

# AP-S TC's Annual Activity Report

## TC1

### TC on Antennas

TC Chair: Maria Pour

Reporting date: December 23, 2025

## Summary of TC1 activities for 2025

### 1. Flagship annual conferences

- Attending members of TC1 met on July 18, 2025 at the AP-S/URSI 2025.
- Topics for Track1 of the AP-S/URSI 2026 have been finalized by TC1.
- TC1 Chair will be the lead Track Chair for Track 1 on Antennas for the AP-S/URSI 2026 and three TC1's members, Jacob Adams, Adam Mehrabani, and Manuel Arrebola, will serve as Track Chair along with the other two selected by the TPC.
- TC1 along with TC2 will organize a special session on "*Sub-THz Antenna and Array Technology*" for the AP-S/URSI 2026.

### 2. Publications

- TC1 and TC8 proposed a special issue on "*Emerging Materials and Enabling Technologies for Antenna Designs and Wireless Communication*" to the *IEEE Transactions on Antennas and Propagation*

### 3. Events

- Maria Pour organized an invited talk "*Designing the Future: Antennas and High Frequency Devices with Ansys Electronics Desktop*" on Sept. 5, 2025 at the University of Alabama in Huntsville.
- Kunio Sakakibara organized an "*IEEE AP-S MGA Lecture Event: Recent trends and challenges in antennas and propagation technologies by IEEE AP-S Representatives*" on Sept. 16, 2025 at Tokyo University of Agriculture and Technology, Koganei Campus.
- Kubilay Sertel organized an "*IEEE AP-S Networking and Fall Semester Kickoff Social*" on Sept. 18, 2025 at the Ohio State University.
- Jacob Adams organized an invited talk "*Recent Developments in the Nuvotronics PolyStrata Process: Enabling Next-Generation Phased Arrays*" on Sept. 26, 2025 at North Carolina State University.
- Manuel Arrebola organized an invited talk "*Gradient and Modulated Metasurfaces for millimeter and sub-millimeter Wave Antennas*" on Oct. 27, 2025 at ETSI Telecomunicacion, Universidad Politécnica de Madrid, Spain.
- Jessica Ruyle along with the joint student branch of IEEE AP-S and MTT organized two events on Oct. 27 and Nov. 5, 2025. The first event was geared toward recruitment of undergrads in IEEE to join the AP-S and MTT societies. The second event was a workshop on the use of MatLab, ADS, and HFSS.
- Adam Mehrabani organized an invited talk "*Array Theory and Negative Refraction*" delivered by Dr. Steven Weiss on Nov. 19, 2025 at the University of Alabama in Huntsville.
- Hui Li organized a workshop on Antennas and Propagation consisting of three invited talks "*Leaky-Wave Antennas: Generation and Control of Airy Beams and OAM Vortex Beams*," "*Near-Field Beam Control Technologies and Applications for Antenna Arrays*," and "*Cosmic Microwave Background and Advanced Radio Astronomy Observation Technologies*," on Nov. 29, 2025 at Dalian University of Technology.

### 4. Membership

Two members of TC1 stepped down in August 2025. New vice chair (Nelson Fonseca) was appointed in Sept. 2025. We added a new member, Hui Li, approved on November 8, 2025. She has been quite active since joining our committee. An inactive member has been removed from TC1.

## **5. Any other activities**

- Nelson Fonseca will support the 2026 *Wireless, Antenna & Microwave Symposium* by serving in the Keynote and Invited Talks committee.

## **6. Future plans**

TC1 will continue to organize invited talks, workshops, and seminars in 2026, as well as to lead Track Chair for Track 1 on Antennas for the AP-S/URSI 2026 conference. In addition, TC1 has been working on the School of Antennas to develop relevant short courses and collaborate with other educators and leaders within the IEEE AP-S community. So far, three topics listed below have been selected by Hui Li along with their potential speakers, initially scheduled for late December. However, it is moved to early 2026 to avoid potential budget conflict. Two other members, Nelson Fonseca and Jacob Adams, will also help with the School of Antennas initiative in 2026.

1. Terminal Antenna Design – covering design principles, performance optimization, and integration techniques for modern wireless terminals and handheld devices.
2. AI and Machine Learning for Antenna Modeling and Design – focusing on physics-informed learning, surrogate modeling, and data-driven optimization approaches.
3. Metasurface Antennas and Reconfigurable Apertures – addressing analytical modeling, design methodologies, and emerging applications in 6G communications and electromagnetic sensing.

