

Newsletter

July 2020

'Ratchet Made of Tiny Magnets': Functional material based on coupled nanomagnets.
Source: Sebastian Gliga (University of Glasgow, UK.)

Newsletter of the IEEE Magnetics Society

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From the President

By **Pallavi Dhagat**, *President of the IEEE Magnetics Society*

I hope you are all well and safe.

I am writing this article from home with the assistance of my 9-year old son, eager to use his recently acquired document editing skills from online schooling. I suspect that many of you have similar stories of balancing work, homeschool and other responsibilities. In the midst of this new normal, I hope that time spent with family has made for some good and happy memories to look back on in the years to come.



Turning to matters of the Society, I am optimistic that despite the challenges presented by the pandemic we will be able to continue our operations in a stable manner. We expect that our income from publications will suffer for the next couple of years due to research slowing down worldwide while our conference-related expenses will increase due to contractual payments needing to be fulfilled (e.g., with conference venues and vendors) even as we re-size our conferences or organize them virtually. However, with a healthy balance in our rainy-day funds and careful fiscal planning we are well-positioned to navigate these uncertainties.

I am working with Rudolf Schäfer, our Conference Executive Committee Chair, and an ad hoc committee to identify how best to continue to serve our members in the wake of the pandemic, through our conferences, publications and outreach efforts. In this, we see a silver lining of opportunities where technology can allow us new ways to bring our community together, inclusively and inexpensively, to continue the scientific exchange necessary to drive and support innovation and collaboration across borders. We hope to explore some of these new ideas with our chapters and at our conferences. Stay tuned!

In the meantime, if you have suggestions and thoughts to share, please do not hesitate to email me. I wish you all a healthy and safe summer. Be well.

Pallavi Dhagat can be contacted via email: dhagat@ieee.org.

Online Spintronics Seminar Series

By *Hans Nembach*

While the current situation has led to the cancellation of conferences, workshops, and visits, a highly successful series of online seminars organized by Kirill Belashchenko (University of Nebraska – Lincoln) and Xin Fan (University of Denver) provides researchers and students an opportunity to attend

presentations from excellent speakers around the world including the current Distinguished Lecturers of the Magnetics Society. Presentations are followed by Q&A sessions and are recorded, allowing scientists from other time zones to watch the talks at their convenience.

More information about the Online Spintronics Seminar Series, including the schedule of upcoming talks, sign-up instructions, and recordings of past talks, can be found at <https://www.spintalks.org>. If you are interested in nominating a speaker or giving a talk, please contact the organizers at info@spintalks.org.

In Memoriam: David Atherton (1935-2020)

By *David Jiles, Administrative Committee Member*

David Lawrence Atherton, Fellow of the Royal Society of Canada, Emeritus Professor of Physics and Computer Engineering at Queen's University, passed away peacefully on 18 March 2020 at his home, Silverstone Farm on Sydenham Lake, north of Kingston, Ontario, Canada. He is survived by Joanna (née Banham) his beloved wife and companion of 58 years, his two much loved daughters, Tamsin and Heather, and his brothers, Richard in Derbyshire, England, and Charles in Athens, Greece. He will be missed as the cherished grandfather of Caden, Serena, and Jude.



David was born in Chelsea, England, on 22 February 1935. He was a major scholar and exhibitor at Clare College, Cambridge University. He moved to Canada in 1959, joining Ferranti-Packard Electric Ltd. in Toronto, Ontario, where he helped build the first Canadian computers and subsequently established research into practical applications of superconductivity. David founded and led the Canadian Maglev project to design and build magnetically levitated ground transport. He brought this project to Queen's University in 1971, where he helped foster the growth of the engineering physics program.

David established the Applied Magnetics Group at Queen's University and began research into magnetic nondestructive evaluation in 1981. This included work on hysteresis and the effects of stress on magnetization, magnetic flux leakage inspection techniques for oil and gas pipelines, and on the remote-field eddy current inspection methods for metallic tubes used in steam boilers, nuclear reactors and heat exchangers.

David's applied research necessitated the support of fundamental research on the effects of mechanical stress on magnetic hysteresis, and on measuring and modeling these effects. In the mid-1980s, he was the co-inventor of the Jiles-Atherton model of ferromagnetic hysteresis. His group also developed complex tensor relationships between magnetic field, magnetization, and stress. In 1997 he co-founded the Pressure Pipe Inspection Company.

David was a prolific writer of scientific papers and was recognized as an international expert in magnetically levitated transport, ferromagnetic hysteresis, Barkhausen noise analysis, and magnetic nondestructive evaluation for inspection of oil and gas pipelines.

