

# THE WAVE



*The newsletter publication of the International Microwave Power Institute*  
September 2022



## **IMPI Fall 2022 Seminar Headed to Round Rock, Texas, USA in early November; Odyssey Technical Solutions to Host**

The International Microwave Power Institute will hold their Fall Seminar, **“The Future of Microwave/RF: Fundamentals, Features & Food Safety”** from November 1-3, 2022 at the Kalahari Resort in Round Rock, Texas. The event is hosted by longtime Corporate Member, Odyssey Technical Solutions.

On Tuesday, attendees will take part in a tour of Odyssey, followed by a Welcome Reception at the Kalahari Resort, where the remainder of the program will take place. Wednesday will feature a series of presentations and a workshop:

### **The Future of Food: Data Driven Innovation and Emerging Trends**

Kat Shear, Director of Innovation & Insights, Datassential

### **New Technology for Consumer Microwave Ovens**

Eric F. Brown, Ph.D., Principal Research Scientist, Conagra Brands

### **Advances in Solid State Cooking & the Advent of the Smart Kitchen 3.0**

John Mastela, Vice President of Sales and Marketing, EliteRF

John F. Gerling, President, Gerling Consulting

### **Introduction to Nestlé Research on Sustainable Packaging Solutions**

Gerhard Niederreiter, Ph.D., Head of the Institute of Packaging Sciences, Nestlé

### **Regulatory Update from the USDA Food Safety Inspection Service**

Selena Kremer-Caldwell & Steling Brown, USDA-FSIS

### **Workshop: Industrial Food Safety Challenges and Solutions: Basic Principals & Case Studies**

Mr. Sylvain Tissier, SAIREM

A Group Dinner will take place Wednesday evening.

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*Cover Photo: The Kalahari Resort & Conventions, Round Rock, Texas*

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## IMPI Fall Seminar Continued

Thursday, attendees will hear from three presenters before the conference concludes at noon:

### **Application of Microwaves to Vertical Vessels for Processing Food and Industrial Products**

Lou A. Honary, Ph.D., President, Environmental Lubricants Manufacturing, Inc.

### **Ensuring Microbiological Safety and Quality through Microwave power: Food and Laundry Applications**

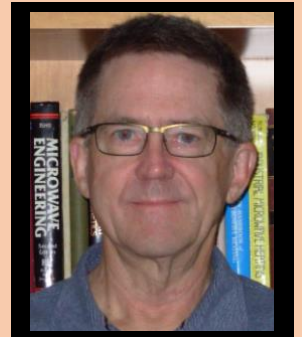
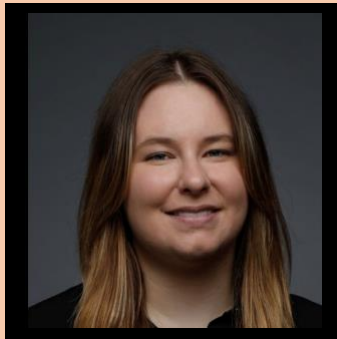
Onay Dogan, Ph.D., Postdoctoral Research Investigator, Texas Tech University

### **A New Fix for Food Safety**

Don Stull, President, MicroZap Inc.

Registration is \$650 for IMPI Members, \$750 for Non-Members, \$400 for Odyssey employees and \$200 for students and includes: all sessions, tour of Odyssey, Welcome Reception, two continental breakfasts and networking luncheons, three coffee breaks and post-event access to all presentations. **REGISTER BY OCTOBER 3<sup>rd</sup> FOR THE BEST RATE!**

Hotel rooms are available at the Kalahari Resort at the IMPI Group Rate of \$185 per night if you reserve by October 3rd! Abstracts and more details are available here. See you in Texas!



*From top, left to right: K. Shear, E. Brown, J. Mastela, J. Gerling,  
G. Niederreiter S. Tissier, L. Honary, O. Dogan, D. Stull, Kalahari Resort.*

## PRESIDENT'S MESSAGE

In late 2019 and early 2020, China Association for Microwave Power Applications (CAMPA) was gearing up for hosting in-person the 4<sup>th</sup> Global Congress on Microwave Energy Applications (4GCMEA) in the late summer. My wife, Sally, and I were making travel plans and looking forward to visiting dear friends in Chengdu we have known since our daughters were in grade school. The Congresses, hosted every four years by one of the MAJIC associations, are important events for the microwave and RF applications community as they provide a unique opportunity to showcase the latest developments around the world. The first Congress, "The New Flame for Humanity," was hosted in 2008 by Japan Society of Electromagnetic Wave Applications (JEMEA, the "J" in MAJIC) at Lake Biwa, Japan. Four years later in 2012, 2GCMEA was hosted jointly by IMPI and the Microwave Working Group (the "I" and "M") at Long Beach, California, USA, and in 2016 we all met again at Cartagena, Spain for 3GCMEA hosted by AMPERE (the "A"). All of these events were world-class and tough acts to follow, so CAMPA (the "C") certainly had its work cut out.