## **7. Additional comments**

NA

# AP-S TC's Annual Activity Report

TC No. 2

TC on Arrays

TC Chair: Yong-Mei Pan

Reporting date: December 25th, 2025

## Summary of TC activities for 2025

### 1. Flagship annual conferences

- Held the first in-person TC meeting on Friday, July 18, 2025, during AP-S/URSI 2025, chaired by TC Vice-Chair Prof. Diego Caratelli.
- Scheduled the second in-person TC meeting to take place during AP-S/URSI 2026.
- Proposed/co-proposed **two special sessions** (**Channel Modeling and Antenna/Array Developments for UAVs**; Sub-THz Antenna and Array Technologies: Frontiers in Design, Materials, Fabrication, Packaging, and Characterization) and one full-day workshop (Adaptive Arrays & Reconfigurable Intelligent Surfaces) for AP-S/URSI 2026.

### 2. Publications

- Co-proposed (**but not successful**) a special issue to IEEE AWPL together with TC-4 (*Metamaterials and Phased-Array Technologies for Advanced Beamforming and Beam Steering in 6G*, Guest editors: Dr. Stefano Vellucci; Prof. Alessio Monti; Prof. Can Ding; Prof. Yong Mei Pan; Prof. Nima Ghalichechian; Prof. Zhi Hao Jiang)

### 3. Events

- **Workshop: Emerging Technologies in Millimeter-Wave Array Antennas**  
Organized by Dr. Zhi-Hao Jiang and Dr. Yong-Mei Pan  
Held during China Microwave Week, Xi'an, China, May 19, 2025.
- **Workshop: Emerging Technologies in Transmitarray/Lens Antennas and RISs for Beyond 5G Systems**  
Organized by Dr. Pei-Yuan Qin and Dr. Takashi Tomura  
Held during the International Workshop on Future Antennas, Perth, Australia, June 10, 2025.
- **Workshop: Metamaterial and Phased Array Technologies for 6G** (Co-organized with TC-4)  
Organized by Dr. Can Ding, Dr. Alessio Monti, and Dr. Pei-Yuan Qin  
Held during the IEEE AP-S TC4, TC2, and UTS GBDTC Workshop, Sydney, Australia, August 25, 2025.
- **Special Session: mm-Wave and THz Circuits and Systems**  
Organized by Dr. Hyunchul Ku and Dr. Diego Caratelli  
Held during the IEEE European Microwave Week, Utrecht, The Netherlands, September 23, 2025.
- **Workshop: Recent Advancements in phased arrays**  
Organized by Dr. Mauro Ettore and Dr. Nima Ghalichechian  
Held during the IEEE Microwaves, Antennas and Propagation Conference, Kochi, India, December 14-18, 2025.

### 4. Membership

The TC's membership has not yet been updated.

### 5. Any other activities

### 6. Future plans

Currently, for 2026, we have planned five workshops on array-related topics to be held at major conferences such as AP-S/URSI, LACAP, CMW, and EuCAP.

In the future, we aim to organize a broader range of related technical activities.

## **7. Additional comments**

# AP-S TC's Annual Activity Report

**TC No. 3**

**TC on Propagation and Scattering**

**TC Chair: Thomas Kürner (TU Braunschweig, Germany)**

**Reporting date: December 22, 2025**

## Summary of TC activities for 2025

### 1. Flagship annual conferences

TC3 has submitted two proposals for special sessions at AP-S 2026:

1. Joint Session with TC2 and EurAAP WG Propagation on “Antennas and Propagation for Drones” (Working title)
2. Joint Session with IEEE VTS Propagation Committee on “Propagation Models for Mobility” (Working Title)

Both proposals have been accepted. TC3 is working on consolidating paper submissions.

### 2. Publications

TC plans to propose special issues to the AP-S Magazine and has ideas for two topics:

1. Propagation and Channel Models for Non-terrestrial Networks
2. Propagation and Channel Modeling in Standardization

The starting point for this activity will be the planned workshops mentioned below.

### 3. Events

TC3 plans two pre-conference workshops:

- (Pre-) Conference Workshop of Propagation Models for Non-terrestrial Networks at AP-S 2026
- An AP-S TC3 Pre-Conference Workshop on Propagation and Channel Modeling in Standardization is planned at URSI GASS 2026 and has been submitted.

In addition to two special sessions at AP-S 26 also a special session at the URSI GA 2026 has been submitted and accepted. The title of the special session is “IEEE AP-S TC3: Measurements & Channel Characterization for mmWave and THz Communications”.

