Reports from AP-S Committees & Activities

WIRELESS, ANTENNA, AND MICROWAVE SYMPOSIUM 2024

Report by: P. Satish Rama Chowdary and Sudhakar Rao

The 2024 Wireless, Antenna, and Microwave Symposium (WAMS 2024) was held at Raghu Engineering College (REC), Visakhapatnam, Andhra Pradesh, India, during 28 February–3 March 2024. WAMS is a multidisciplinary symposium focused on providing an affordable yet state-of-the-art international forum for students and young professionals (YPs) to interact with leading domain experts around the world. WAMS 2024 marks the third edition in the series and was a resounding success, bringing together visionaries, industry leaders, and researchers in the fields of wireless, antenna, and microwaves to explore emerging trends, technologies, and strategies shaping the future. The conference provided a platform for fruitful discussions, networking opportunities, and collaborations. WAMS 2024 was sponsored by IEEE, the IEEE Antennas and Propagation Society (AP-S), the IEEE Vizag Bay Section, the AP-S YP, and the WAMS Society. Industrial and other sponsors include Custom Microwave Inc. (Grand Sponsor), QuadGen, MathWorks, RaoS Consultants LLC, DMC Canada, Dassault Systemes, Micropack Private Ltd., Novel Patent Services, Comsol, and so on. The conference highlights include the following:

- Two hundred fifty participants attended.
- Two hundred twenty oral and poster paper were presented.
- Forty-five awards were given, a record for any conference, national or international, and most of them went to students and YPs.
- Sixty-five travel grants were provided to students.
- More than 100 students received free accommodations.
- Sixty-three new IEEE Student Members registered during WAMS 2024 (61 are AP-S members).

A workshop was organized on 28 February 2024 as part of the conference to provide participants with an opportunity to gain knowledge on advanced antenna designs for space, air, and ground communications; space applications; the future of space exploration; satellite telecommunications; radar systems; and radio telescopes. The workshop featured talks from Dr. Sudhakar Rao (RaoS Consultants LLC), Dr. Nacer Chahat [NASA/the Jet Propulsion Laboratory (JPL)], Dr. Paolo Focardi (NASA/JPL), Dr. Gaurangi Gupta (NASA/JPL), Abhishek Tiwari (MathWorks), Dr. Shiv Narayan (Council of Scientific and Industrial Research-National Aerospace Laboratories, Bangalore), Dr. Jonathan Sauder (NASA/JPL), and Dr. Ch Anil Kumar (National Science and Technological Laboratory, Visakhapatnam). The workshop was well attended, with 186 participants from various parts of the country. During the inaugural ceremony held in the packed seminar hall with 375 participants and guests, the conference souvenir was unveiled (see Figure 1). Figure 2 shows a section of attendees during the inauguration. Dr. P. Satish Rama Chowdary and Dr. Rao delivered the opening remarks about WAMS and outlined the four-day program. I.S.N. Raju, representing Raghu Educational Institutions (REI), extended a warm welcome to all attendees and dignitaries, conveying a message from Sri Raghu Kalidindi, chair of REI. Dr. Ramana Reddy, president of the WAMS Society, addressed the gathering, articulating the vision of the WAMS Society. Prof. Vedula Chakravarthy, Technical Program Committee (TPC) chair, briefed about paper submissions and technical sessions.

The keynote speakers included Dr. Chahat, C.S. Rao, Dr. Clency Lee-Yow, and Rajeev Jyothi. The invited talks were delivered by Dr. Chow-Yen-Desmond Sim, Dr. Taimoor Khan, Dr. Madhumita Chakravarti, Dr. Dhananjay Jahagirdar, Dr. Sauder, Prof. Dhaval Pujara, and Dr. Zubair Akhter. Participants had the opportunity to gain valuable insights into the emerging technologies and innovative solutions that are shaping the future of their respective industries through engaging panel discussions and student activities through YP and Women in Engineering (WiE) initiatives.

