



Transnational News

The European Microwave Week 2008 and Its Microwave Conferences

■ Peter Hoogeboom and Frank van Vliet

Under the auspices of the European Microwave Association (EuMA) the 11th annual European Microwave Week was organized in the Amsterdam RAI Congress Centre, The Netherlands, 27–31 October 2008. This major event consisted this year of five conferences, an exhibition, and various side events. The 38th European Microwave Conference (EuMC), the Third European Microwave Integrated Circuits Conference (EuMIC), the Fifth European Radar Conference (EuRAD), and the First European Wireless Technology Conference (EuWiT) were complemented by the Military Radar Conference 2008. The latter was organized by Defence IQ in London and collocated with the Microwave Week for the first time by invitation of the EuMA and the local organizers. The Military Radar delegates were invited to participate in EuRAD.

Note that after recent name changes, the year counts for EuMIC and EuWiT were reset. Their actual history is much longer than suggested by the year count.

A local organizing team of 15 persons, headed by the EuMW Gen-

eral Chair Frank van den Bogaart of TNO Defence, Security, and Safety, started preparing 18 months in advance.

The central theme of the event was “Bridging Gaps.” This theme was often mentioned during the week, and, indeed, at the end of it, we were able to conclude that gaps in several areas were bridged between research, academia, and industry of three continents, and also between conferences, groups of people, organizations, companies, and scientific authors.



**EUROPEAN
MICROWAVE
WEEK**
Amsterdam
27-31 October 2008
www.eumweek.com

This 11th edition of the European Microwave Week was a very successful one. Many new, innovative events were organized while maintaining the proven concept of the order of events: The EuMC and the exhibition took place on the central three days of the week. The EuMIC and

EuWiT spanned the first two days, and EuRAD the last two days. The planned slight overlap between conferences allowed for joint sessions on topics of mutual interest. Furthermore, workshops and short courses were held throughout the week. We welcomed 1,481 participants in the four EuMW conferences and the associated 18 workshops and short courses, a new record (in this count, registrations to more than one conference are counted as one participant). 530 papers were presented in 108 oral sessions, and 195 poster papers were presented in four poster sessions. These were selected from 1,082 submitted abstracts.

The large, successful exhibition attracted additional visitors to the Amsterdam RAI all day during the opening hours and even more during the happy hours. Furthermore the

Events and excursions were cancelled during European Microwave Week. If you paid ITB Holland for any of these and have not yet received a full refund, e-mail us at microwave.editor@ieee.org.

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exhibitors organized workshops and tutorials, which could be attended free of charge by everyone.

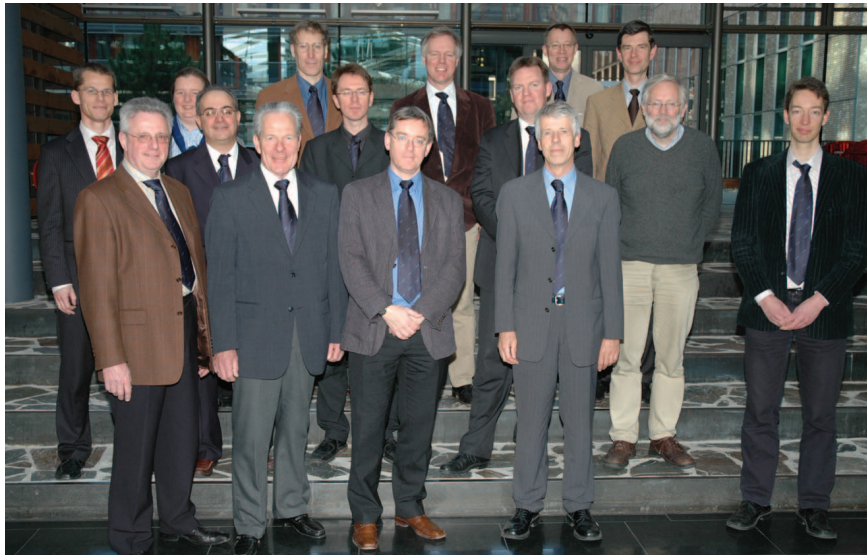
In the opening session, two awards were presented. Prof. Leo Ligthart received the EuMA Distinguished

Service Award for his essential contributions throughout the years to creating the EuMW as we currently know it. The EuMA Outstanding Career Award was presented to Hans Hartnagel for the many achievements throughout his entire career.

