such a vast stock of application experience and fully equipped microwave application lab. Especially as with microwaves, any new application still starts in the lab and needs to be consequently developed into production scale.

We can feel that the technology is in motion with solid state generators creating new industrial opportunities in the 2450 as well as in the 915 MHz field. Also, we are experiencing that carbon foot-print reduction is an important aim for our customers and that microwaves have now the opportunity to move into even larger scale operations which were traditionally dominated by gas and fuel powered systems in the past.

We are very much looking forward to the next few years in this exciting area of electrical heating and drying and especially to the exchange of ideas and opportunities with the entire AMPERE community.

Fig. 1: From left to right, Pia Püschner, Jörn Lidde and Peter Püschner.

Report on 5 GCMEA

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A rumble of drums opened the 5th Edition of the Global Congress on Microwave Energy Applications, 5-GCMEA at the Shiiki Hall of Kyushu University, in Fukuoka, Japan (https://www.5gcmea2024.jp/). In fact, the conference had already started in the morning with workshops on specific topics, consisting of 30-minute oral presentations by a good number of the international experts. However, the participation of the attendees in the new type of "vibrating" message of the drums fully engaged them and highlighted how the tradition of Japanese culture began to accompany the entire conference (**Figure 1**).

Fig. 1: Conference participants performing with drummers at the opening ceremony (more photos at https://www.5gcmea2024.jp/gallery.html).

The 5 keynote lectures, 7 invited lectures, 2 JEMEA Award presentations interspersed the 4 parallel sessions organised during the 3 days of the technical programme for the 292 participants.

Twenty-nine posters (**Figure 2**) and 106 oral presentations reported the most advanced developments in the fields of MW and RF applications, devices, measurements & modelling, and scale-up for microwave industrial applications (more details on the programme can be found at: https://www.5gcmea2024.jp/program.html).

The conference attracted 10 Gold sponsors (Panasonic Corporation Living Appliances and Solutions Company, Mini-Circuits /M-RF CO., LTD, Mitsubishi Electric Corporation, JSPS R024 Electromagnetic Wave Excited Rection Field Committee, ANRITSU METER CO. LTD., Tokyo Instruments, Inc., S-TEAM Lab, Shenzhen Megmeet Electrical Co., Ltd, Dotwil, Kyushu University), 8 Silver sponsors (MUEGGE GmbH, Motoyama Co. Ltd., Keisoku Engineering System Co. Ltd., Shikoku Instrumentation, CO. LTD., AnHui MingBian Electronic Science &Technology Co. Ltd, Euler Microwave Devices Co. Ltd,, Chengdu Wattsine Electronic Technology Co. Ltd., TOKYO KEIKI INC.), 8 media partners (Orient Microwave Corp, Nissi-inc., Plasma Applications Co. Ltd., SHARP CORPORATION, YAMAMOTO VINITA CO. LTD, Ryowa Electronics Co. Ltd., Milestone General k.k., Fusion Fission Powers Co. Ltd.), and 3 scientific international journals (Frontiers in Chemistry, Catalysis Today, JMPEE) (**Figure 3**).

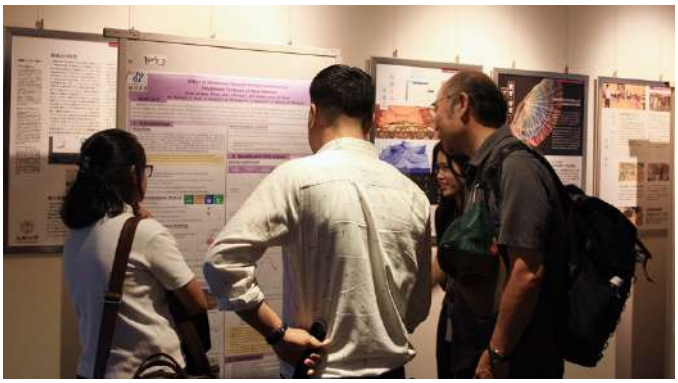

Fig. 2: Discussion in front of a poster.