Then COVID descended upon the world and completely upended the planning of just about every in-person event on the planet! The organizing committee at Sichuan University, chaired by Prof Kama Huang, were presented with very difficult decisions about whether to proceed as planned, transition to a virtual or hybrid event, or postpone altogether. Advice was sought from the other MAJIC associations and the decision was made to postpone for one year. As we now know, in 2021 world-wide COVID rates ebbed and surged while international travel restrictions held steady. Once again, 4GCMEA was postponed. We all thought that certainly by 2022 an in-person event could finally be held. But alas, faced with continued uncertainty, the decision was made to organize 4GCMEA as a virtual event.

And what an event it was! The local organizing committee did a marvelous job with all aspects of 4GCMEA, including the website, registration, technical program, teleconference management, and coordinating the multitude of speakers, session chairs, and attendees. During the sessions I attended I saw nearly 400 participant names, which may be well more than could have been expected if 4GCMEA was held in-person. Collectively, the technical papers presented were IMHO among the highest quality of any of the previous Congresses. My only regret was waking at 03:00 hours to attend or chair a session, but the reward was well worth that small effort!

Congratulations to Prof Kama Huang for a successful Congress and his perseverance over the years to overcome the challenges. Perhaps then it comes as no surprise that he was awarded the fourth Ricky Metaxas Pioneer Award, recognizing his outstanding achievements in the development of microwave and RF technologies. An honor well-deserved!

The planning for 5GCMEA is now underway, returning to Japan in 2024 to repeat the cycle of MAJIC hosts. Having missed 1GCMEA in Lake Biwa (a long "lost passport" story!), Sally and I are already making travel plans to attend and spend an extended holiday. I'm looking forward to seeing all of you there!

Finally, I want to express my sadness over the recent passing of Steve Drucker. Many of you knew him, some very well, as he had a profound impact on the consumer microwave market as a developer of technologies and influencer of trends. I always enjoyed Steve's company, pondering with him high level "what ifs" and "why nots" before digressing to sharing our passion for and latest exploits with bicycles. You'll be missed, Steve. Take care. I know you will.



*John F. Gerling*  
*President, IMPI*





## IMPI SOLID STATE RF ENERGY SECTION

### **In Memoriam: Steve Drucker**

*Dr. Klaus Werner, Chairman, IMPI Solid State RF Energy Section on the passing of IMPI SSRFE Member*

Steven was a visionary way ahead of his time. Steven Drucker's expert cooking intelligence patents (truecook +) have been embedded in over two million microwave ovens. His seminal microwave innovations have been cited by over 123 subsequent patents. Steve was the chef proprietor of two nationally recognized restaurants and a founding member of the online food community Chowhound. His judgement about the quality of restaurants was infallible and has helped numerous crowds to excellent food experiences.

An IMPI member since 1996, Steve has contributed to the organization through regular insights into consumer behavior and trends. He was the natural leader for a recent working group within IMPI developing a universal language to code food properties. Knowing the details of the food to cook, a new type of microwave oven could then realize the mantra of "Push button, cook food". It is very sad that he could not see this technology through. We will miss him.

**Annual Business Meeting:** November 1<sup>st</sup>, 2pm-4pm CST, at Odyssey Technical Solutions, Round Rock Texas. The Section will hold their Annual Business Meeting of section with amongst others the re-elections of officers (chairman, secretary (vacant), treasurer, regional representatives). Section member (companies) may nominate candidates for officer positions.

The Agenda of the Business Meeting shall include:

- State of Union
  - Membership
  - Financials
  - Activities past year
    - Workshops/MML/"roadmap"
- Election of Officers
- Proposals Goals /Plans/Budget for 2022/2023
- Other business

Membership in the Section is open to all IMPI Members. Please contact [alicia.standridge@impi.org](mailto:alicia.standridge@impi.org) to RSVP for the meeting and/or to join the Section.

