

WAMS 2022 Report

by

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Wireless, Antenna & Microwave Symposium (WAMS) is a multi-disciplinary symposium being planned to be held annually in India. It is conceived as a low-cost symposium held at educational institutes providing a platform for students and young professionals to showcase their research and development work. The first edition WAMS 2022 was held successfully in the hybrid mode at the National Institute of Technology (NIT), Rourkela during June 5 – 8, 2022. The international symposium was technically sponsored by the IEEE Rourkela SBC, IEEE Kolkata section, IEEE Antennas & Propagation Society & IETE. The financial sponsors include Custom Microwave Inc., IEEE AP-S, QuadGen, Dr. Sudhakar Rao, Altair, DRDO and Entuple. Prof. K. R. Subhashini from NIT Rourkela was the General Chair and Dr. S. Rao from Northrop Grumman, USA was the Executive Chair. Organizing committee members included Prof. K. R. Subhashini, Prof. M. R. Tripathy, Prof. D. Vakula, Prof. R. Reddy, Prof. S. S. Karthikeyan, Prof. M. Appajappa, and Dr. R. K. Sinha.



Figure 1. WAMS 2022 Inauguration: (from left to right) Dr. S. Rao, Mr. C. S. Rao, Prof. P. Sarkar, Dr. S. Christopher, Prof. D. Patra, and Prof. K. R. Subhashini.

A total of 235 papers were submitted and 170 papers got accepted for presentation in the conference with 124 oral presentations and 46 poster presentations. The number of participants registered was 160. The focus of WAMS 2022 was students and young professionals and to this effect free accommodation, low registration fee, free meals and travel grants were provided. An unprecedented number of 57 awards were given in total that included 17 technical field awards, 30 student travel grants and 10 student activity awards - thanks to sponsors of these awards. WAMS 2022 was successful in recruiting 70 new IEEE student members by paying their first-year registration fee.

With the scholastic presence of technical stalwarts across the globe (in hybrid mode), Day-1 of WAMS 2022 kickstarted with the inauguration ceremony, where the General Chair, Patron (Director In-Charge, NIT Rourkela – Dr. Pradip Sarkar) and the Executive Chair of WAMS 2022 have presented the opening remarks of the 4-day symposium after the prayer followed by the traditional lamp lighting ceremony. The Guests of Honour and the Keynote Speakers of the first day, Prof. Saifur Rahman (IEEE President-elect 2022 & Director, Virginia Tech Advanced Research Inst.), Dr. S. Christopher (Professor, IIT Madras & Ex-Chairman DRDO & Defence Secretary), and Mr. C. S. Rao (Chairman & Co-Founder, QUADGEN Wireless Solution). They addressed the gathering by enlightening the audience about importance of IEEE and its role, need for student involvement and volunteerism in symposia/conferences, importance of mentoring & networking, and significance / relevance of WAMS-2022 to Indian professionals, especially to student community. Prof. D. Patra (Head of the Department - Electrical Engineering, NIT Rourkela) gave the vote of thanks, concluding the inauguration ceremony. Fig 1 shows the photo taken during the inauguration and launching of WAMS2022 brochure.

Dr. S. Christopher delivered keynote talks in-person on the challenges that were encountered while designing the antenna and phased array systems for AWACS and light-combat aircrafts and the methods adopted to build successful hardware in meeting mission objectives. Mr. C.S. Rao talked about advancements in the Wireless communications arena from 1G to 5G and beyond and answered the queries of the participants. Dr. Nacer Chahat (Jet Propulsion Laboratory (JPL) NASA, USA) later delivered his keynote address in virtual mode on Mars Helicopter communication link and innovative antenna hardware developed for CubeSats, Landers, and Rovers. On Day-2 Prof. Mona Jarrahi (Electrical and Computer Engineering at UCLA) gave her keynote address on the overview of the unique applications of terahertz waves for chemical identification, material characterization, biomedical sensing, and diagnostics, describing the state of the existing terahertz imaging and sensing technologies and their limitations, through virtual platform.

Invited talks were given by Prof. Harish Krishnaswamy (Associate Professor, Columbia University), Dr. Ashutosh Kedar (Electronics & Radar Development Establishment (LRDE), DRDO, Bangalore) , Prof. Desmond Sim (Feng Chia University: Taichung, Taichung, TW), Prof. Nuno Borges Carvalho (University of Aveiro, Aveiro, Portugal) and Dr. Shiv Narayan (CSIR-NAL, Bangalore).

Afternoon sessions were all dedicated to oral & poster presentations in wireless, antenna and microwave tracks, IEEE student activities, young professional talks by Prof. Debdeep Sarkar (IISc, Bangalore), Prof. Meenakshi Rawat (IIT Roorkee), Prof. Qammer H. Abbasi (University of Glasgow, U.K.) and Dr. Gaurangi Gupta (Post-doctoral Researcher, NASA/JPL, USA). Women in engineering session (in hybrid mode) was organized and chaired by Prof. D.D. Krishna (CUSAT, Kochi) with Dr. Stefania Monni and Prof. Mahrukh Khan as panel speakers, A total of 22 oral presentation sessions and one poster presentation session have been organised successfully.

A cultural event was organized on 07th June 2022 (Fig. 2) followed by the awards ceremony, where Dr. Sudhakar Rao, Prof. K. R. Subhashini and Prof. Ramana Reddy (Awards Committee Chair) have given away 57 awards under various categories. (Fig, 3 & 4). A banquet dinner was arranged after the award ceremony with all the distinguished guests, participants, committee members and volunteers.



Figure 2. Cultural event with traditional and regional dance performances by local students



Figure 3. Photo of some of the student travel grant recipients with the organizing committee members



Figure 4. Dr. Gaurangi Gupta (middle) receiving Dr. Sudhakar Rao best paper award from Dr. Subhashini Ratna (left). Seen in the photo on right is Dr. S. Rao

The final session of the WAMS 2022 has been the interactive session where all distinguished guests, student volunteers and the participants (physical and virtual) expressed their views about the symposium and shared their valuable feedback with the executive and organizing committee members. Several students spoke about their experience and thanked the organizers for providing the opportunity to attend WAMS 2022 which was made possible by the generosity and vision of the organizing committee. The overall feedback was excellent. All most all of them said they were motivated by the symposium and will attend WAMS 2023 with more papers and contributions. The organizers thanked the student volunteers of NIT Rourkela that did a stellar job in designing & maintaining the website, handled hybrid mode operation seamlessly, took care of transportation needs for guests, hostel accommodation for students, guest house & hotel accommodations for guests and the cultural program. Also, thanks to various contributions from students & faculty of Raghu Institute of Technology, Visakhapatnam. Indeed, WAMS 2022 proved to be different from any other symposia/conferences. Group photo taken after the interactive session is shown in Fig. 5.

Finally, the General Chair Prof. K. R. Subhashini gave vote of thanks and closing remarks of the symposium. It was announced that WAMS 2023 shall be held at Nirma University, Ahmedabad during June 7-10, 2023 with Prof. Dhaval Pujara as the General Chair. Plan ahead, contribute, attend and enjoy the hospitality of WAMS 2023 organizing committee!



Figure 5. Group photos at the closing ceremony of WAMS 2022 with volunteers and awardees

Details of inaugural talks and photos taken during the symposium can be accessed with the following link: <https://photos.app.goo.gl/QTojttYDTNDs4dsN8>