The Round Table on industrial scale-up risks and threats, where international experts (**Figure 4**) who have successfully applied MW and RF technology at industrial level, stimulated the discussion among the participants and efficiently concluded the technical program.

Fig. 3: Coffee breaks in the exhibition area.

The Best Oral (J. A. Cuenca, S. Mandal, O. A. Williams, Cardiff University, UK, OD103 - Microwave Plasma Modelling for Heterogeneous Diamond Growth on III-Nitrides; A. Ono, A. I. Fujiwara, J. Liu, T. Kon, K. Ohno, Kyushu University and Munakata High School, Japan OC108-Hydrogen Reduction of Tungsten Oxide with Microwave Rapid Heating; K. Liu, H. Li, Z. Zhao, X. Gao, Tianjin University and Haihe Laboratory of Sustainable Chemical Transformations, China, OB105-Revealing the Quantitative Regulation Rules of Microwave Hotspots in Liquid-Solid Systems via Microscale Heat Transfer Model and In-situ Fluorescence Spectroscopy; Y. Kwak, Q. Kim, C. Wang, K. Yu, Weiqing Zheng, D. G. Vlachos, University of Delaware, USA, OA107-Mechanistic Insights into Microwave-Assisted Thermal Catalysis for Shale Gas Upgrade) and Best Poster (T. Nakamura, S. Uemura, AIST, Japan-P08-Effects of Magnetic and Electric Fields on Heating Characteristics in Microwave Soldering) presentation awards in the Closing Ceremony were the farewell message for the participants (**Figure 5**).

Fig. 4: Speakers at the Round Table: from left to right: Eiji Yamasue, Ritsumeikan University, Japan; Junming Tang, Washington State University, USA; Georgios Dimitrakis, Nottingham University, UK; Satoshi Hrikoshi, Sophia

University, Japan; Yoshio Nikawa, Kokushikan University, Japan.

Fig. 5: Conference attendees. At the rear, with dark T-shirts, some of the 25 Kyushu University students who supported the local organizers with their enthusiasm and participation.

In addition to the successful technical program, the social events, from the welcome buffet to the banquet dinner, were simply fascinating. Together with the accompanying program of visits to the surrounding area of Fukuoka, the 5 GCMEA organizers managed to showcase the various cultural aspects of the rich Kyushu Island territory, the rice fields surrounding the ITO campus where the conference was held, the climb to the mountain observatory, visits to temples, a noodle factory and a sake brewery.

A special attraction was the banquet dinner with the opening of the sake barrel by some of the presidents or delegates of the 5 associations of the MAJIC confederation (**Figure 6**) and the award giving ceremony.

The two traditional GCMEA awards: the Rustum Roy Innovator Award went to José Manuel Catala-Civera, Universidad Politecnica de Valencia, Spain, and the Ricky Metaxas Pioneer Award went to Cristina Leonelli, University of Modena and Reggio Emilia, Italy (**Figure 7**).

Probably the most significant event of this edition of the GCMEA conference is the announcement of the creation of the Association of Industrial Microwave Heating and High Frequency Applications (AIMHHA) and its affiliation to the MA^{2}JIC, which has consequently had to change its acronym: MAJIC. The confederation agreed to hold the next GCMEA edition in India in 4 years; the exact date and venue will be finalized in the future.

Fig. 6: The Presidents of the 5 MA^{2}JIC associations opening the sake barrel at the beginning of the Banquet dinner. From left to right: Youshio Nikawa (Conference Chair); Parag Prakash Sutar (representing AMIHHA); Satoshi Horikoshi (President of JEMEA); Li Wu (representing CAMPA); Georgios Dimitrakis (President of AMPERE); John Gerling Jr. (representing IMPI).

Fig. 7: The winners of the two traditional GCMEA awards: José Manuel Catala-Civera, Universidad Politecnica de Valencia, Spain, (left) and Cristina Leonelli, University of Modena and Reggio Emilia, Italy (right).