

THE WAVE



The newsletter publication of the International Microwave Power Institute

January/February 2020



IMPI's Spring Webinar Series: Consumer Microwave Cooking: Nutrition, Quality, and Safety

Part I: It's all magic! – Healthy eating – getting the best results from your microwave oven

Thursday, February 20, 2020 (11am -12pm EST)

Instructor: Jennipher Marshall-Jenkinson, Chairman, Microwave Technology Association – UK

Facts: More nutrients are retained in foods cooked in a microwave oven, more energy is saved – due to the quick cooking time, AND if food is cooked properly and quality cannot be surpassed! So watch and learn!

Part II: Microwave Oven Food Safety

Tuesday, March 31, 2020 (11am -12pm EST)

Instructor: Meredith Carothers, Technical Information Specialist, Office of Public Affairs and Consumer Education, Food Safety and Inspection Service, USDA

Part III: Microwaves and Nutrition: Perceptions, Reality, Practicality

Tuesday, April 28, 2020 (11am -12pm EST)

Instructor: Sally Gerling, Registered Dietitian/Nutritionist, Certified Diabetes Educator – Gerling Dietetics & Nutrition- owner, private practice, nutrition counseling and education, Modesto Junior College - Adjunct Nutrition Instructor

IMPI Webinars are FREE for all members; the non-member price is \$99 for one webinar; \$259 for the series. **REGISTER TODAY!**

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Cover Photo: Forsyth Park - adjacent to IMPI 54 venue, the DeSoto Hotel.
Photo Credit: Getty Images

PRESIDENT'S MESSAGE

I am something of a nut when it comes to data backups. Since my computers are Macs, they all have the wonderful program, "Time Machine", which automatically backs up the computers, onto external hard drives, several times a day, and saves about 2 years worth of backups. (I also use an off-site backup system.)

Several newsletters ago, because of the worldwide proliferation of data, my column discussed the need to expand our useful exponents to include "ronna & quecca", i.e., 10^{27} & 10^{30} , and 10^{-27} & 10^{-30} , respectively. I was reminded of this in a recent issue of Scientific American, which stated that approximately "1.7 MB of data will be created per second per person globally" equivalent to "about 418 zettabytes" (10^{20} bytes) per year, or about 418 billion one-terabyte hard drives worth of information". Data centers use huge amounts of energy for magnetic or optical data storage systems that can't last for more than a century. But there is a serious alternative to these hard drives: DNA-based data storage. DNA consists of long chains of the nucleotides A, T, C and G, which can be translated into the 0s and 1s for information storage. As you know, DNA is "routinely sequenced (read), synthesized (written to) and accurately copied with ease" in the human body, so it should be possible to do that externally. It is also incredibly stable, lasting hundreds of thousands of years. But it is in storage capacity where it shines: In a recent publication (Nature Materials), George Church of Harvard University and his colleagues indicated that all the world's current storage needs for year could be met by a cube of DNA measuring about 1 meter on the side. Translate that into the real estate savings that would occur if DNA storage replaced all the current data centers! The prospect of DNA storage had its origins in the 1970s and is not merely theoretical, as numerous universities and companies, such as Microsoft, are studying and finding uses for data storage and many other applications. From my reading, it appears that there is an almost limitless horizon of opportunities to utilize DNA for many data applications. There are still many challenges to its use, including the costs and speed of reading and writing the DNA, which you need to drop further in order to compete with today's electronic storage. I have no doubt that such needs are achievable, and the world will adapt DNA storage systems (unless some as yet-unknown superior system is discovered). If nothing else, think of the enormous energy & real estate savings that will be possible.

On a completely different topic, I want to offer a big shout-out to Sean McKeown of Graphics Packaging for taking on the task of organizing and scheduling IMPI's webinar series. This is a terrific benefit to the Institute; my colleagues on the IMPI Executive and Board, as well as our Executive Director Molly, thank Sean for taking on this task. Nonprofit organizations such as IMPI, benefit enormously by member volunteer participation assisting in various IMPI activities. I know we all have day jobs, but even volunteering a couple of hours a month, assisting IMPI is something for which all of us are grateful.