The YP and Student Activities Committee sessions included panel discussions led by Prof. M.D. Selvaraj, Prof. S Yuvaraj, Prof. D. Sarkar, Dr. D. Ganguly, Prof. V.S Tripathi, and M. Pattabhi. These sessions engaged undergraduate, postgraduate, and Ph.D. students and researcher

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scholars, with awards presented for the best papers in each category. Additionally, the WiE session featured talks by distinguished professionals including Dr. B. Choudhury, Dr. Chakravarti, and Prof. B.J. Kailath.

The technical sessions for paper presentations were organized by the TPC, chaired by Dr. Chakravarthy, with specific tracks on wireless, microwave, and antenna topics chaired by Dr. Selvaraj, Dr. S. Chaturvedi, and Dr. N.K Darimireddy, respectively. With 26 technical sessions accommodating 176 oral presentations and one poster session featuring 44 posters, the symposium provided ample opportunities for disseminating research and facilitating discussions. WAMS 2024 also featured an industry–academia interactive session that facilitated discussions on the current academic system and the role of industry in education. Moderated by K. Sathish and A. Tamarapalli, the session saw participation from industry and academic experts who shared their perspectives and experiences related to bridging the gap between academia and industry and guiding future research directions. A Q&A session with attendees was held at the end.

The exhibition provided sponsors with an opportunity to showcase their products and technical expertise to attendees, fostering interactions and networking among participants. Awards banquet was held on the evening of 2 March with chief guest Dr. Abraham Verghese (director, NSTL). A cultural program by the students

FIGURE 1. The souvenir unveiling at the inauguration. Left to right are Dr. Chow-Yen-Desmond Sim, Dr. Nacer Chahat, I.S.N. Raju, V. Subbaiah, Dr. Sudhakar Rao, Dr. Ramana Reddy, and Dr. P. Satish Chowdary.

FIGURE 2. A photo of the attendees.

of REC, Visakhapatnam, was conducted by students who performed local dances. It was followed by the awards ceremony, moderated by Dr. Chowdary, Prof. Divya Mokara, and Dr. Rao, where 45 different awards were given and roughly 30 of them went to students and YPs. Dr. Sauder received the top award for his paper, "Deployment Mechanisms for Reflectors, Booms, and Feeds Across JPL Missions and Technologies." Dr. Rao was honored by the IEEE Vizag Bay Section with a lifetime achievement award for his contributions to WAMS, the AP-S, and innovations to the antenna industry.

The networking sessions at WAMS 2024 facilitated meaningful connections and collaborations, allowing professionals to exchange ideas and explore partnership opportunities. Participants praised the quality of the conference and speakers and the organizational excellence of the event. They appreciated the relevance of panel discussions and workshops. Suggestions for future conferences include adding more interactive sessions, diversifying panelists, and expanding the scope to include emerging technologies. In summary, WAMS 2024 was a huge success among students, YPs, and other professionals and provided networking opportunities among attendees. The next edition, WAMS 2025, will be held at Indian Institutes of Information Technology DM Kancheepuram during 5–8 June 2025, with Dr. Selvaraj as the general chair. Dr. Selvaraj briefed about WAMS 2025 and invited all attendees to Kancheepuram, which is famous for ancient temples and silk sarees.

SUPPLEMENTARY MATERIAL

THE AP-S IN KENYA

Report by: Reu Kemboi

The AP-S traces its origins back to its establishment as a joint Society with the IEEE Microwave Theory and Technology Society (MTT-S) on 13 November 2023. It started as a joint Society due to a lack of enough members to establish an independent Society. However, on 11 March 2024, we formed an independent Chapter with nine members and three IEEE Graduate Student Members.

ACTIVITIES AND INITIATIVES

The AP-S was launched on 15 December 2023, at Panari Hotel, Nairobi, Kenya, by Prof. Vikass, who is the sole reason why the AP-S exists in Kenya, as he sparked interest during the Africon in September (see Figures 3 and 4). On 22 March 2024, we did our first symposium on the AP-S, fully sponsored by companies. It attracted students from across the country and industry partners from airlines, broadcasting, and government regulatory authorities such as the Kenya Civil Aviation Authority (KCAA). The results of the symposium have yielded fruits and the related industries are giving us industry visits, for instance, on 16 April, we will be having an industry visit to the KCAA for the very high frequency omni-directional range and radar equipment. On 17 May 2024, we will be having a workshop of a joint Distinguished Lecturers (DL) program of the sister Societies, the AP-S, MTT-S, IEEE Electromagnetic Compatibility Society (EMC-S), and IEEE Geoscience and Remote Sensing Society (GRSS). The success of the events will determine our ability to host an AP-S conference. We have lots of activities that have not been included in this report as a comprehensive one will be filed at the end of the year.