It is clear that the electronic approach of the Terahertz world has started to become reality.

A new event was successfully introduced during the EuMW. A student challenge was organized by Ph.D. students of Delft University. In this competition, teams of students aimed to achieve a novel application-oriented concept from oral presentations and posters contributed to the conferences belonging to the EuMW2008. During the week, the teams had to prepare a poster explaining and clarifying their novel concept. A technical jury evaluated the posters and selected the winning team. The EuMW2008 Student Challenge Prize, sponsored by Thales Nederland, with a value of €1,500, was awarded to Stevan Preradovic from Monash University, Victoria, Australia and Lars Reichart from The University of Karlsruhe in Germany. Despite the distance between their universities, the EuMW brought close and fruitful cooperation in their poster on "Advanced traffic regulation using UWB Chipless RFID systems."

A new side event was the Women in Engineering (WIE) event. The EuMW2008 WIE team organized an evening debate on the topic "Engineering Careers for Women: Still a Challenge?" This event was kicked off by two experts on the subject. Dr. Barbara van Balen, a gender specialist, gave a presentation on European Union gender policy. Prof. Jenny Dankelman, holding a chair in Biomechanical Engineering at Delft University of Technology and the first female scientist in



The EuMW local organizing team. From left: André Verweij (TNO, The Netherlands), Leon Kaufmann (Technical University Eindhoven, The Netherlands), Dominique Schreurs (K.U.Leuven, Belgium), Homayoun Nikookar (Technical University Delft, The Netherlands), George Heiter (Heiter Microwave Consulting, USA), John Long (Technical University Delft, The Netherlands), Jan Geralt bij de Vaate (ASTRON, Dwingeloo, The Netherlands), Frank van den Bogaart (TNO, The Netherlands), Frank van Vliet (TNO and The University of Twente, The Netherlands), Erik Fledderus (TNO and Technical University Eindhoven, The Netherlands), Peter Hoogeboom (TNO and Technical University Delft, The Netherlands), Herbert Zirath (Chalmers University, Sweden), Alexander Yarovoy (Technical University Delft, The Netherlands), Emiel Stolp (Thales Nederland, Hengelo, The Netherlands), Marc van Heijningen (TNO, The Netherlands). (Photograph taken at the TPC-Meeting on 12 April, 2008 in The Hague, courtesy Shmuel Auster.)



The well-attended EuMW 2008 grand opening session in the RAI auditorium.

mechanical engineering in 1984, shared her experiences in making a scientific career in a man's world. Her interest in gender issues was sparked by the persistent reception of letters starting with "Dear Sir" after her appointment as professor. "Apparently," she concluded, "in those times, a woman could not be a professor."

Although the success of the EuMW carries on in the excellent program book, conference CD (still available through Horizon House in London, UK), and workshop CD, a special issue of *International Journal of Microwaves and RF* will cover the top results from EuMC and EuMIC. This new journal is published by Cambridge University Press in collaboration with EuMA. The special issue is expected by September 2009.

For EuWiT, a special issue of *Journal of Communications*, published by Academy Publisher will appear in July 2009.

Shortly after these publications, the next edition of the European Microwave Week will be about to take place. We look forward to another inspiring event in Rome, Italy, 28 September–2 October 2009.

