



IEEE Tokyo Section Life Members Affinity Group

In this issue, a greeting from Prof. Tadashi Takano (LMAG Chair), LMAG-Tokyo general assembly, the first lecture sponsored by Tokyo section and co-sponsored by LMAG-Tokyo, and the future events are reported.

1. Address of Prof. T. Takano, Chair, In the 2020 Annual General Assembly of LMAG-Tokyo

Dear Members of IEEE LMAG-Tokyo,

The year 2020 started in the influence of the new-type corona so that we have to remotely hold the LMAG-Tokyo General Assembly. The Steering members of LMAG-Tokyo feel very sorry for this situation, on the other hand, it may be a good chance to try new social systems.

As you may know, IEEE Life Member (LM) is the prestigious title given to members who are older than 65, and have the sum of the age and the membership period reach 100. LMAG is a society that deepens the friendship between LMs, encourages the communication with younger people making the best of their experiences, and contributes to external society with increasing insight. We would like to heartily congratulate and welcome the newly promoted members.

Last year, LMAG-Tokyo held IEEE Milestone-related tour, institution technical tours and lecture meetings. And evening salon was held for the attendants to enjoy frank discussion and communication. Many members attended to those meetings, and the circumstances were reported in our Newsletters.

This year, we will make our efforts to have members pleasantly contact with society and edge technologies. LMAG members and others are greatly welcomed.

As for nationwide IEEE activities, LMAG-Sendai was newly founded last year. Now, LMAG-Tokyo would like to have collaboration with LMAGs in Sendai, Nagoya and Kansai this year. We will also support collaborative events with students, young engineers and woman's engineers.

As for global LMAG activities, we collaborate with R10 Life Member Committee as well as the last year, which manages Asia-Pacific area. This year is the 10th anniversary after LMAG-Tokyo was founded by virtue of Dr. Habara, the first Chair, and many relevant persons. We would like to celebrate the event with all of you.

Lastly, the LMAG-Tokyo officers, namely myself, Hajime Imai of Vice-chair and Naohisa Ohta of Secretary would like to ask your unchanged support to develop LMAG further.



Fig. 1 Dr. Takano giving his address in the General Assembly on WebEx screen

2. LMAG-Tokyo Annual General Assembly

The 2020 LMAG-Tokyo General Assembly was held on WebEx, from 14:00 to 14:30, April 3, Friday, 2020. The assembly was presided by Dr. Ohta, Secretary. At the beginning, it was reported that the participants was 25 and other 630 LMAG-Tokyo members entrusted the executive. After the officers for 2020 (Dr. Takano, Chair, Dr. Imai, Vice Chair, and Dr. Ohta, Secretary) were introduced, Prof. Takano gave an address and continued the discussion as the chair on the following agendas.

Agenda 1: Report on 2018 LMAG-Tokyo Activities

Prof. Imai, Vice Chair, reported the following events pursued in 2019.

- 2019 LMAG-Tokyo general assembly (March 27).
- Lecture meetings.

A lecture associated with the general assembly and five lectures all co-sponsored with Tokyo Section. The total participants were about 213.

- Technical Tours sponsored by LMAG-Tokyo.

An IEEE Milestone related tour was held at Mt. Fuji Radar Dome with 18 participants. Technical tours to NTT DoCoMo R&D Center and KDDI Research were held with participants of 30 and 45, respectively.

- LMAG Evening Salon (May 9).

The third evening salon was held at Fujikura with 29 participants.

- Participation in IEEE events.

IEEE Tokyo SYWL Workshop 2019 and IEEE Day Party 2019 were held on Oct. 5. The 16th TOWERS Workshop was on Oct. 19.

- Support to and participation in the events associated with LMAG-Sendai foundation.

The steering members of LMAG-Tokyo supported and participated in Foundation ceremony, Commemorative symposium of LMAG-Sendai foundation, IEEE Metro Area Workshop 2019 in Sendai, and Japan SYWL Workshop 2019 in Sendai, all on Oct. 24 and 25.

- Publication of LMAG-Tokyo Newsletter (May 30, Sept. 26, and Dec. 27).

Agenda 2: Activity Plan for 2020

Dr. Ohta, LMAG-Tokyo Secretary, explained an activity plan for 2020.

- 2020 LMAG-Tokyo general assembly (originally planned on April 3, and actually held today).

- Election procedure for 2021-2022 officers:

Announce nominations by 31 August

Close nominations by petition by 30 Sept.

Mail a ballot, if required by 31 Oct.

Hold elections by 30 Nov.

- Lecture Meetings and Technical Tours.

Lectures (sponsored or co-sponsored) are planned more than 4 times. Technical tours to industrial sites and to an IEEE Milestones related site, and an evening salon are planned.

- Participation and exchange in the events held by other section's LMAG, other Affinity Groups in Tokyo section and IEEE R10 including TENCON2020 (in Osaka).

- LMAG-Tokyo Newsletter publication.

Newsletter is to be published 3 times and sent out via email. Newsletter delivery via postal mails is considered if necessary.