### 4. Membership

TC3 has 10 members. In order to better handle all planned activities TC3 is considering to slightly increase its membership by 2 members. Two candidates have indicated their interest and have been proposed to the TDC chair for nomination in the year 2026. The list of members is provided in table 1

**Table 1: 2025 list of TC3 Members**

Name	Affiliation	Country	Gender
<b>Thomas Kürner (Chair)</b>	Technische Universität Braunschweig	Germany	M
Slawomir Ambroziak (Vice-Chair)	Gdansk Technical University	Poland	M
Carlo Riva	Politecnico di Milano	Italy	M
Sana Salous	Durham University	UK	F
Andreas F. Molisch	University of Southern California	USA	M
David Matolak	University of South Carolina	USA	M

Juni-ichi Takada	Tokyo Institute of Technology	Japan	M
Ke Guan	Beijing Jiaotong University	China	M
Mansoor Shafi	Spark NZ Ltd.	New Zealand	M
Jianhua Zhang	Beijing University of Post and Telecommunication	China	F

## 5. Any other activities

- TC3 has established a cloud storage for its documents and an e-mail reflector. Both of them are provided by the chair's university.
- TC3 held regular webcons with its members. Minutes are taken and action items are followed-up in the subsequent webcon. After the kick-off webcon on 20 December 2024, 7 webcons have taken place in 2025.
- TC3 has issued a call for Short-term Scientific Missions and received 14 applications. An evaluation committee consisting of 4 TC3 members has selected 3 potential grantees (2 male, 1 female student), which have been approved by the IEEE VP TAB in December 2025. The total amount of the three grants is 10.000 US\$. The home institutions of the three students are located in Canada, Columbia and the United Kingdom.
- TC3 has set-up liaison with the following three other groups working on propagation:
  - o EurAAP Working Group Propagation
  - o IEEE Vehicular Technology Society – Propagation Committee
  - o URSI Commission F

## 6. Future plans

- For 2026 and coming years we have plans to continue and consolidate the already started activities from 2025. New activities in this context are the initiation of a special issue in the AP Magazine and the initiation of Propagation Awards.
- For 2026 in addition to the webcons at least one face-to-face meeting is planned either at AP-S 2026 or URSI GA 2026 or both. At both conferences TC3 members are planning to attend.

## 7. Additional comments

There are no further comments at this stage.

# AP-S TC's Annual Activity Report

**TC No. 4**

**TC on Metamaterials**

**TC Chair: Alessio Monti**

**Reporting date: January 1, 2026**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

TC4 proposed to organize or co-organize two special sessions for AP-S/URSI 2026:

- “Challenges and solutions for using metasurfaces and metagratings in next-generation wireless communication and sensing systems” (TC4 organizer: Mohammadi Estakhri)
- “Advanced Numerical Modelling and Simulation of Metasurfaces” (in collaboration with TC6; TC4 organizer: Enrica Martini)

The two special session proposals have been accepted.

In addition, TC4 is providing support to organizing committee of the APS-URSI 2026. The following members expressed their willingness to contribute as a Co-Track Chair for the “Metamaterials” track: Alessio Monti, Douglas Werner, Enrica Martini, Stefano Vellucci.

### **2. Publications**

TC4, in collaboration with TC2, has submitted a proposal for the IEEE AWPL 2026 Special Cluster entitled “Metamaterials and Phased-Array Technologies for Advanced Beamforming and Beam Steering in 6G” (TC4 members involved: Stefano Vellucci, Alessio Monti, Can Ding; Outcome: not selected). In addition, many TC members actively contribute to the IEEE AP-S journals as “associated editor”, “track editor” or “senior editor”.

### **3. Events**

During 2025, TC4 organized or co-organized several events:

1. *Seminar on “Recent Advancements of Metasurfaces towards High Frequency Applications” by Prof. Somak Bhattacharyya (June 30th, 2025 – University of ROMA TRE, Rome, Italy).*

On June 30th, 2025, the Department of Industrial, Electronic and Mechanical Engineering at the University of Roma TRE hosted a technical seminar by Prof. Somak Bhattacharyya (IIT BHU, India), IEEE Senior Member, Life Fellow of The Optical Society of India and Fellow of IETE and Antenna Test and Measurement Society (ATMS), India. The talk, titled “Recent Advancements of Metasurfaces towards High Frequency Applications”, focused on the latest developments in the design of metasurfaces for applications such as absorbers, polarizers, filters, and phase shifters, including recent progress involving graphene-based tunable structures.

2. *Workshop on “Metamaterials and Phased Array Technologies for 6G” (August 25, 2025 – University of Technology Sydney, Sydney, Australia).*

On August 25th, 2025, the University of Technology Sydney (UTS) Global Big Data Technologies Centre (GBDTC) hosted the IEEE AP-S TC and UTS GBDTC Workshop on Metamaterials and Phased Array Technologies for 6G bring together leading researchers and experts to discuss the latest advances and visions in metamaterials and phased array technologies. The half-day workshop featured keynote and technical talks from the IEEE AP-S President, Chairs of IEEE AP-S Technical Committees (TC4: Metamaterials and TC2: Arrays), and internationally recognized scholars, covering topics from metamaterial-enabled antennas to advanced phased array design methodologies. It was one of the first workshops organised by IEEE AP-S Technical Committees, providing a unique platform for academic researchers,

industry professionals, and students to exchange ideas, foster collaborations, and explore future research directions in this rapidly evolving field.

