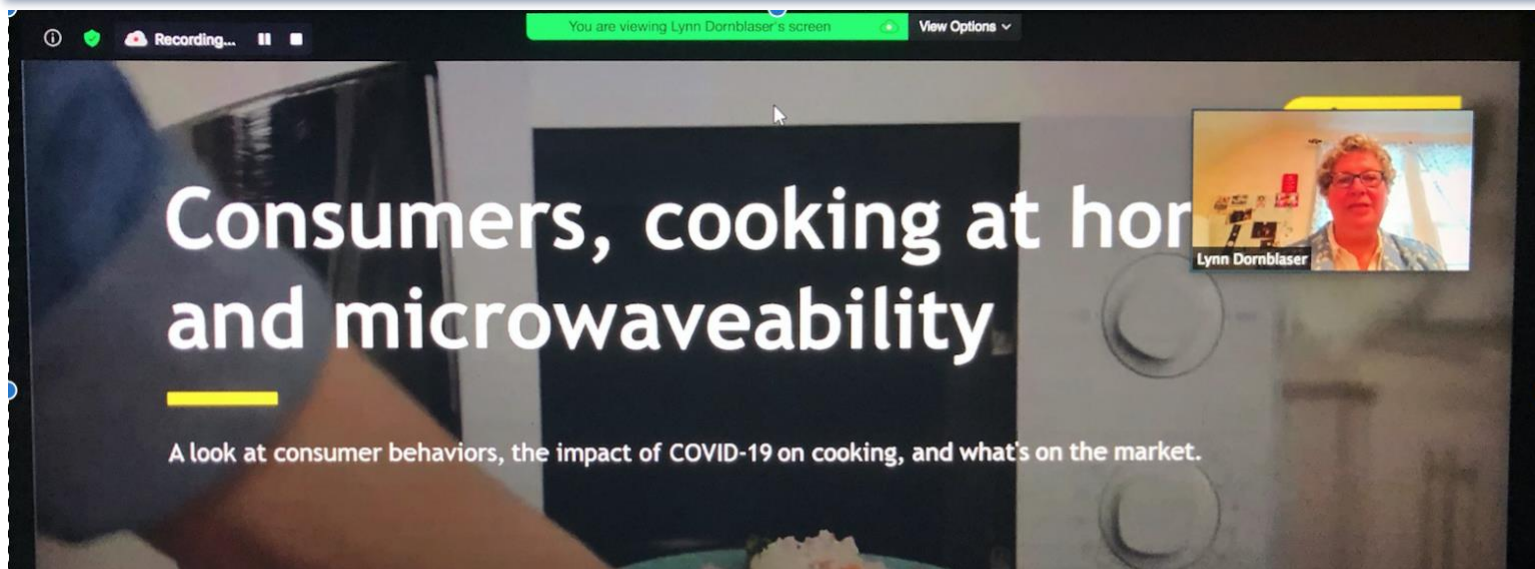


THE WAVE



The newsletter publication of the International Microwave Power Institute

November 2020



IMPI Hosts Virtual Fall Seminar, Solid State RF Energy Section Meeting & Fall Webinar Series

October was a busy month for IMPI! Beginning on October 8th, IMPI hosted the first of a 2-part Fall Webinar Series, with *“Intellectual Property Basics and Best Practices for Innovators”* led by Sara Fish and Karan Jhurani, associates at Fish & Richardson P.C. Part two of the series, *“Best Practices in Developing Safety Warnings and Labels”* was instructed by Dr. Gerald M. Goldhaber, President & CEO of Goldhaber Research Associates LLC, on October 15th. Dr. Sean McKeown of Graphic Packaging International organized the webinars and Dr. Eric Brown of Conagra Brands moderated the series, which was also sponsored by Conagra Brands. These webinars are recorded and available to all IMPI members – free of charge – on the IMPI Member Only page.

On October 20-22, 2020 IMPI hosted our Fall Seminar, *“The New Normal: Navigating the Microwavable Food Industry.”* Sixty-three attendees participated in the three-day virtual event, which included twelve presentations, three panel discussions and multiple meet-and-greet opportunities. Special thanks to Dr. Sean McKeown, Mr. Bob Schiffmann and Dr. Klaus Werner for serving as moderators for the event.

Finally, on October 23rd, the Solid State RF Energy Section held their annual business meeting and elections. The Section will hold the final educational opportunity for IMPI members this calendar year on December 10th. Additional details on the Section’s plans can be found on page 4 of this newsletter.

As we begin to prepare content for 2021, please email molly.poisant@impi.org if there is a topic or speaker you would like IMPI to consider.