### **MEMBER NEWS**

Congratulations to IMPI Corporate Member **Symphony Microwave Technologies, LLC**. They have been selected to provide 53 high-power WR650 waveguide isolators for use in the Continuous Electron Beam Accelerator at Thomas Jefferson National Accelerator Facility (Jefferson Lab). The devices will be installed in microwave systems connecting high power klystrons to superconducting RF cavities.



IMPI Corporate Member **MKS** has developed and written a handbook in Semiconductor Processing Technology, free down-loadable, - the only requirements are your name, email, and company's name. The link is <https://www.mks.com/mks-handbook>



## In Memoriam – Steve Drucker



The small community of microwave heating technologists lost one of its most important members when Steven Drucker passed away a few weeks ago. Only weeks previously Steven had attended the 56<sup>th</sup> Microwave Power Symposium with his many friends who no doubt are deeply saddened by the loss. Steve was a regular attendee of annual event and often spoke about an exciting development in consumer microwave cooking. As a highly regarded expert in intelligent cooking protocols for consumer and commercial microwave ovens, Steve patented several innovations that were licensed to major manufacturers of microwave packaged goods and appliances. One such invention, TrueCookPlus, was embedded in over two million microwave ovens sold in the US.

Mr. Drucker earned an engineering degree from Cornell University while simultaneously working his way up the ladder in the restaurant industry from vegetable cutter to chef at a noted Italian restaurant. He went on to become chef-proprietor at two nationally acclaimed Italian restaurants in the Atlanta area that were frequented by well-known celebrities, politicians and sports personalities. These beginnings provided a foundation and understanding of consumer preferences for food and dining that led to his work in microwave cooking. Steve was a long-time member of the International Microwave Power Institute and the International Housewares Association, and he sat on the advisory board of LTH Forum, the largest on-line food community in Chicago.



One of Steve's most recent endeavors was an initiative to develop a control algorithm for microwave ovens that could help microwave food product companies and microwave appliance manufacturers realize the advantages of solid state RF technology for microwave cooking. By his mantra "Push button, get food," Steve recognized the trends in consumer preferences for smart technologies in the home kitchen. His solution was the Microwave Mark-up Language, dubbed MML, an open-source programming protocol that enables a microwave oven to recognize and perfectly cook a food item placed inside.

Steve Drucker was truly a visionary who not only understood and recognized trends in consumer behaviors, he anticipated their preferences and developed successful products and technologies to satisfy them. The microwave heating community will miss Steve dearly.

*John F. Gerling*

*President, International Microwave Power Institute*

I first met Steve Drucker in 2014 while at an IMPI Symposium in New Orleans where Steve was presenting on food safety. Over the years, Steve has been an integral part of our IMPI family. While others will remember Steve for his technical contributions to the Mw/RF field - and they were vast - I'll remember him most for his larger than life personality, his willingness to go the extra mile and his unique ability to find IMPI members the best restaurant in town to enjoy a great meal and a nice glass of wine!

Just over a year ago, as we were mourning the loss of our late President Bob Schiffmann, Steve made it a point to check in with me regularly. Our conversations would often start by talking about work and traverse into family, travel, home projects and food. I'm so grateful for those talks.



I could always count on Steve and his commitment to IMPI. He was warm and funny, generous with his time, and a true visionary. His loss leaves an immeasurable void at IMPI – one that would be impossible to replace – but we stand committed to carrying out the work he started and his vision for the Smart Kitchen 3.0. Our continued thoughts and prayers are with Deb, their extended family and friends. Rest easy, my friend.

*Molly Poisant*

*Executive Director, IMPI*

## Call for Papers Released for 57<sup>th</sup> Annual Microwave Power Symposium (IMPI 57)

The first **Call for Papers for the 57<sup>th</sup> Annual Microwave Power Symposium** (IMPI 57) was released on September 1, 2022. IMPI 57 will be held at Curtis Hotel in Denver, Colorado, from June 27-29, 2023. The deadline for submissions is January 20, 2023.

Registration for IMPI 57 will open in early November. You can secure your hotel room at the Curtis Hotel now at the IMPI group rate of \$195 per night plus tax. In-room wifi is included in the rate.

Dr. Candice Ellison, of the USDA-ARS will Chair the Technical Program Committee. Ellison will be joined by Dr. B. Reeja Jayan, of Carnegie Mellon University, who will serve as the Vice Chair. Stay up to date with the latest IMPI 57 news here.