Organized by A/Prof. Can Ding and A/Prof. Alessio Monti (TC4: Metamaterials), A/Prof. Peiyuan Qin, the event was sponsored by the IEEE AP-S Technical Committee (TC) 4: Metamaterials and the University of Technology Sydney (UTS) Global Big Data Technologies Center (GBDTC), with co-sponsorship from IEEE AP-S TC2: Arrays and IEEE AP-S Young Professionals.

3. *Special session on “Scattering and radiation engineering with metastructures: fundamentals and applications” (September 10th, 2025 - 26th edition of the International Conference on Electromagnetics in Advanced Applications, Palermo, Italy).*

The special session highlighted 12 engaging oral presentations, showcasing the latest advancements and cutting-edge research in the dynamic field of scattering and radiation engineering with metastructures.

#### **4. Membership**

A new member (Prof. Pai-Yen Chen, Department of Electrical and Computer Engineering at the University of Illinois Chicago) has been added to TC4 starting from September 15th, 2025.

#### **5. Any other activities**

#### **6. Future plans**

For 2026, TC4 is planning to organize or co-organize — on a tentative basis — the following activities: Topical Workshop on Metamaterials (University of Illinois Chicago); Training Event / Doctoral school on Metamaterials (University of Roma Tre); Distinguished Lecture/Young Professional Award Event (University of Technology Sydney); Organization of a special session at EuCAP 2026.

#### **7. Additional comments**

Most of the activities that have been already organized are reported in the TC website with links, pictures and images (<https://www.ieeeaps.org/committees/tc/tc4>).

# AP-S TC's Annual Activity Report

**TC No. 5**

**TC on Electromagnetics & Fundamentals**

**TC Chair: George Eleftheriades**

**Reporting date: December 31, 2025**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

There is a plan to organize a short course on Quantum Electromagnetics during AP-S/URSI 2026.

### **2. Publications**

Nothing on the horizon at this point in time.

### **3. Events**

We have organized and hosted several seminars at the University of Toronto. Some of this information is posted on the TC5 website.

- July 21, 2025: "Prior-Knowledge guided, Deep Learning-Enabled Generative Meta-antenna Design", by Prof. Zhi Ning Chen, Professor at the National University of Singapore.
- July 22, 2025: "Tailoring EM Waves at Will with Discrete Metasurfaces and Active Directional Sources", by Prof. Alex Wong, City University, Hong Kong.
- June 2, 2025 "How Close Can Far-Field Be? Getting the Best Out of Your Measurement Range", by Dr. Benoit Derat, Rohde & Schwarz.
- April 7, 2025: "Photonic Time Crystals and Timetronics", by Prof. Nikolay Zheludev, U. Southampton, UK.

Profs Marco Antoniades and George Eleftheriades are organizing a special session at ACES May-2026 on the theory and applications of metastructures.

Prof. Zhi Ning Chen is organizing "The 6th Marina Forum (Mar-For 2026) on Metantennas and Beamsteering Antennas" (<https://marinaforum.org/>) in March 2026

More will likely follow but there is no specific plan at this point in time.

### **4. Membership**

Prof. Marco Antoniades was added as a new member of TC5.

### **5. Any other activities**

### **6. Future plans**

This is an evolving process.

### **7. Additional comments**

# AP-S TC's Annual Activity Report

**TC No. 6**

**TC on Computational Electromagnetics**

**TC Chair: Zhen Peng**

**Reporting date: December 28, 2025**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

- CEM Academy at AP-S/URSI 2026: We plan to have 8 lectures covering a full-day event or two half-day events. Each lecture will be delivered by a recognized expert and will be free to registered participants. Students completing the program receive a certificate.
- Panel Discussion at AP-S/URSI 2026: We plan to organize a Panel Discussion on CEM in Advancing Electromagnetic Sciences. A high-level panel featuring 4–5 experts from academia, industry, and government. Panelists will discuss the relevance of CEM in advancing EM science, open challenges, and emerging opportunities. The goal is to highlight the role of CEM to the broader EM community, boost research interests in CEM, and attract young researchers in this area.
- Four special Sessions approved at AP-S/URSI 2026: (1) Theoretical Foundations of CEM for advanced applications, (2) Electromagnetics for NextG Wireless: From Physics to Intelligence, (3) Learning-based and unconventional techniques for Inverse Scattering Problems, (4) Intersections of Quantum and Electromagnetic Technologies
- Workshop accepted at the IMS 2026. The workshop title is Microwave Quantum Engineering: From Methods to Hardware and Algorithms

### **2. Publications**

- Nothing to report on publications.

