

This issue includes reports on the Tokyo Section TPC hosted Lectures and The 15th IEEE Tokyo Section Career Development Workshop.

1. The 8th Lecture Meeting hosted by Tokyo Section TPC (co-hosted by LMAG-Tokyo)

The lecture was held online on Tuesday, September 24, 2024, from 15:00 to 16:30. The lecture title was "Robot Audition: Construction of Robot Ear Functions and New Developments in the Multifaceted Fields of Robot Audition" and the speaker was Dr. Kazuhiro Nakadai (Tokyo Institute of Technology/2023IEEE Fellow). The theme of the lecture, robot audition, is a research topic aimed at constructing the auditory functions of robots, first proposed from Japan in 2000. Dr. Nakadai categorized the entire field of robot audition into stages 1.0 to 5.0 and began by providing an overview of past efforts and achievements. He also explained current developments, including drone audition and the analysis of songbirds' calls in wild birds. In addition, he discussed initiatives for supporting people with disabilities, such as sign language translation and generation, as well as speech recognition. He highlighted the technical challenges identified during these efforts and introduced solutions being pursued. To further promote the application of robot audition technology, open-sourcing software is crucial. Finally, Dr. Nakadai pointed out future directions for robot audition technology, including its potential applications in disaster rescue and its contributions to the SDGs. Technically, the introduction of edge computing and machine learning was emphasized as key factors for future development. The lecture had 109 participants, 70 of whom were IEEE members.

2. The 9th Lecture Meeting hosted by Tokyo Section TPC (co-hosted by LMAG-Tokyo)

The IEEE Tokyo Section TPC hosted a lecture, co-sponsored by LMAG Tokyo, on Friday, November 8, 2024. The event took place at the Kikai Shinko Kaikan (in person) and online. The speaker, Dr. Moriyasu Miyazaki (2022 IEEE Fellow) from Mitsubishi Electric Corporation, delivered a presentation titled "Antenna Feeder and BFN Technologies Supporting the Miniaturization of Radar and Satellite Communication Subsystems." A total of 56 attendees participated, including 7 in person and 49 online, with 43 of them being IEEE members.

In building a highly advanced information society that prioritizes safety, security, and comfort, advancements in sensing through radar and information communication networks via wireless technologies are of utmost importance. The demand for innovation drives the development of various systems such as radar, satellite communications, observation, positioning, terrestrial mobile communications, and NTN (Non-Terrestrial Networks). These systems pose multifaceted technological challenges encompassing functionality, performance, size, reliability, and cost, which are quantified as part of the system development process. In this lecture, Dr. Miyazaki first discussed the technical challenges and solutions related to the miniaturization and flattening of antenna feeder and beamforming network (BFN) technologies—critical for compact mobile radar and wireless communication devices. He presented these advancements in a chronological context. Next, he provided an overview of antenna feeder and BFN technologies contributing to the simultaneous enhancement and miniaturization of radar and satellite communication subsystems, driven by the evolution of information networks, semiconductor devices, and RF circuit implementation technologies. The lecture concluded with a lively Q&A session.



Fig.1 Kazuhiro Nakadai giving his talk



Fig.2 Moriyasu Miyazaki giving his talk

3. The 15th IEEE Tokyo Section Career Development Workshop (IEEE LMAG Global Mentoring Initiative)

The 15th IEEE Tokyo Section Career Development Workshop took place on November 16 (Saturday), 2024, at Kikai Shinko Kaikan in Tokyo. The event was organized by the IEEE Tokyo Section's LMAG, YP, SAC, and Tokyo/Shin-etsu Joint Sections WIE, co-hosted by Meiji University SB, Tokyo University of Agriculture and Technology SB, and Tokyo University of Science SB, and sponsored by the IEEE Life Member Committee. A total of 23 participants attended, including 13 students (6 IEEE members) and 10 professionals/educators (9 IEEE members, 5 of whom were life members). Now in its 15th year, the workshop aims to support career development for students and early-career engineers. The program featured brainstorming-style group discussions led by four distinguished facilitators:

- **Group A:** *How effective are mentors in career development, and how should one find one?* (Mentor: Prof. Ohta)
- **Group B:** *Let's picture ourselves 10 years from now, and into the future.* (Mentor: Dr. Sugie)
- **Group C:** *How to communicate your research work clearly to international audiences?* (Mentor: Dr. Shrestha)
- **Group D:** *If you were a university (or technical college) teacher.* (Mentor: Prof. Yoshida)

The workshop began with opening remarks by YP Chair Dr. Ishigaki and an introduction to the IEEE Group Mentoring Initiative by Prof. Imai. This was followed by facilitator introductions, group discussions/presentations, closing remarks by Prof. Tsuda, and a networking session. Dr. Hayashi, Prof. Kawamoto, and Prof. Uemura also supported the discussions.

The engaging and insightful discussions helped

participants broaden their perspectives and develop strategic career plans. The networking session encouraged intergenerational connections and idea exchange, making this impactful event a great inspiration for organizing similar activities in the future.



Fig.3 Group Photo

4. Determination of incoming board members

The following officers for the next term (2025-2026) of LMAG-Tokyo were approved at the Tokyo Section Board of Directors meeting on December 10, 2024. Incoming Board Members

- Chair: Dr. Hideki Hayashi (Yokohama National University, formerly with Sumitomo Electric Industries)
 Vice Chair: Dr. Toshihiko Sugie (Hokkaido University*, formerly with NTT) *Tokyo Section Member
 Secretary: Dr. Isamu Chiba (Japan Manned Space Systems Corporation, formerly with Mitsubishi Electric Corporation)

5. Future Events

LMAG-Tokyo is planning to hold the following events. Details will be announced at a later date.

- December 26, 2024, Thursday, 15:00-16:30, "Trends in SF6 gas regulations aimed at achieving a carbon neutral society, and the development of SF6-free switchgear in its early stages, as well as its latest development trends" (Toshiaki Rokunohe, Hitachi, Ltd.), Hybrid (Online and in person)

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