EuMC

38TH EUROPEAN MICROWAVE CONFERENCE 2008

The 38th EuMC has been a record breaking event in every aspect. For the first time, the number of participants exceeded 1,000. EuMC remains, by far, the largest conference in the EuMW. 50 EuMC sessions and 19 joint sessions were held in three days. Furthermore, three poster sessions were conducted with a total of 120 poster papers. The acceptance rate of the oral sessions was almost 50%. As a result, the high-quality standard for the oral sessions could be maintained. In the poster sessions, a higher acceptance rate of 66% was maintained to provide as many authors as possible a chance to build experience in paper presentation and promoting their work.

The 2008 version of the EuMC in Amsterdam was organized by Peter

Hoogeboom (TNO and Technical University Delft/IRCTR, The Netherlands, conference chair, and EuMW publication chair), Dominique Schreurs (K.U. Leuven, Belgium, conference and workshops cochair) and Jan Geraert bij de Vaate (ASTRON, The Netherlands, conference cochair and TPC).

In the opening session, which is the joint opening of the week, the exhibition, and the EuMC, two invited papers were presented: Barry Perlman from CERDEC, New Jersey, USA presented "Trends in Mixed Signal RF and Integrated Microsystems," while Jean-Paul Linnartz from Philips, Eindhoven, The Netherlands gave a talk titled "Challenges for Microwave Research to Enhance Quality of Life." The two presentations complemented each other but also showed contrasting visions on technological developments. While Perlman pointed out the great value of increasing digitisation in RF

circuits, leading to more flexibility, capabilities, and accuracy, Linnartz stressed the efficiency of mixed solutions, where analog solutions at RF level for certain functions like signal combinations are chosen to improve the power efficiency of small wireless devices. These two talks sparked inspiring discussions during the break, making the opening session a very successful one.

Apart from the traditional sessions in main conference topics like filters, components, antennas, RFID, and many more, EuMC2008 brought several focussed sessions on specially selected topics like metamaterials, amplifiers, UAV SAR systems, and the SOSTAR-X Ground Surveillance demonstrator. New conference topics

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included "Quality of Life" and "Homeland Security."

A new event was the Interactive Poster Session (IPS). The IPS was held jointly with EuRAD and attracted 14 presentations. It enabled authors to present new results in an interactive way. Indeed, we saw live computer demonstrations and real measurement

setups that showed new results in an attractive and vivid way. The outstanding Interactive Poster Prize of € 1,000, sponsored by Thales Nederland was awarded to J. Sachs, Technical University Ilmenau, Germany for a presentation on "Detection and Tracking of Moving or Trapped People Hidden by Obstacles Using Ultra-Wideband Pseudo-Noise Radar."

Three more prizes were awarded. The EuMC Microwave prize (€5,000), which went to Y. Yashchyshyn, Warsaw University of Technology, Poland, for his paper "Extending Functionalities of Waveguide Slot Antennas by Means of Reconfigurable Aperture." This paper showed an innovative approach to reconfigurable antennas by the use of switching PIN diodes between patches.

The two EuMC Young Engineers Prizes (€ 2,000 each, sponsored by EADS) went to A. Kilian, University Erlangen-Nuremberg, Germany, for his paper "Investigation of the Hot Embossing Technology for Low-Cost Antennas Printed on Polymer Substrates" and S. Bastioli, University of Perugia, Italy for the paper "A Novel Class of Compact Dual-Mode Rectangular Waveguide Filters Using Square Ridge Resonators."

Kilian presented a novel metallization technique for polymer substrates to enable the assembly of low-cost microwave antennas. Bastioli described a novel approach in the design of ridge waveguide filters.

The EuMC preclosing and closing sessions completed a magnificent three-day event.

EuMIC

EuMIC has been held for the third time in 2008. It has evolved from the



EuMIC 2008

well-known GAAS conference, which was first held in Rome in 1990, where it will return next year. Being the first conference of the week, starting at 8:30 a.m. Monday morning, a surprising amount of more than 440 people attended. More than 100 high-quality papers were presented, there was not a single no-show author in the entire EuMIC conference.

