETICS – SOLUTION

What is this?

3D-Array of magnetic Ni-Al₂O₃ microspheres of 47 nm diameter, standing upright under the influence of a magnetic field.



Weijia Wen et al, J Mater Res 14, 1186, 1999; reprinted with permission.

Poster of the

Magnetic Microsphere Meeting

May 9-11, 2002

Tallahassee, Florida, U.S.A.