MEMBERSHIP

The AP-S boasts a membership base with an increase of more than 290%. Prior to the symposium, we did a membership drive, and up to 35 members joined the Society within a very short time. Soon, we will be launching the Society in the student branches that have met IEEE's requirements to establish a Chapter.

IMPACT AND CONTRIBUTIONS

The AP-S has made significant contributions to the life of students in career advancement and educational exposure as well as networking from industries.

FIGURE 3. Launching of AP-S by Prof. Vikass on 15 December 2023, Panari Hotel, Nairobi, Kenya.

FIGURE 4. The volunteers take photos after the AP-S Symposium in March 2024.

Soon, we will be planning to do humanitarian activities to also have an impact in the community.

FUTURE DIRECTIONS AND CHALLENGES

Looking ahead, the AP-S is still a young Chapter in Kenya and, today, we may not have big goals, but with time, we're set to have visions, which are poised to address emerging challenges and opportunities in antennas and propagation. Most of our members are students, but if we have members who are YPs or are in industries, the AP-S will grow to meet the aforementioned objectives. The rapid pace of technological innovation, coupled with the increasing complexity of wireless communication systems, presents new avenues for R&D. The AP-S is committed to advancing the frontiers of knowledge in antennas and propagation, fostering collaboration and innovation, and inspiring the next generation of researchers and engineers in the field, which I believe is the overall goal of the AP-S at large.

CONCLUSION

The AP-S Chapter in Kenya is a rapidly growing Society, and by providing technical guidance, financial support, membership development assistance, training and professional development opportunities, and networking opportunities, this support can empower the local Chapter to host successful events, recruit and retain members, enhance members' skills and capabilities, facilitate connections with professionals in the field, and inspire continued efforts in promoting antennas and propagation technology in the region.

SUPPLEMENTARY MATERIAL

DL PROGRAM NEWS AND NEW APPOINTMENTS

Committee Chair and Report by:
Levent Sevgi

Dear AP-S members, after serving four years (2020–2023) as one of the Distinguished Lecturers of the AP-S (visit https://www.youtube.com/watch?v=BJE8NFLJ4b0 for an ~10-min video summarizing all my tours), I'm honored to let you know that I'll be serving as chair of the DL program starting on 1 January 2024. Thanks to Branislav Notaros, our president, for his invitation, and the Administrative Committee for its approval.

Figure 5 shows the new committee members. Nader Behdat, Kenneth K.F. Tong, Ari Sihvola, and Jun Hu were already in the committee, and I invited Maria Kovalevo, Gunes Karabulut Kurt, Yue Ping Zhang, and Sema Dumanli Oktar. I would like to thank all members of the committee for agreeing to work with me this year; wish them all great success.

In Figure 6, all the active Distinguished Lecturers are shown. The

FIGURE 5. The new AP-S DLP Committee members.

first and second row are the DLs for the 2022–2024 and 2023–2025 terms, respectively. The final row shows newly elected DLs, each appointed for a three-year term starting from 2024: Sima Noghanian (CommScope Ruckess Networks, Sunnyvale, California, USA), Sim (Department of Electrical Engineering, Feng Chia University, Taiwan,) Qammer H. Abbasi (James Watt School of Engineering, University of Glasgow, Scotland, U.K.), Zhen Peng (Department of Electrical and Computer Engineering, Urbana, Illinois, USA), and Konstantinos (Costas) Sarris (Department of Electrical and Computer Engineering, University of Toronto, Canada).

I thank Prof. Kwai Man LUK, former chair of the Distinguished Lecturer Program Committee, and all the members who were in the selection process for their time, effort, and attention to detail as well as all the nominees and nominators.