### **3. Events**

- Panel Discussion at ACES 2025: Organized a CEM Panel on Next-Gen Computational Electromagnetics: Challenges and Opportunities in Quantum, AI, Inverse Design and Biomedicine
- First meeting of IEEE APS TC-6 on Computational Electromagnetics: Held on July 15, 2025, at IEEE APS URSI 2025 in Ottawa, Canada. The committee discussed upcoming technical events, future agenda, and special sessions/panels for the calendar year 2025-2026.
- Convened Session at EuCAP 2026: Fundamental challenges and novel methodologies in the next-generation computational electromagnetics

### **4. Membership**

- Nothing to report on the changes to Membership.

### **5. Any other activities**

We will organize special sessions and propose short courses at the ACES 2026 conference.

### **6. Future plans**

- Establish TC-6 as a hub for numerical methods, benchmarks, and training in Computational Electromagnetics (CEM).
- Bridge academia, industry, and government for impactful and interesting problems (digital twins, inverse design, EMI/EMC, quantum/AI for CEM).

- Grow and serve the undergraduate/graduate students and early-career researchers in topics related to TC-6.

## **7. Additional comments**

# AP-S TC's Annual Activity Report

**TC No. 7**

**TC on Antenna Measurement**

**TC Chair: Sima Noghianian**

**Reporting date: December 28, 2025**

## Summary of TC activities for 2025

### 1. Flagship annual conferences

- AP-S/URSI 2025,

Special session: **Advances in Antenna Measurement Techniques and Emerging Applications**

(organizers: Lars Foged, Sima Noghianian)

- AP-S/URSI 2026,

Accepted special session on **Measurement and Characterization of Vehicular Antennas in Realistic Propagation Environments**

- Planning on an in-person TCAM members' meeting at AP-S/URSI 2026.

### 2. Publications

One Paper in IEEE Antennas and Propagation Magazine under Antenna Measurement Column by Beniot Drat, entitled: **Over-The-Air Measurement Innovation – Our Journey in the Last Decade and the Road Ahead,** Accepted for publication in the December issue.

Plan for another paper in early 2026 under Antenna Measurement Column in the IEEE AP Magazine, by Vince Rodriguez and Lars Foged

### 3. Events

TCAM organized workshops, invited speakers, special session at AP-S/URSI 2025, in addition to co-sponsorship of AMTA student day. Details are tabulated below.

#	Location	Date	Collaboration With	Title	Speakers
1	Nice, France	June 30	EMC Society	Advances in Antenna and EMC Measurement Techniques	Benoit Drat (TCAM/EMC-S) (EMC-S): Laurent Le Coq Ramiro Serra Guillaume Andrieu Garth D'Abreu Juan Antonio del Real Walid El Hajj
2	Spain, Madrid	September 12	EMC-S, and the AP-S Standards Committee	New Trends in Antenna Measurements	V. Rodriguez (TCAM) V. Monebhurrun (SC) L. Foged (SC) M. Azadifar (TCAM) M. Sierra Castañer (local chapter)
3	Nairobi, Kenya	October 22	IMAS 2025	Ground to Orbit: Measuring Antennas for Space-Based Applications in the African Context	Parinaz Naseri, Invited Speaker (TCAM)
4	São Paulo, Brazil	October 23	AP-S Standard Committee, EMC-S DL	Workshop on Antenna Measurements, Standards, and EMC	Vince Rodriguez (SC) Nicolas Mora Parra (EMC-S)
5	Dubai, UAE	October 29	AP-S DL, MTT-S DL,	International Antenna Workshop	B. Tilli (Chapter) L. Abasha (local)

			UAE Chapter		M. Sanduleanu (local) G. Dun (TCAM) A. Ghiotto (MTT DL) G. Chattopadhyay (MTT) S. Noghianian (AP DL) A. Shamim S. Sharma (AP DL) Z. Akhtar (TCAM) P. Leye (TCAM)
6	Tucson, USA	November 4	AMTA Student Day	Trends and Advancements on Measurement Techniques for Emerging Wireless Technologies	Tian Loh (TCAM), Invited Speaker, and sponsorship of student day activities
7	Cochin, India	December 13	AP-S Standard Committee, EMC-S DL, AP-S DL, MTT-DL, Sensors DL, Mathworks, AMTA	IEEE ISDL-TCAM One Day Workshop	G. Chattopadhyay (MTT) S. Sharma (AP DL) G. Shaker (Sensors) O. Breinbjerg (TCAM) V. Monebhurrn (SC) L. Foged (SC) C. Kumar (TCAM) J. Akhtar (EMC-S) S. Kulkarni (MathWorks) M. Bozzi (MTT) A. Kedar (local)
8	Ottawa, Canada	July	Special Session	Advances in Antenna Measurement Techniques and Emerging Applications	10 papers

#### 4. Membership

The TCAM is planning to change membership. Sima Noghianian, Ali Gharsallah, Wanchen Yang and Riva Guillermo will leave the committee. Vince Rodriguez is proposed as the new TC chair (currently vice-chair), and Tian Loh as the new vice-chair. Two new members proposed are Manuel Sierra Castañer and Tara Kellog.