David was also a keen photographer and mountaineer, climbing in Iceland, Greenland, Alaska, the Canadian Arctic, and Peru. He made several notable first and second mountain climbing ascents and served as chairman of the Toronto section of the Alpine Club of Canada.

Grammar and Vocabulary Quiz

By Ron Goldfarb, Publications Committee Chair

A. Which is correct?

1. Please contact my sister and I
2. Please contact my sister and me

B. The sentence, "The plains were traversed and the mountains were climbed," is written in the

1. Active voice
2. Passive voice

C. The abbreviation of the Latin phrase for "and others" is

1. et. al.
2. et al.

D. In American usage, the period at the end of a quoted sentence is placed

1. Before the closing quotation mark
2. After the closing quotation mark

E. The word "effect"

1. Is a noun
2. Is a verb
3. Can be either a noun or a verb

F. The word "laser" is

1. A pseudonym
2. An acronym
3. A synonym

G. What is a dangling participle?

1. A word that couples two parts of a sentence

2. A misplaced modifier
3. An anatomical structure

H. A "verbal" is

1. An adjective derived from a verb
2. A scatalogical expletive
3. An illegal contract

I. A malapropism is

1. A figure of speech
2. Named after Mrs. Malaprop, a character in a play written in 1775
3. The unintentional misuse of a word by confusion with one of similar sound

J. A word that introduces restrictive, essential clauses needed to understand a sentence:

1. That
2. Which

K. Which is correct?

1. Woe is I
2. Woe is me

L. A "funambulist" is

1. A standup comedian
2. A peripatetic teacher
3. A tightrope walker

M. "Opsimath" is

1. One who learns late in life
2. A person of great and varied learning
3. A qualifying exam for graduate school in the U.K.

N. The word "hypnopompic" refers to

1. Subtle braggadocio
2. The partially conscious state that precedes complete awakening from sleep
3. Easily influenced

O. "Fuliginous" means

1. Insincere
2. The color of soot
3. Like a fuse

P. "Oneiromancy" is the practice of predicting the future

1. Through the interpretation of dreams
2. By communicating with the spirits of the dead
3. From lines on the palm of one's hand

Q. To "sparge" is to

1. Overcome obstructions
2. Spray or sprinkle
3. Speak kindly of someone

R. To "pule" is to

1. Peel off
2. Strike
3. Whine or whimper

S. A "caitiff" is

1. A despicable person
2. A lance bearer
3. A defense fortification

T. A "tatterdemalion" is

1. A person wearing ragged clothing
2. A type of sea urchin
3. A decoy or bait

(Answers on Page 4.)

IEEE Sensors Council News

Submitted by Jürgen Kosel, IEEE Sensors Council Representative

Conferences

The IEEE Sensors Council's flagship conference, **IEEE SENSORS 2020** will be held virtually in October this year. It is intended to provide a forum for research scientists, engineers, and practitioners throughout the world to present their latest research findings, ideas, and applications in the area of sensors and sensing technology. Please monitor the conference **registration page** for the latest registration information..

The 2nd edition of the IEEE International Conference on Flexible and Printable Sensors and Systems (**FLEPS 2020**) will be held virtually during 16-19 August 2020. **Registration** for virtual attendees is FREE through 8 July 2020. Visit the **conference website** to view the full conference program, and talk details for all the keynote speakers.

Publications

The **IEEE Sensors Journal** is a peer-reviewed, semi-monthly online journal devoted to sensors and sensing phenomena. You can read the current issue of the *IEEE Sensors Journal* on **IEEE Xplore**, or contribute to one of our upcoming **Special Issues**.

IEEE Sensors Letters is an electronic journal dedicated to publishing short manuscripts, quickly, on the latest and most significant developments in the field of sensors. Read the current issue of *IEEE Sensors Letters* on **IEEE Xplore**.

Activities

Women in Sensors (**WiSe**) aims to promote globally, the presence and advancement of persons who identify as women in the technical area and professions related to sensors. It is targeted at professional women in sensing technology, from industry or academia, and will provide the opportunity to create communities to facilitate knowledge sharing and provide support through highly interactive sessions designed to foster

discussion and collaboration. Learn more on the **WiSe webpage**.

The IEEE Sensors Council **YouTube Channel** is growing! **Subscribe** to our channel today to stay up to date with all the latest sensors tutorials and conference videos.

