

THE WAVE



The newsletter publication of the International Microwave Power Institute

February 2024



IMPI Prepares for 58th Annual Symposium in Suburban Washington, DC this May; Program Released on March 4th.

Following a very successful Call for Papers, which netted 48 submissions, IMPI 58's Technical Program Committee is currently reviewing abstracts. Acceptance Notices will be sent via email by February 23, 2024. IMPI 58, to be held May 29-31, 2024, at the Hyatt Regency Reston in suburban Washington, D.C., USA, will feature two keynote addresses, invited papers, oral and poster presentations, a panel discussion as well as a Student Competition. Optional Short Courses will be offered in advance of IMPI 58: [Short Course I: MW 101: Mw/RF Technology](#) and [Short Course II: Solid-State, RF Energy & Machine Learning: Case Studies & Demonstration](#)

In addition to the robust content, IMPI 58 will provide excellent networking opportunities via an Exhibitor Showcase, Welcome Reception, two continental breakfasts, two luncheons, multiple coffee breaks, and a Group Dinner at a local restaurant. Electronic conference Proceedings are included in the registration fee.

At present, there are over forty (40) registrants; roughly one-hundred-and-twenty (120) attendees are expected over the three-day event.

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Cover Photo: Atrium of Hyatt Regency Reston, venue for IMPI 58

PRESIDENT'S MESSAGE

I am humbled to have the opportunity to present a Keynote Address at the [5th Global Congress on Microwave Energy Applications](#) (5GCMEA) to be held this coming July at Kyushu University in Fukuoka, Japan. I hope to see many of you in the audience! The general topic of my talk is IMPI's past, present and future influence on the advancement of microwave and RF applications. As I prepare my abstract for submission, I am finding troves of fascinating tidbits about IMPI's origins. A little-known fact about IMPI's annual Microwave Power Symposium is that the first was not actually organized by IMPI. In fact, IMPI did not even exist at the time! Attendees of the 1966 Symposium on Microwave Power, held at University of Alberta in Edmonton, Canada, conceived the idea of an association dedicated to applications of microwave power during a breakfast meeting. A short month later they held the first meeting of the IMPI Board of Governors to begin laying a foundation for the institute.

Indeed, IMPI was the first known professional association for microwave and RF energy applications. Microwave technology certainly was not new at the time, though. Shortly before the formation of IMPI, the IEEE came into being in 1963 as a merger of the American Institute of Electrical Engineers (formed in 1884) and Institute of Radio Engineers (1912). IEEE's *Microwave Theory and Techniques Society* (MTT-S) was actually formed in 1952 as a professional group of IRE. The interests of these previous associations mainly encompassed microwave theory, microwave circuitry and techniques, microwave measurements, and microwave tubes. Little, if any, attention was paid to applications, thus creating a void that IMPI founders sought to fill.

Since its founding IMPI has been at the forefront of microwave and RF application development and commercialization. At its very beginning IMPI was engaging government authorities on development of standards for hazards and safety, electromagnetic interference, and equipment performance. In 1977 IMPI formed the Cooking Appliance Section (CAS) in response to rapid growth due to the emerging consumer microwave foods and appliance market (later renaming to Microwave Foods Technology and Applications – MFTA). In 1982 the Industrial, Scientific, Medical and Instrumentation (ISMI) Section was formed to serve process developers, equipment manufacturers and academia. IMPI membership totaled over 600 by the mid-1980s!

IMPI is seeing renewed interest and membership activity with emerging applications, most notably those that address global warming and promote green energy. Advancements in solid state technology prompted formation of the Solid-State RF Energy (SSRFE) Section of IMPI in 2019, and most recently IMPI is helping to promote Artificial Intelligence (AI) as a new technology for control of industrial microwave processes and consumer microwave cooking. IMPI is, always has been, and foreseeably always will be the go-to association for professionals and companies interested and involved in applications microwave and RF energy.