IN THIS EDITION OF THE WAVE

IMPI Fall Seminar & Webinars.....	1
IMPI 55 Call for Papers.....	2
President’s Message	2&3
Solid State RF Energy Section.....	4
Member News.....	4
JMPEE Vol 54, Issue 4.....	5
News from Around the Web.....	5
Calendar of Event.....	6
Connect with IMPI.....	6

Cover Photo: Lynn Dornblaser of Intel, keynote speaker at IMPI’s Fall Seminar (10/20/20)

IMPI 55 Symposium: First Call for Papers

The Technical Program Committee (TPC) for [IMPI's 55th Annual Microwave Power Symposium \(IMPI 55\)](#) announced the first Call for Papers on October 1, 2020. **The deadline for abstract submission is January 15, 2021.**

IMPI 55 will be held June 28-30, 2021 at the DeSoto Hotel in Savannah, Georgia, USA. The IMPI Board of Governors continues to monitor the COVID-19 pandemic, advice of the CDC and WHO, and will relay any decisions about the event platform in the coming months. Dr. Graham Brodie, University of Melbourne, will serve as Chairman of the TPC.

Sponsors for IMPI 55 include: **Muegge GmbH** (Platinum Sponsor); **Microwave Techniques LLC** (Silver Sponsor); **Leanfa srl** (VIP Reception Sponsor) & **Odyssey Technical Solutions** (Group Dinner Sponsor). Interested in sponsoring? Contact molly.poisant@impi.org for more details.

PRESIDENT'S MESSAGE

When I was a teenager, I was an avid reader of science fiction. Two stories have remained with me these many years, and while I don't remember the details, here they are:

A researcher places ants into a container, along with some extraneous materials. He then places a lid on the container, which is then slowly lowered into the box, rather like a piston. He repeated the experiment several times, crushing the container's ants, until, to his astonishment, the ants currently in the box, built a device that stopped the lowering lid, thereby saving the ants' lives.

A man is in a desert, no water anywhere, but he must quench his thirst or die. So, he reaches into his backpack, pulls out something resembling a cup, holds it in the air, and it fills with water, which he drinks and goes on his way.

You can imagine my amazement when I came across two articles recently that brought me back to my teenage years and these two particular stories.

- In October, an article, "Ants observed using sand as a tool to stop them drowning" <https://www.iflscience.com/plants-and-animals/ants-observed-using-sand-as-a-tool-to-stop-them-drowning/>, described experiments in which ants were placed in containers of sugar water while drinking; then, the experimenters added a surfactant that caused the ants to drown. The experimenters had placed piles of sand at some distance from each container, so the ants, outside the container moved the sand to the containers building a mound so the sugar water drained to those outside ants. While it has always been thought that only vertebrates are capable of using tools, now we have to add ants, and perhaps other insects, and who knows what else. By the way, there is a great video of the ants in action. Additionally, I just watched a video about intelligence in an octopus.
- As to water from desert air, the cup device described in my science fiction story still doesn't exist, but a number of exciting methods are in the works. In 2017, for example, the Israeli Times described a technology that was developed capable of producing 4 gallons of drinkable water for every kilowatt consumed. There have been other advances since then. This is an important technology, as noted in the statement from the Israeli Times, "At the current consumption rate, by 2025, two-thirds of the world's population may face water shortages, the WWF estimates. Roughly 1.2 billion people — almost one-fifth of the world's population — live in areas of water scarcity, according to the United Nations Department of Economic and Social Affairs."

PRESIDENT'S MESSAGE CONTINUED

But, with all of these mind-blowing events, I'm writing this because we live in a world in which information is being drowned by misinformation and disinformation. (Misinformation is false or inaccurate information that is communicated regardless of an intention to deceive. Examples of misinformation are false rumors, insults, and pranks. Disinformation is a species of misinformation that is deliberately deceptive, e.g. malicious hoaxes, spearphishing, and computational propaganda. The principal effect of misinformation is to elicit fear and suspicion among a population.) (Wikipedia)

Science is the antithesis of this; it is an ever-ending search for truth. In science we depend upon the availability of information, 'facts', not 'alternative facts'. Truth is judged on the basis of Enlightenment ideas of reason and more or less objective "evidence", i.e. facts. We pursue this "truth" via the scientific method, which involves formulating hypotheses, via induction, based on such observations; experimental and measurement-based testing of deductions drawn from the hypotheses; and refinement (or elimination) of the hypotheses based on the experimental findings. (Wikipedia)

What I find horrifying is how many of our fellow Americans don't believe in, or don't trust science, and these anti-trust opinions are being reinforced on a daily-basis by the megaphones of social media. A recent episode of the podcast "Hidden Brain" (host Shankar Vedantam - NPR) discussed moral convictions, which we generally think of in positive terms; yet, he showed that they can have a negative side: a person with strong moral convictions may not believe in science or experts; after all, if the person believes something is true, she/he not only doesn't need someone saying the belief is false, she/he probably resents it, and feels that person is wrong. A simple example is the many people who believe that eating microwaved-foods causes cancer; no amount of information is likely to change that person's opinion. Further, given social media, this person can spread this false-idea like wildfire. Our task is to use all means, including social media, to counter this misinformation & spread the truth. IMPI is actively publishing dedicated pages on our website to answer consumer questions about microwave ovens, and to open their eyes to the many other uses of microwave heating, many of which touch and may even save their lives.