Finally, I'm glad to inform you that, in addition to our regular DL program, we're going to have joint DL programs with our sister Societies, the MTT-S, and EMC-S as well as the GRSS to strengthen and increase bilateral/trilateral collaboration and professional synergy among the Societies. We have already signed memorandums of understanding with all of them.

We launched the first Inter-Society DL (ISDL) program between the MTT-S and the AP-S last year. The program was announced for the 2023–2025 term, and the lecturer is Piero Angeletti of the European Space Agency.

We plan to organize several joint DL days all around the world in 2024. The first one was at the University of Zagreb, Croatia, on 12 April 2024, hosted by Miroslav Joler, chair of the IEEE Croatia Section AP-S Chapter. The tentative speakers will be Notaros, AP-S president; Angeletti, AP-S MTT-S ISDL; Yaru Mendez, EMC-S DL; Cristiano Tomassoni, IEEE MTT-S DL; and Levent Sevgi, AP-S DLPC chair and past DL.

The tentative locations for other ISDLs are Glasgow, Scotland; King Abdullah University of Science and Technology, Saudi Arabia; Johannesburg, South Africa; and Nairobi, Kenya. You are warmly invited to participate in all these activities. We'll have more to come, and updates can be found on our website at http://ieeeaps.org.

FIGURE 6. All the active AP-S DLP Lecturers in 2024.

COMMITTEE ON PROMOTING EQUALITY CORNER

Committee Chair: Weng Cho Chew
Report by: Anisha M. Apte

The AP-S Committee on Promoting Equality (COPE) is partnering with Engineering Projects in Community Service (EPICS) in IEEE to bring US$50,000 to support AP-S community projects (see Figure 7). The EPICS in IEEE service-learning projects allow students to work with IEEE members and community organizations to address their communities' local environmental and climate change technological needs. Through their service-learning projects, the students will also develop critical knowledge and skills to help them succeed in their future engineering careers.

In August 2023, the proposal of a joint initiative of AP-S COPE with EPICS in IEEE was initiated by Prof. Chew, chair of AP-S COPE, and Dr. Ajay Poddar, chair of AP-S Chapter Activity Committee (CAC), for engaging IEEE Student Branch Chapters (SBCs) and AP-S members worldwide, motivating them for science technology, engineering, and mathematics (STEM) activities. In due course, US$50,000 was approved under this initiative to be used from the AP-S COPE budget for funding projects

FIGURE 7. A flyer of the call for proposal of EPICS in IEEE with AP-S Collaboration.

under this collaboration. A call for proposals was sent out in this regard.

The year 2024 is the 75th anniversary of the AP-S; hence, the new logo was also used in this call for proposal and the flyer.

The EPICS in IEEE received more than 138 project proposals, and based on their review rubric for final consideration for funding under the joint initiative with AP-S COPE, a list of 21 projects was then shared with the AP-S COPE Committee members, who agreed to serve as project reviewers and select the projects for funding that were eligible and also fall within the AP-S COPE scope to receive the funding. The list included a description of each proposal and a link to a folder with the full proposals to review further.

After a careful review of the projects, the ones listed in Table 1 were selected to receive funding under this joint initiative of EPICS and AP-S COPE.

IEEE AP-S–COPE COSPONSORED PROGRAM EU-REKA 2023

AP-S COPE has been cosponsoring the Eu-Reka program (see Figure 8), a flagship event of the IEEE Education Society, Pune Section, with the prime objective to "Elevate the educational Reka" (line) at all levels of society. It is an initiative that ensures inclusive and equitable quality education and promotes lifelong learning opportunities. Eu-Reka empowers and encourages college students to promote education as ambassadors of education.