John F. Gerling, IMPI President

IMPI 58 Continued

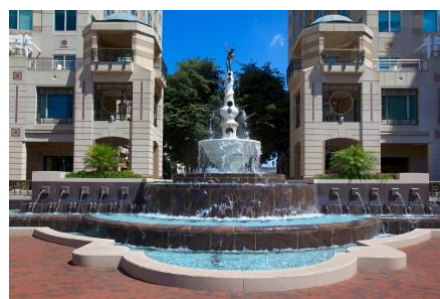
Registration opened last Fall and the rates remain the same as last year. Early Bird pricing for IMPI Professional/Corporate Members is \$675 and Student IMPI Members may attend for \$445. Registration rates will increase, by \$100, to regular registration pricing, effective March 15th so register early for the best rate. Sleeping rooms are available at the Hyatt Regency Reston for a special group rate of \$239 plus applicable taxes, based on availability. *The rooms are selling quickly!*

To date, nineteen (19) of the twenty (20) exhibition booths have been sold. Confirmed exhibitors include: Muegge-Gerling, SAIREM, Richardson Electronics, QWED, Stellant Systems, Microwave Techniques, Symphony Microwaves, Ampleon, pinkRF, Odyssey Technical Solutions, IMPI's Solid State RF Energy Section, WavePIA, Trumpf, Aurora Hydrogen, MKS, 3DRFE, Mini-Circuits, RFHIC, Microwave Amps Limited.

Muegge-Gerling will serve as the Platinum Sponsor of IMPI 58. If your company is interested in exploring a Sponsorship or Exhibition, please review the packages and reach out to molly.poisant@impi.org

The Hyatt Regency Reston, located just six miles from Dulles International Airport (IAD), will be the ideal setting for IMPI's growing Symposium. Anchored twenty miles west of Washington, D.C., the Hyatt sits on a recently completed metro rail line that runs from IAD to D.C., and is part of the acclaimed Reston Town Center, a walkable town square which boasts over 35 retailers, 50 restaurants, a cinema and plentiful outdoor spaces. The last time an IMPI Symposia took place near Washington, D.C. was 2009.

IMPI 58 is led by Technical Program Chair, Dr. Reeja Jayan of Carnegie Mellon University (CMU) and Technical Program Vice Chair, Dr. Ralph W. Bruce, of RWBruce Associates, LLC, and formerly of Vanderbilt University.



IMPI ANNUAL BUSINESS MEETING NOTICE

IMPI will hold its Annual Business Meeting in conjunction with the IMPI 58 Symposium, on Thursday, May 30, 2024, at the Hyatt Regency Reston, at the conclusion of the day's plenary sessions (*tentatively from 4pm-5pm.*) IMPI's Annual Business Meeting will be open to all current, and potential, IMPI Members. In addition to receiving an update from the Institute's various officers, the IMPI Membership will elect Voting Board Members. Please look for an email in April with Candidate Statements and electronic voting instructions.

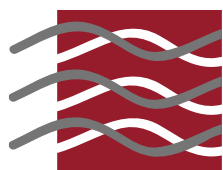
SAVE THE DATE: IMPI FALL 2024 SEMINAR

IMPI will head to suburban Atlanta, October 8-10, 2024, for our Annual Fall Seminar at SAIREM! The two-and-a-half-day event will take place at their facility and include live demonstrations on a wide variety of Mw/RF processes.

Program updates, hotel and registration details will be added to the [Fall Seminar](#)

[webpage](#) in the coming months. *Please note: our January email to Members had an initial Save the Date for mid-September, so please update this date in your calendar.*





IMPI SOLID STATE RF ENERGY SECTION

The SSRFE Section is looking forward to an exciting year 2024 with several firsts and novel activities:

- It will host another “hands-on” [workshop during IMPI 58](#), amongst others also showing artificial intelligence at work in a microwave oven;
- The Section is working on a publication presenting a structured approach towards intelligently choosing either solid state or magnetrons to drive the application;
- A questionnaire is in the works gauging the possibility to compile our collective insights into the RF energy markets;
- It is the intention to deliver a few white papers into an upcoming Microwave Journal reviewing the development of the SSRFE technology.

Membership in IMPI’s Solid State RF Energy Section is open to all current IMPI Members; there are no additional Section fees at this time. If you are interested in joining the Section, please reach out to Alicia.standridge@impi.org

Spring 2024 Webinar Announcement

“Microwave Heated Reactors: Prospects for Efficient and Sustainable Energy”

Instructor: Prof. Reyes Mallada, Universidad de Zaragoza, Spain

Thursday, March 7, 2024, from 11am-12pm ET



The chemical sector, alongside steel production, is recognized as one of the most energy-demanding segments of manufacturing. Confronting critical issues such as diminishing global energy requirements and addressing climate change necessitates innovative approaches, with the electrification of the chemical industry through microwave (MW) heating emerging as an exceptionally promising solution. This webinar examines the current landscape of this technology, its underlying principles, and provides a showcase of successful applications of microwave-heated reactors. It also identifies and discusses the hurdles that must be overcome as we progress with this technology.

Free-of-charge and Open to the Public. [Pre-registration is required](#). Additional Webinars will be held this Fall.