I am writing this about 11 days before Thanksgiving, and what a strange holiday this will be for many of us. Personally, my wife and I will be dining alone in our home, but celebrating with our children and grandchildren (whom we haven't seen in person since February) via Zoom. However you choose to celebrate, have a wonderful time!

Bob Schiffmann, IMPI President



Thank You for Your Support this Year!

Despite the hardships imposed by the global pandemic this year, you have renewed your memberships to IMPI in record numbers! Membership dues are critical to the livelihood of our organization. If you haven't renewed yet, please make every effort to do so by December 31st. We are thankful for each of you and grateful for your support!

Stay safe,

Molly & Alicia



IMPI SOLID STATE RF ENERGY SECTION

The Solid State RF Energy Section held their annual business meeting and elections on Friday, October 23, 2020. Highlights of the meeting are as follows:

- Annual business meeting section held:
 - Section running well with 35 members from 25 different companies.
 - Leadership team re-elected (Chairman Klaus Werner, Deputies John Mastela (US), Sanghun Lee (APAC), Klaus Werner (EMEA), Treasurer: John Gerling)
 - The secretary post is vacant; if interested, please contact any team members
 - annual plan for activities/ presence and workshops approved
- The tagging initiative led by Steve Drucker is going strong. Language elements are defined. A considerable number of company representatives from within IMPI are working together. If interested, please contact Steve Drucker.
- The section will organize a virtual workshop beginning of December to presenting a more detailed view on the tagging technology as well as an update on the latest about the solid state RF technology and -industry.
- Membership in the Section is open to all IMPI members; there is no additional fee to join. Those interested in more details should contact alicia.standridge@impi.org

Member News

Dr. Marilena Radoiu and Dr. Paolo Veronesi have asked us to share this opportunity with IMPI Members. They are the invited editors for an issue of *Technologies*; there is an extended deadline for submission and they may publish three papers with the fees waived (1000 CHF normal fees). Additional details are available here: https://www.mdpi.com/journal/technologies/special_issues/Microwave_Technologies

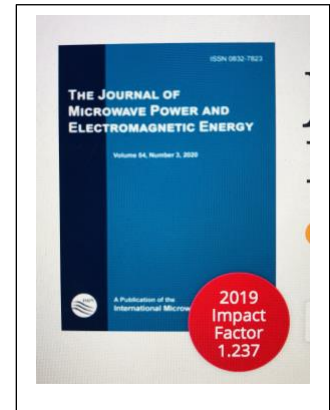
New IMPI member, Dr. Josip Simunovic's company was featured in this article: Raleigh food tech company opens 'first of its kind' [precision-scale aseptic food facility](#)

We continue to wish former IMPI President & current IMPI Fellow, Bernie Krieger, a speedy recovery!

Do you have professional or personal news you would like to share in this section? Please send your submission to molly.poisant@impi.org by December 15, 2020 for inclusion.

JMPEE Volume 54: Issue 4 Available in Late December

Access to Volume 54 (and the entire JMPEE Archive) is available to members as part of your annual membership fee. Please contact alicia.standridge@impi.org if you need your log in information resent to you. Here is the list of papers that will appear in Volume 54, Issue 4:



Editor's message: The challenge of virus sanitizing with microwaves
by Juan Antonio Aguilar-Garib.

Detection of an emerging contaminant in water by dielectric properties in microwave range
by Edel-Serafin Hernandez-Gomez, Jose-Luis Olvera-Cervantes, Alonso Corona-Chavez, Benito Corona-Vasquez, Tejinder-Kaur Kataria, and Maria-Elena Sosa-Morales.

Dielectric properties, polarizability and molar refractive index of some VSrFeZnO glasses
by Ehab Moustafa Ahmed and Bushra Al-hasni.

Calculation of electric field and temperature distribution within a microwave oven with realistic geometric features using numeric simulations
by Zhengkai Yi, Weiqiang Qiu, Yang Jiao, Kyung Ho Row, Yu-dong Cheng, and Yinzhe jin.

Effect of input microwave power and insulation on microstructure and tensile properties of cast Al 7039 alloy produced at 2.45 GHz
by Radha Raman Mishra and Apurbba Kumar Sharma.

A Dynamic Impedance Matching Algorithm of Three-stub Tuners Based on Equivalent Circuit Analysis
by Shimiao Lai, JingxinQiao, Nouman Rasool, Kang Li, Huacheng Zhu, and Yang Yang.

News from Around the Web

The [green packaging solution](#) that won't pollute

[COVID-19 and our food](#): Temporary change or a new normal?

Tumour treatment improves [with new technology](#) at Windsor Regional Hospital

Researchers prove [titanate nanotubes composites](#) enhance photocatalysis of hydrogen

[Microwave ablation](#) 'safe and effective technique' at treating large benign thyroid nodules

Raleigh food tech company opens 'first of its kind' [precision-scale aseptic food facility](#)

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.

The International Microwave Power Institute

PO Box 1140

Mechanicsville, VA 23111

info@impi.org www.impi.org

For the Latest News - Follow Us on Social Media