During the Electromagnetics Week programs that took place in Pune, India, the Eu-Reka 2023 program's felicitation was held on 8 December at the Yashada, Rajbhavan Complex, Pune. Prof. Stefano Maci, AP-S president, presided over the ceremony, and Dr. Poddar, AP-S COPE vice-chair, felicitated the students on this occasion. Dr. Anisha Apte, AP-S COPE vice-chair, also attended the event with many other IEEE dignitaries from the Pune Section, including Prof. G.S. Mani, Prof. Mandar Bhavalkar, Dr. Prashant Joshi, Dr. Prutha Kulkarni, Dr. Yerram Ravinder, Prof. Abhijit Khurpe, Neha Sharma, along with AP-S Special Interest Group on Humanitarian Technologies (SIGHT) Chair Dr. Jawad Siddiqui, IEEE North Jersey Section AP-S Vice-Chair Prof. Edip Niver and many other AP-S members and nonmembers. Dr. Poddar motivated the students with his keynote talk, and Prof. Maci congratulated the effort and the growing success of this pan-India activity.

PLEASE VISIT THE AP-S–COPE WEBSITE FOR MORE PROJECTS COSPONSORED BY COPE

If you wish to publish your AP-S COPE cosponsored projects in this column and/or upload them to the AP-S COPE website, please send your write-ups to Dr. Apte at anisha_apte@ieee.org. We look forward to your contributions toward promoting equality among underprivileged students.

AP-S COPE FUNDING REQUEST

UPCOMING DEADLINE FOR 2024: 30 SEPTEMBER 2024

AP-S COPE aims to fund projects that provide good use of IEEE expertise, exhibit strong technological components, and have clear engagement with the community, indicating that the proposed solution is both desired and feasible. Established relationships, ideally documented with stakeholders involved in the project, implementation with a clear, detailed, and credible project assessment matrix, project implementation plan, and budget. The team should demonstrate its combined experience to execute the project, identify and address potential risks credibly, and ensure that the project has a real, tangible impact. If a proposal is missing the mark on two or more areas, it might not be ready for funding.

FIGURE 8. Eu-Reka program felicitation event in Pune, December 2023.

TABLE 1. THE PROJECTS THAT WERE SELECTED TO RECEIVE FUNDING UNDER A JOINT INITIATIVE OF THE EPICS AND AP-S COPE.

US$5,300	An AIoT-Powered Smart Agricultural System for Pests Forecasting and Management	Indonesia
US$5,870	Revitalizing Rural Schools and Empowering Indigenous Communities	Malaysia
US$4,500	Credit-Based Smart Garbage Disposal Bin	India
US$3,900	Mitigating the Taxonomic Impediment Problem of Plants Using ML and Citizen Science	Lebanon
US$3,200	Solar PV-Powered IoT—Sustainable Smart Greenhouse	USA

IoT: Internet of Things; AIoT: Artificial Intelligence of Things; ML: machine learning.

The areas of focus include that AP-S COPE is prioritizing immediate impact on poverty mitigation and inequality reduction through the following project areas:

- upgradation of marginalized population
- STEM education for the marginalized population
- information and communications technology for the underserved population
- sustainable power sources for the underserved population
- water, sanitation, and hygiene for the underserved population.

Projects must be completed and submitted to the AP-S through final reporting, indicating the status of the project and utilization of funds at the end of each calendar year. Expense vouchers should be submitted as supporting documents for audit. The "AP-S COPE Project Budget Template 2024" spreadsheet should be submitted for the budget proposal during the application process and an expense report on project completion. Fund utilization should be clearly indicated. Each AP-S Chapter/joint Chapter/SBC may submit multiple proposals. Proposals are subject to review and scrutiny, and the total project funding will not exceed US$3,000 for any calendar year. They are encouraged to submit proposals to AP-S SIGHT and AP-S CAC for additional funding.

AP-S Chapter officers/members can fill out and submit the AP-S COPE—Special Project Funding Request Form 2024 using the probability density function and Word versions of the "AP-S Special Project Request Form" found on the COPE website at aps-cope.org. Chapter officers can also submit their write-ups, photos, and videos of COPE events to be uploaded to the COPE website and/or to be published in the *IEEE Antennas and Propagation Magazine* "COPE Corner" column.

TURNSTILE *(continued from page 124)*

Loeb remains optimistic [1]: "We also begin to see our opportunities. I am convinced that if we are to seize them all humanity must learn to lean into science. It is science that will give us a new vocabulary for the upward trajectory of our civilization…and … best determine why the psychological costs of encounters with ETC [extraterrestrial civilization] will become, in practice, benefits." Amen!

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