#### 5. Any other activities

TC will be starting to do Antenna Measurement, in continuation with what the Standard Committee and Vikas Monebhurrn have been doing. Tian Loh will be leading this effort.

#### 6. Future plans

The TC will continue to offer workshops and webinars in 2026 (Regions 8-10), as well as special sessions and collaboration with AMTA.

- Sponsorship of AMTA Student Day (\$1,500).
- Workshops in the following regions: Latin America-Region 9 (\$3,000), Africa-Region 8 (\$3,500), India/China-Region 10 (\$4000)

**7. Additional comments:** A brief description of all the past activities is posted on TCAM (TC7) website (<https://www.ieeeaps.org/committees/tc/tc7>).

## AP-S TC-8's Annual Activity Report

TC No. 8

TC on Wireless Communications

TC Chair: Prof. Atif Shamim

Reporting date: December 23, 2025

### Summary of TC activities for 2025

#### 1. Flagship Annual Conferences

The first official online meeting for IEEE Antennas and Propagation Society (APS) Technical Committee 8 (TC-8) on Wireless Communications happened in March 2025, while the first in-person meeting was held on **July 15, 2025**, during the IEEE APS/URSI Symposium in Ottawa, Canada. The meetings marked the formal launch of the committee's activities and provided a platform to discuss the technical direction, potential collaborations, and plans for upcoming special sessions, workshops, and events for the calendar year 2025–2026. Members emphasized the importance of fostering interdisciplinary dialogue, supporting young professionals, and advancing research in wireless communication technologies.

For the 2026 edition of our flagship conference (IEEE APS/URSI 2026), a special session on “**Emerging Materials and Enabling Technologies for Antenna Design and Wireless Communication**” has already been proposed from TC-8 platform. Well known speakers from around the world have committed to that session. This proposal has been accepted.

#### 2. Publication

A special issue targeted for IEEE TAP, titled “**Emerging Materials and Enabling Technologies for Antenna Designs and Wireless Communication**” has been submitted in collaboration with the support of multiple TCs (TC-1 Antennas, TC-2 Arrays, TC-4 Metamaterials, TC-7 Antenna Measurements, TC-11 Health & Medicine, TC-12 Space). The proposal has been submitted by TC-8 (Yang Yang, Atif Shamim, Eva Rajo-Iglesias and Wonbin Hong) along with guest editor Yang Hao. This proposal has gone through one review cycle, and the TAP editorial board has viewed it positively. They have given us minor revisions, and we have submitted the revised version. We are still waiting for the final approval.

#### 3. Events

In the year 2025, TC-8 has been actively engaged in organizing and supporting several technical and professional development events. Key highlights include

- **IEEE Young Professional Ambassador Talk (March 21, 2025)**, which provided a platform for early-career researchers to exchange ideas on “Optics and antenna theory converge at Huygens; principle of diffraction” by Dr. Daniel Headland, organized by TC member Prof. Yang Yang at New South Wales Section, AP-S MTT-S Joint Chapter, Adelaide.
- **IEEE Inter-society Distinguished Lecturer Workshop (March 5, 2025)**, fostering collaboration across multiple IEEE societies on the topic “Latest Technology trends in Wireless Communications and Antenna Technologies” Electrical and Computer Engineering, The College of New Jersey organized by TC member Prof. Mahrukh Khan.
- **Technical seminars** hosted by the IEEE Ottawa Chapter brought forward cutting-edge discussions organized by TC member Dr. Ahmed Abdellatif:
  - “**Emerging Transceiver Architectures and Technologies for Future Wireless Systems**” (Feb 6, 2025) by Prof. Ke Wu
  - “**How Close Can Far Fields Be? Getting the Best out of Your Measurement Range**” (June 3, 2025) by Prof. Benoit Derat. These events attracted significant participation from both academia and industry.
- The **meeting of TC-8 during IEEE APS URSI 2025, Ottawa** further consolidated discussions on the committee's vision and provided direction for international collaborations.
- **IEEE APS Distinguished Lecturer Technical Talk** on “**Empowering Connectivity: Wearable Antennas for Wi-fi and 5G Applications and Career Navigation: Academia or Industry (Personal Experience)**” by Dr. Sima Noghianian, Distinguished Hardware Engineer Commscope, IEEE APS Distinguished Lecturer (**Oct 10, 2025**), Electrical and Computer Engineering, The College of New Jersey organized by TC member Prof. Mahrukh Khan.
- A **Focus session** on LEO SAT is organized in this year's **IEEE MAPCON in Kochi, India (Dec 14-18, 2025)** This is the first inter-society collaboration on the topic of **SATCOM (AP-S/MTT-S)** organized by TC Vice Chair Prof.