### NETL Hosts IMPI's Fall 2022 Webinar Series

IMPI's Three-Part Fall 2022 Webinar Series on the **Role of Microwaves in Industrial Decarbonization** is underway. IMPI has partnered with NETL for this series of one-hour webinars, that are free-of-charge and open to the public. You can [register here](#).



Part I, held September 13<sup>th</sup>, featured two presentations:

#### ***NETL's Center for Sustainable Fuels and Chemicals – Its role in supporting Industrial Decarbonization.***

The Instructor was Dr. Charles Damianides, Executive Director, Center for Sustainable Fuels and Chemicals at National Energy Technology Laboratory (NETL)

#### ***Decarbonization of industrial processes using Microwave chemistry***

Instructed by Dr. Christina Wildfire, Research Scientist at National Energy Technology Laboratory (NETL)

#### ***Part II: Using Microwaves to Replace Carbon Based Energy Sources in Industrial Heating Applications***

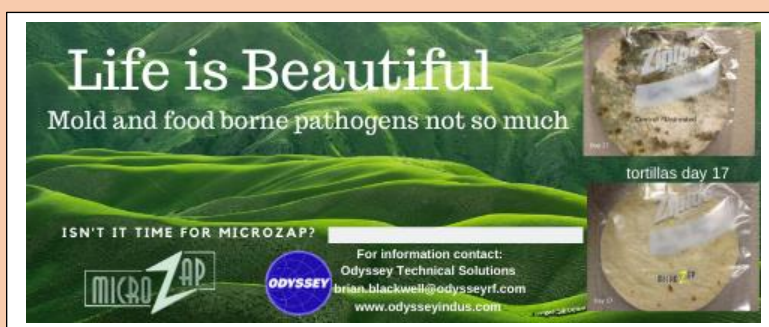
Instructed by IMPI Member, Dr. Ken Kaplan, President and CEO of Cellencor Inc., will take place on October 11<sup>th</sup> from 11am-12pm ET.

#### ***Part II: Powering the Green Chemistry and Hydrogen Revolution***

Instructed by Alex Shanosky, Director of Business Development, Transform Materials and Nathan Ashcraft, VP of Research and Development, Transform Materials, will be held November 10<sup>th</sup> at 11am.

If you missed Part I and would like to watch the recording, please contact [molly.poisant@impi.org](mailto:molly.poisant@impi.org) for a link.

IMPI wished to express our gratitude to IMPI Member, Dr. Pranjali Muley of NETL and Dr. Sean McKeown of Graphic Packaging International for their hard work on this series.



## JMPEE Impact Factor Rises to 1.850, Had Over 11,000 Downloads in 2021

IMPI's scientific peer-reviewed **Journal of Microwave Power & Electromagnetic Energy (JMPEE)** had another stellar year, under the leadership of Editor-in-Chief, Dr. Juan Aguilar Garib, University of Nuevo Leon (Mexico). Articles were downloaded 11,000 times in 2021; nearly 2,600 institutions across North America, Asia, Europe, Central and South America, the Middle East, Australia and Africa have access to the Journal.

The Impact Factor rose for the sixth year in a row, to 1.850 in 2021 compared to 1.325 the year prior. This is the largest increase in the six years JMPEE has been published by Taylor & Francis (T&F). T&F is now the third most visited publisher website worldwide.

IMPI Member, Dr. Eric Brown of Conagra, had the most downloaded article over the past 12 months: *"Comparing nutritional levels in a commercially-available single-serve meal using microwave versus conventional oven heating."* Brown's article is Open Access and was downloaded 1,075 times.

As a reminder, access to JMPEE is available as part of your IMPI Membership. To receive a username & password, please contact [alicia.standridge@impi.org](mailto:alicia.standridge@impi.org)

## PARTNER EVENTS

Our friends at the Smart Kitchen Summit will present **SKS 2022 – Invent**, October 12-13, 2022. This 2-day virtual event will feature a presentation by IMPI's Solid State RF Energy Section on day 2. [Learn more about SKS 2022 here.](#)

The **AMPERE 2023** conference will be held in Cardiff, United Kingdom in September of 2023. Exact date TBD. More details, and Call for Papers, coming soon here: [www.ampere2023.com](http://www.ampere2023.com)

## CALENDAR OF EVENTS

Stay up to date with IMPI Events by visiting our [Calendar of Events page](#). If you have an event you would like to add to the Calendar, please contact [molly.poisant@impi.org](mailto:molly.poisant@impi.org)

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