Thank you to Dr. Pranjali Muley of the National Energy Technology Laboratory (NETL) for organizing our 2024 Webinar Series!

Is there a topic or speaker you would like IMPI to consider for an upcoming Webinar? Please send your suggestions to info@impi.org

Journal of Microwave Power & Electromagnetic Energy News

Volume 58, Issue 1 of JMPEE will be available by the end of March 2024.

If you require a new subscription to JMPEE, or have misplaced your log-in details, please contact alicia.standridge@impi.org, and she will reach out to Taylor & Francis, on your behalf!



The latest issue includes the following papers:

Editor's message: Importance of peer-review in spreading reliable information

Juan Antonio Aguilar Garib

A three-stub waveguide impedance matching algorithm based on equivalent circuit analysis

Tao Hong, Danfeng Zhou, Nouman Rasool, Zhengming Tang, and Huacheng Zhu

A Novel Wall Parameter Estimation Approach Based on Transmission Line Method from Through-Wall Radar Measurements

Akhilendra Singh

Kinetics of microwave-assisted synthesis of ethyl hexanoate by using heterogeneous catalyst: Process Intensification and Energy Consumption Analysis

Virendra Rathod and Aarti Mulay

Dielectric and chemical composition characterization of Ground water collected from different water sources

Deepak Gadani, Foram Modi, and Vipinchandra Rana.

Electromagnetic and Microwave Properties of Single-Layer Thermoplastic Natural Rubber (TPNR)/Yttrium Iron Garnet (Y₃Fe₅O₁₂)/Magnetite (Fe₃O₄) Composites Backed by a Perfect Conductor

Ahmad Nazlim Yusoff and Junaidah Md Sani

New IMPI CRM/Membership Experience Coming in the Summer of 2024

yourmembership[®]
by communitybrands

We are excited to announce that IMPI is in the process of migrating to a new-and-improved customer relationship management (CRM) system! Following the Symposium, IMPI will complete our move from Netforum, where we have been for 14 years, to our “new home” at YourMembership.

Our new CRM will mean more opportunities for IMPI Members to engage with one another in a secure portal, an improved experience for financial transactions (*i.e. paying your annual membership dues, purchasing event registrations, registering for webinars, etc.*), and the ability for our Board, Committees and Sections to collaborate in real-time!

For our staff, this will help to streamline our processes, enhance our ability to recruit new members, provide more robust reporting tools, and perhaps most importantly, create higher quality newsletters and member announcements.

How can you help? We will be reaching out to Members in the coming months as we prepare for the launch, but in the interim, take a moment to [log into your current account](#), using the email and password you use to access the Online Store: select “My Information” from the menu bar to the left, then check your “Profile.” You can use the “Edit/View Information” to make any changes to your credentials, name, current job title, company/academic institution, and contact details. Make sure to hit SAVE when done. Questions? Email us at info@impi.org

Schiffmann Memorial Scholarship Drive, Application Open



The Robert F. Schiffmann Memorial Scholarship was established by the International Microwave Power Institute (IMPI) in 2022 to honor the legacy of IMPI's long serving President, Bob Schiffmann. The scholarship is open to all current high school Seniors, undergraduate and graduate students, seeking a degree in: science, technology, engineering, or mathematics (STEM fields), from an accredited college or university, during the 2024/2025 academic school year (either in the US or internationally). Last June, Xu Zhou, of Washington State University became the first recipient of this annual award. [The application is now open.](#)

A Scholarship Committee, comprised of IMPI Members, will review applications beginning in April and an awardee will be announced at the Annual Symposium in May of 2024.

Those wishing to make a tax deductible contribution to the Robert F. Schiffmann Memorial Scholarship [can do so here](#) or mail a check, payable to IMPI, to: IMPI, PO Box 1140, Mechanicsville, VA 23111 by April 1st (include Memorial Scholarship in the subject line). The Schiffmann family has graciously agreed to match donations by IMPI Members again this year!

Thank you in advance for helping IMPI continue to honor Bob's legacy!

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

PARTNER NEWS & EVENTS

Smart Kitchen Summit 2024: June 4-5, 2024. Seattle, Washington. [Learn more here.](#)

IMS 2024: June 16-21, 2024, in Washington, DC. [Learn more!](#)

5GCMEA: July 22-25, 2024, at Kyushu University in Fukuoka, Japan. [More details here.](#)

In the News

[Riding the microwave:](#) three chemists share their stories (*Chemistry World*)

The International Microwave Power Institute

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