Wonbin Hong and Prof. Eva Rajo-Iglesias from the TC-8 committee. Prof. Eva Roja represented AP-S TC-8 and delivered the invited speech on the topic of Gap-waveguides.



a) Prof. Eva Rajo-Iglesias' talk on Gap-waveguides, IEEE MAPCON, Kochi, India, Dec 14-18, 2025, b) IEEE APS URSI 2025 official in-person meeting for IEEE TC-8



c) IEEE APS Distinguished Lecturer Technical Talk, Dr. Sima Noghianian, The College of New Jersey (Oct 10, 2025) d) IEEE Inter-society Distinguished Lecturer Workshop (March 5, 2025)

#### 4. TC Membership

Prof. Atif Shamim (Chair), Prof. Wonbin Hong (Vice Chair), Dr. Apala Banerjee (Secretary), Dr. Duixian Liu, Dr. Jiang Zhu, Prof. Natalia Nikolova, Dr. Ahmed Abdellatif, Prof. Syeda Fizzah Jilani, Dr. Rod Waterhouse, Prof. Eva Roja Iglesias, Prof. Mahrukh Khan and Prof. Yang Yang .Other prominent members in this field are under consideration.

#### 5. Any other activities

IEEE AP-S TC-8 is building associative collaboration with other societies for future and upcoming seminars, workshops and technical lectures.

#### 6. Future Plans

TC-8 is planning a diverse portfolio of international workshops to expand its global footprint. Upcoming initiatives include

- **Workshop in Egypt in 2025-2026** on *Recent Advances in Wireless Communications*, proposed by Dr.Ahmed Abdellatif.
- **Special Session in IEEE APS/URSI 2026** on “Emerging Materials and Enabling Technologies for Antenna Design and Wireless Communication”.
- For 2026, several workshops are planned: a **Workshop in Australia** (July 2026) led by Prof. Yang Yang, a **Workshop in South Korea (July–August 2026)** focusing on *Integrated Sensing and Communication for Maritime Wireless Applications*.
- **Workshop in Saudi Arabia (April–May 2026)** by Prof. Atif Shamim on *Next-Gen Wireless: Technologies and Trends on Smart Antennas and Reconfigurable Intelligent Surfaces*.

#### 7. Additional Comments

In summary, TC-8 on Wireless Communications has made a strong start with impactful events in 2025 and is strategically planning a series of international workshops for 2025–2026. The committee aims to serve as a hub for advancing innovation in wireless communication, strengthening academic-industry partnerships, and engaging the global research community.

# AP-S TC 9 Annual Activity Report

**TC No. 9**

**TC on Security**

**TC Chair: Satish K Sharma**

**Reporting date: December 28, 2025**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

**The TC 9:**

- organized 2025 IEEE AP-S Defense Panel Session in Ottawa, Canada
- will organize the 2026 IEEE AP-S Defense Panel Session in Detroit, MI, USA

#### **relevant events for AP-S/URSI 2026**

- Two special sessions in 2026 IEEE AP-S: (i) RF/Microwave Systems and Antennas for Space-Based Security and Disaster Management Applications, and (ii) Role of RF Spectrum and Policy in Antenna Designs for Defense, Security, and Disaster Management

### **2. Publications**

No publication plans at this stage

### **3. Events**

- organized focused session (“Adaptive and Resilient Antennas and Circuit Systems for Security, Defense, and Disaster Response,” at the IEEE Microwaves, Antennas, and Propagation Conference (MAPCON), Kochi, Kerala, India, Dec. 14-18, 2025
- organized a half-day workshop in APMC 2025 Jeju, South Korea
- organized a Hybrid workshop 2025 at IIT Patna, India
- will organize a Panel Session and Special Session during 6th International Telecommunications Conference (ITC-Egypt’2026), Cairo, Egypt.
  - will organize a Special Session on Defense and Security in the 2026 Microwave, Antennas, and Propagation Conference (MAPCON), December 2026
  - will organize a special focused session on Defense and Next Generation Communication Technology, 2026 WAMS, Hyderabad, India
  - will organize a Webinar Series on Advanced Electromagnetic Solutions for Defense/Space Applications in Korea, Region 10.

### **4. Membership**

TC inducted two new members, Dr. Amit K Singh (Region 10) and Dr. Gangil Byun (Region 10). One member Prof. Melde has decided to stepdown due to her university engagements there. We will have 11 members for now.