Best wishes to all,

Bob Schiffmann, IMPI President



Ten Things You Should Do to Get the Most Out of Your IMPI Membership in 2020

Happy New Year, IMPI Members! Please take a moment to do the following to get the most out of your IMPI Membership this year:

- 1) Take our 2020 Member Survey:** This takes less than 5 minutes to complete and all members who [complete the survey](#) by February 7th will be entered into a drawing for a \$50 Amazon gift card.
- 2) Utilize the Member Only Section of our Website.** The Members Only Section contains an archive of the Wave Newsletter and current Membership Roster; new this year, complimentary copies of past Proceedings (excluding the most recent Symposium) and links to the previous webinars. *You can log in at the top right-hand corner of IMPI.org and the new password for 2020 is: IMPI@2020*
- 3) Access the Current Volume of JMPEE & the JMPEE Archive:** Members receive complimentary access to our peer-reviewed scientific Journal of Microwave Power & Electromagnetic Energy. If you need your log in instructions resent to you by our publisher, Taylor and Francis, email alicia.standridge@impi.org
- 4) Follow us on Social Media:** IMPI is very active on [LinkedIn](#), [Facebook](#) and [Twitter](#). We post important updates, upcoming event notices, Corporate Member spotlights and much more every day!
- 5) Attend IMPI Webinars:** IMPI's Spring and Fall Webinar series are FREE for all IMPI members. Corporate members may invite anyone in their company to attend the 4-5 webinars we host each year. Learn more about the next Webinar Series [here](#).
- 6) Join our Solid State RF Energy Section:** Membership in the Section is free of charge for 2020. You can learn more about the Section [here](#) and contact alicia.standridge@impi.org to join the Section.
- 7) Take Advantage of Member Pricing to the Symposium, Fall Seminar & Partner Events:** IMPI members receive discounted pricing (typically \$100 off the standard pricing) for all IMPI Events. Stay up to date with the latest IMPI Events and Partner Events by visiting our [Calendar of Events](#).
- 8) Send Us Your Job Listings:** Our new website features a Job Listings section. If your company has a job opening in the microwave/RF field, send your listing to info@impi.org for inclusion on our site – free of charge.
- 9) Send Us Your Member News:** Have you recently received an award? Published a book? Celebrated a personal or professional anniversary? The Wave Newsletter is always looking for content for our Member News section. Send your accomplishments to info@impi.org for inclusion in a 2020 edition of *The Wave*.
- 10) Advertise with Us:** In addition to Sponsorship opportunities at our events, IMPI now offers our members banner advertisement space on IMPI.org and in our newsletter. For rates, contact molly.poisant@impi.org

SAVE ON CREDIT CARD FEES BY MAKING PAYMENTS TO IMPI VIA WIRE/BANK TRANSFER OR CHECK

Effective January 1, 2020, the IMPI Online Store now charges a nominal processing fee (~2.5%) for all credit card transactions over \$100. You may pay your membership dues and event registrations FREE OF CHARGE by WIRE TRANSFER, BANK TRANSFER or CHECK. Contact alicia.standridge@impi.org if you would like more details.

IMPI 54 Symposium Acceptance Notices Go Out February 14th; Full Program Released March 1st

Over 45 abstracts have been received, and 14 exhibitors confirmed, for the 54th Annual Microwave Power Symposium (IMPI 54) to be held June 15-17, 2020 at the historic DeSoto Hotel in Savannah, Georgia, USA; the Solid State RF Energy Workshop and Section Business Meeting will take place at the same venue on June 18th. A record number of student abstracts have been received this year. Many thanks to new Corresponding Board Member, and Student Competition Chairman, Dr. Candice Ellison for her hard work on increasing student submissions.

The Technical Program Committee, under the leadership of Dr. Graham Brodie (University of Melbourne) is currently reviewing the abstracts. Acceptance notices will go out on Friday, February 14, 2020. The full program will be released by March 1, 2020. Regular updates can be [found here](#) in the interim.

The early bird member registration rate of \$645 is available through March 15th. After that date, the rates will increase by \$100 so [register as soon as possible](#). Hotel rooms at the DeSoto Hotel are available for \$159 and you can book your room directly using [this link](#).