New Senior Members

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

June 2020: Jesus Acero, Muftah Al-Mahdawi, Geoffrey Beach, Eric Brown, Pankaj Kalore, Marcelo Knobel, Vincent Laur, Shengming Li, Fernando Machado, Rodrigo Ocon, Charudatta Phatak, Jason Pries, Rajeev Rawat, Kartik Sitapati, Koki Takanashi, Oleksandr Tovstolytkin and Jing Wang.

For more information on elevation to Senior Member, visit the **IEEE Senior Member Grade** Web page.

Conference Calendar

By **Gareth Hatch**, Newsletter Editor

Please check the conference Web sites shown below for the latest information on any potential COVID-19 related schedule or format changes.

The 31st Magnetic Recording Conference (TMRC 2020)
17-19 August 2020 - online.

The European School of Magnetism (e-ESM2020)
28 September - 2 October 2020 - online.

Conference on Magnetism and Magnetic Materials (MMM 2020)
2-6 November 2020 - online.

19th Biennial IEEE Conference on Electromagnetic Field Computation (CEFC 2020)
16-19 November 2020 - Pisa, Italy.

The Joint European Magnetic Symposia (JEMS2020)
7-11 December 2020 - Lisbon, Portugal + online.

MAGNETICS 2021
19-20 January 2021 - Orlando, Florida, USA

Intermag 2021
26-30 April 2021 - Lyon, France

26th International Workshop on Rare Earth and Future Permanent Magnets and their Applications (REPM2020)
7-10 June 2021 - Baltimore, Maryland, USA.

To list your conference in the Newsletter Conference Calendar in a future edition, please contact the **Newsletter Editor**.

Special Issue and Sections in IEEE Journals Cosponsored by the Magnetics Society

By Ron Goldfarb, Chair, Publications Committee

The *IEEE Journal on Exploratory Solid-State Computational Devices and Circuits* (JxCDC) has announced a special issue on coupled oscillators for non-von Neumann computation. Magnetics Society members who work on coupled spin-torque oscillators may wish to contribute. The submission deadline is 30 September 2020. Information about JxCDC is available on the [JxCDC webpage](#). JxCDC is published on [IEEE Xplore](#).

IEEE Transactions on Quantum Engineering (TQE) has two special sections scheduled for 2020: one on classical control systems for quantum information applications and one on the quantum Internet. Submission deadlines are 30 September 2020 and 31 October 2020, respectively. Complete information is available on the [TQE website](#). TQE articles are published on [IEEE Xplore](#).

Grammar and Vocabulary Quiz Answers

By Ron Goldfarb, Publications Committee Chair

(Quiz questions on Pages 2 & 3).

- A. 2: Please contact my sister and me
- B. 2: Passive voice
- C. 2: No period after “et”
- D. 1: Period before the closing quotation mark
- E. 3: Can be either a noun or a verb
- F. 2: An acronym (light amplification by stimulated emission of radiation)
- G. 2: A misplaced modifier
- H. 1: An adjective derived from a verb
- I. 2: Named after Mrs. Malaprop, a character in a play written in 1775 (*The Rivals*, by Richard Brinsley Sheridan) and 3: The unintentional misuse of a word by confusion with one of similar sound (“I am not under the affluence of alcohol”)
- J. 1: That
- K. 1: Woe is I
- L. 3: A tightrope walker
- M. 1: One who learns late in life

- N. 2: The partially conscious state that precedes complete awakening from sleep
- O. 2: The color of soot
- P. 1: Through the interpretation of dreams (2 refers to necromancy; 3 refers to chiromancy or cheiromancy)
- Q. 2: Spray or sprinkle
- R. 3: Whine or whimper
- S. 1: A despicable person
- T. 1: A person wearing ragged clothing

Request for Cover Image Submissions

By [Gareth Hatch](#), Newsletter Editor

On the cover of previous editions of the Newsletter we have featured images from the art-related competitions at the InterMag and MMM conferences. Given the conference cancellations this year, I would like to invite image submissions directly from IEEE Magnetics Society members, to potentially feature on the cover of future editions.

Please send your high-resolution image submissions to me at g.p.hatch@ieee.org with a caption or title for the image, a brief technical description, the name of the creator of the image, and their organization or affiliation.

While I can't guarantee that every image submitted will be used, I look forward to receiving your submissions for consideration.

About the Newsletter

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

Contributions are solicited from Society members, Officers & other volunteers, conference organizers, local chapters, and other individuals with relevant material. The Newsletter is published quarterly on the Society webpage at: <http://www.ieeemagnetics.org>

Please send all contributions via email to the Newsletter Editor, Gareth Hatch, at: g.p.hatch@ieee.org

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