### **5. Any other activities**

Proposing a special issue (*Antennas and Communications Systems for Human Space Exploration and Space-Based Security, Defense, and Disaster Management Applications*) in the IEEE Journal of Selected Topics in Electromagnetics, Antennas and Propagation (JSTEAP)

### **6. Future plans**

For 2026, planned activities are noted.

### **7. Additional comments**

None

# AP-S TC's Annual Activity Report

**TC No. 10**

**TC on Environment**

**TC Chair: George Shaker**

**Reporting date: December 31, 2025**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

The TC proposed a special session at AP-S/URSI 2026. It was approved.

### **2. Publications**

No publications were proposed or planned during 2025.

### **3. Events**

- Launch of Low-Cost Environment-Friendly Antenna Measurement Device Campaign – IMAS 2025, Kenya
- MGA Workshop 2025 – Egypt
- MAPCON 2025 – India
- Participated in the European School of Antennas

### **4. Membership**

Added one new member during 2025.

Added another one new member for 2026.

### **5. Any other activities**

None reported.

### **6. Future plans**

Plans to organize events at the following conferences in 2026:

- LACAP 2026
- EuCAP 2026
- APS 2026
- ITC 2026
- IMAS 2026
- MAPCON 2026

### **7. Additional comments**

None at this time.

# AP-S TC's Annual Activity Report

**TC No. 11**

**TC on Health and Medicine**

**TC Chair: Qammer Hussain Abbasi**

**Reporting date: December 20, 2025**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

- TC-11 organized a Special Session "Emerging Technologies for Biomedical Applications at the 2025 IEEE AP-S/URSI Symposium in Ottawa, Canada.
- TC-11 submitted proposal for a Special Session "Antenna and propagation for Biomedical Applications at the 2025 IEEE AP-S/URSI Symposium in Ottawa, Canada.
- TC-11 is co-organizing a Special Session "Advances in Antennas and Sensors for Health and Medical Applications" at the IEEE Microwaves, Antennas, and Propagation Conference (MAPCON 2025), Kochi, Kerala, India.
- TC-11 is co-organizing a Special Session "Characterization and Emerging Applications of Electromagnetic Materials and Metamaterials" at the 18th IEEE United Conference on Millimeter Waves and Terahertz Technologies (UCMMT2025) in Nanjing, China.
- TC-11 organized a panel with FIT Conference Islamabad, Pakistan on 15<sup>th</sup> December 2025.
- TC-11 is organizing a BioEM workshop in Ankara, turkey, on 22<sup>nd</sup> December 2025

### **2. Publications**

- Submitted two special issue in IEEE AWPL , Cyber-Physical Security in RIS-Assisted Integrated Sensing and Communication: Antennas and Propagation Perspectives and second one, 'Massive MIMO and Beamforming Technologies
- Submitted Special issue jointly with to IEEE TAP with TC8

### **3. Events**

All details of events on the webpage from TC

<https://www.ieeeaps.org/committees/tc/tc11>

### **4. Membership**

A few inactive members will be changed (Planning in progress)

### **5. Any other activities**

### **6. Future plans**

It will be as per the budget submitted which includes mobility of researchers and workshops

### **7. Additional comments**

# AP-S TC Annual Activity Report

**TC No. 12**

**TC on Space**

**TC Chair: Dirk de Villiers**

**Reporting date: December 31, 2025**

## **Summary of TC activities for 2025**

### **1. Flagship annual conferences**

N/A

### **2. Publications**

The TC-12 was a supporting TC (lead TC-8) in the proposal of a special issue to IEEE TAP entitled: *Emerging Materials and Enabling Technologies for Antenna Designs and Wireless Communication*

### **3. Events**

We co-organized an event at the annual MAPCON conference in Kochi India, on 14 December 2025. The event is titled “Space night” and involved a workshop featuring two speakers. Participants participated in an interactive quiz, with some prizes for the winners. This event was organized in collaboration with the IEEE LEO SatS working group and TC-8.

### **4. Membership**

We plan to expand our membership in 2026. We need more people in the Space Science and Space Antenna fields, since we are currently heavy on radio astronomy and ground-based antenna experts.

### **5. Any other activities**

We are working together with the IEEE LEO SatS Future Directions working group to formalize their status as an intersociety technical committee (with IEEE-MTT and IEEE-GRSS). An MoU has already been signed by MTT, and will be presented to the AP AdCom in due course (hopefully before Q2 2026).

### **6. Future plans**

For 2026 we plan to host at least 2 events – one in Australia and one in South Africa. Both will support local conferences in our field and aim to involve industry more with the academic community.

### **7. Additional comments**

N/A