Muegge GmbH will serve as the Platinum Sponsor; Ferrite Microwave Technologies and Crescend Technologies return as Silver Sponsors. Leanfa will serve as the VIP Reception sponsor. Anyone interested in a sponsorship is asked to contact molly.poisant@impi.org by March 1st.

The following companies are confirmed exhibitors for IMPI 54, thus far: 3DRFE Corp., Crescend Technologies, Ferrite Microwave Technologies, Leanfa, Mini-Circuits, MKS, Muegge GmbH, Odyssey Technical Solutions, pinkRF, PSC, Richardson Electronics, Rogers Corporation, SAIREM and WavePIA. A limited number of Exhibition Packages are still available for purchase; please contact Molly for more details.

Stay up to date with the latest Symposium news [on our website](#). Learn more about what Savannah, Georgia has to offer [here](#).



Solid State RF Energy Section Update

by Dr. Klaus Werner, Section Chairman

Section Workgroups on “Tagging” and “PA Roadmap” in Operation

Two workgroups have commenced operation: “Tagging” is working on a formal language to describe a microwave ovens food load in order to exploit the benefits that solid-state driven microwave ovens provide on “any” pre-packaged food item.

The “PA Roadmap” workgroup will revisit earlier technology forecasts and update the predictions on what a power amplifier should look like and how it should behave for the coming years.

Section Membership

The Section continues to recruit new members. Membership is open to any IMPI member and there is no fee to participate in 2020. Those interested in joining the Section should email alicia.standridge@impi.org

Section Web page

The Section webpage is up and running and we will add content continuously. Make sure you [stop by to see it](#) developing. Also, if you and/or your company would want to place non-commercial, tutorial or RF Energy related “nice to know” on our web page or Events Calendar, please contact alicia.standridge@impi.org with the details.

Section Meeting

The Section will host a “Solid State Cooking” Workshop from 8am-12pm on June 18th at the DeSoto Hotel in Savannah. You may register for this while registering for the IMPI 54 Symposium [here](#). Also, our Section luncheon and Business Meeting will take place that afternoon and conclude by 3pm.

IMPI Welcomes Our New Corporate Members!



CALENDAR OF EVENTS

IMPI's Calendar of Events is [available here](#).

If you have an event you would like to feature on our Calendar, please send your event details to info@impi.org by the 15th of the month.

PARTNER NEWS

Our friends at *The Spoon* are hosting “**Customize: The Food Personalization Summit**” in New York City on February 27th. IMPI members will receive a 15% discount on registration (use discount code: IMPI15). You can learn more about this [event here](#).

Our friends at the University of Nottingham are hosting a “**Total Food 2020**” conference from April 15-17, 2020. Additional details are available [here](#).

The **4th Global Congress on Microwave Energy Applications (4GCMEA)** will take place August 17-20, 2020 in Chengdu, China. IMPI members are encouraged to review the [2nd Call for Papers](#) and [Sponsorship/Exhibition opportunities](#). IMPI has five members serving on the Technical Program Committee for 4GCMEA: Dr. Ray Boxman, Dr. Graham Brodie, Dr. Ulrich Erle, Dr. Yang Jiao and Dr. Klaus Werner; Mr. Roger Williams will serve as our Chairman of the TPC for the 4GCMEA.



MEMBER SURVEY

Please don't forget to take our [IMPI Member Survey](#)! This information will be used to update our priorities, strategic plan and future programming. Five minutes of your time could win you a \$50 Amazon gift card! The winner will be announced via our Social Media platforms on February 8th.

NEWS FROM AROUND THE WEB

Integrating pyrolysis and ex-situ catalytic reforming [by microwave heating](#) to produce hydrocarbon-rich bio-oil from soybean soapstock

Food Technology Editors Predict [Trends for 2020](#)

Miele Shipping the Dialog, Their Oven With [Solid State Cooking](#) Tech, to 20 Countries

A microwaveable liquid [food packaging](#) innovation

In 2020, we would like to resume our MEMBER NEWS, MEET THE MEMBER & ASK THE EXPERT content. Please consider sending items, to info@impi.org so that we can share with the rest of our membership!

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