This year's conference was organized by Herbert Zirath (Chalmers, Sweden, conference chair), John Long (Delft University of Technology, The Netherlands, conference cochair) and Frank van Vliet (TNO and University of Twente, The Netherlands, cochair, and TPC chair). The conference was jointly organized by the EuMA and the GAAS Association.

The 2008 EuMIC conference gained extra flavor by the seven workshops and the traditional superb short course on power amplifier design. The workshops were very well attended; record-breaking in attendance was the workshop on "Reconfigurable RF Systems," jointly between EuMIC and EuMC, organized by Rik Jos (NXP) and Herbert Zirath (Chalmers). It was relocated to the biggest room at the last instant, and still every seat was filled.

Five focussed sessions were organized to give a bigger exposure to the current hot topics in research.

The focussed sessions ranged from transistor-level up to emerging systems, addressing linear receiver techniques, MMIC's for phased-array radar, 60-GHz systems, and devices for 100 GHz and above up to technology trends for millimeter-wave applications.

The formal opening was a trumpet serenade by Herbert Zirath and Georg Boeck. In the following plenary talks, two world-class scientists presented the state of the art in their respective area. Mehmet Soyuer from the IBM T.J. Watson Research Center gave an overview of emerging millimeter-wave systems, focussing on 60 GHz, in a talk

entitled "Millimeter-Wave Wireless: Applications, Standards and Technologies." Thijs de Graauw, HIFI principal investigator at SRON and recently appointed as Alma Director, gave an overview of what is likely to be the most high-tech piece of equipment exported from The Netherlands, and it is exported into

outer space. In his talk entitled "The Herschel-HIFI Space Instrument: Exploring the Universe with Millimeter- and Microwave Technology," system aspects and microwave details on this challenging satellite sensor, to be launched in 2009, were covered.

Apart from the more than 20 sessions with five papers each, the traditional round table was held at the end of the first day. Under supervision of Ernesto Limiti, all European foundries participated and sketched the important trends for microwave semiconductors. A lively discussion arose, with animated participation by the audience, though not all controversies were resolved on-stage!

Prizes were awarded to the best conference paper and to the best

young engineer conference paper. The Young Engineer Prize was awarded to Hiroyuki Takahashi and his coauthors, for a paper titled "120-GHz-band Low-Noise Amplifier with 14-ps Group-Delay Variation for 10-Gb/s Data Transmission." The combination of real-world specifications at a very challenging communication band set this paper apart from the other nominated papers. The EuMIC Best Paper Award was presented to Erik Öjefors and Ullrich Pfeiffer, for their paper "A 94-GHz Monolithic Front-End for Imaging Arrays in SiGe:C Technology." A well determined long-term strategy, combined with a challenging application and state-of-the-art results were considered laudable. Three GaAs Ph.D. Student Fellowships were awarded to Ph.D. students who show great promise and interest in microwave electronics. The recipients were Mrs. Cipriani (University of Rome Tor Vergata), Mr. Abassi (Chalmers University of Technology), and Mr. Yuan (University of Manchester).

These prizes were awarded in the closing ceremony, in which there were two plenary talks, giving insight in tomorrow's microwave technology. Gabriel Rebeiz, from the University of California, San Diego, spoke about "High-Performance Microwave and Millimeter-Wave Phased Arrays Using CMOS and SiGe RFIC's" and illustrated this with many microwave and millimeter-wave examples. In an impressive lecture, tough real-world specifications were compared to the highly reproducible results that Silicon may give. Higher in frequency, Bill Deal, from the Northrop Grumman Corporation, talked about "Terahertz Transistors and their Applications to Submillimeter Wave Electronics." It is clear that the electronic approach of the Terahertz world has started to become reality.

We look back to a very successful EuMIC 2008, and look forward to an event in Rome that is equally stimulating and refreshing. We look forward to EuMIC 2009!