Agenda 3: Amendment of LMAG-Tokyo Management and Procedures

In LMAG-Tokyo Management and Procedures, there has been an issue that the term of office should be revised in accordance with the real operations. Prof. Imai, Vice Chair, explained the proposed revision. The essential part of the revision is shown below:

- So far, the term of office for all officers was specified as "one year" so that all officers served twice formally. The term should be revised to "two years".
- Accordingly, the term of advisers should be specified as two years.
- Ad hoc officers could be appointed in addition to elected officers to assist LMAG activities during the relevant term, which should not be longer than two years.
- Method of communications with LMAG members should be mainly e-mail distribution and Web site updates. If desired, postal mail should be considered.

At a Q&A session for all agendas, there was a question on the detailed procedures to appoint Ad hoc officers. Dr. Imai, Vice Chair, explained that detailed procedures were not specified to cope with a

variety of possible situations.

The revised version LMAG-Tokyo Management and Procedures can be found at the following link.

[https://ieeep.org/section/tokyo/lmag/adm/info/Management and Procedures.pdf](https://ieeep.org/section/tokyo/lmag/adm/info/Management%20and%20Procedures.pdf)

All the agendas were finally approved. The first WebEx on-line General Assembly was successfully accomplished.

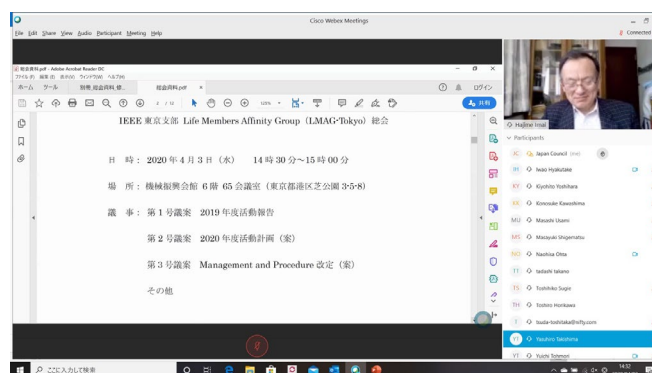


Fig. 2 Dr. Imai, Vice Chair, reporting 2019 activities at General Assembly using WebEx.

3. Lecture Meeting "CPS-driven Social Innovation for Society 5.0"

The lecture meeting was first scheduled to be held at the General Assembly of IEEE-Tokyo and LMAG-Tokyo in April, but it was interrupted due to the COVID-19 pandemic. Finally, it was held on line at 15:00-17:00 on June 5, Friday sponsored by both of IEEE Tokyo Section and LMAG Tokyo. The participants were 65 in number. This was the first remote lecture using WebEx system in IEEE Tokyo Section. The lecturer was Dr. Yoshihiro Shiroishi of HITACHI Ltd.

Dr. Shiroishi started his lecture referring to the paradigm shift occurred from the 20th to 21st century. In the 20th century, we could prospect the future evolution and it was the era of the science technology, production and engineering. In the 21st century, the society became complicated and uncertain, and it was the era of humanity, system, and talent. In this situation, "digitalization" became more important to lead to Society 5.0. Key issues include collecting and displaying information from a variety of sensors, security and privacy protection, as well as increasing the memory capacity to catch up the requirement.

There are two dominant candidates of large size memories: Hard Disc Drive (HDD) and Solid-State Drive (SSD). The features are a large memory volume for HDD and a fast access speed for SSD, respectively. HDD stores information by inverting magnetization in magnetic domains. SSD stores information by charging electronic capacity in semiconductor devices.

A key to increase the amount of information in HDD is to make a magnetic domain as small as possible.

Therefore, the distance between the write-read head and the magnetic disc surface was about 2nm. On the other hand, to increase the memory volume in SSD, technologies had been developed such as piling up the memory layers and changing the memory logic from binary to multiple-valued logic, in addition to miniaturizing the cell size.

To reduce the memory size of HDD, the perpendicular magnetic recording where the domains were lined up perpendicular, was invented. To fast invert the direction of magnetic domains, it was investigated to use the heat-assisted method by using the light beam or the microwave.

Currently, the HDD is produced not by one company, but by several companies according to their specialty of material, process, or assembly process. To improve the latency which is a weak point of HDD, parallel processing is under investigation.

The society seems to contribute to different objectives among countries; US to industries, EU to individuals, and China to the state. Japanese position seemed to locate in between US and EU.

Finally, Dr. Shiroishi mentioned about COVID-19 which is the present major issue of our Society. He pointed out the importance of having the resilience against these difficult issues, and a hope that we could contribute to this situation as engineers.

The WebEx lecture meeting was smoothly operated. The new merit of remote lecture meeting was confirmed in a sense that more people could attend easily from far locations compared with the conventional face to face lecture meetings.

jp.org/application/lecture20-2/form0727.html

Technical Tour associated with IEEE Milestone (Sponsored by LMAG and TPC of IEEE Tokyo Section)

- Date & Time: To Be Determined (Fall 2020)
- Venue: Shinkansen Exhibition Hall and Railway Technical Research Institute

Technical Tour (Sponsored by LMAG and TPC of IEEE Tokyo Section)

- Date & Time: To Be Determined (Fall 2020)
- Venue: ANA Airplane Maintenance Facility (Haneda Airport)

4th Evening Salon (Sponsored by LMAG and TPC of IEEE Tokyo Section)

- Date & Time: To Be Determined (Nov. 2020)
- Dr. Hisamoto of Hitachi Ltd., will present topics related to SiC Inverters.

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URL: <https://ieee-jp.org/section/tokyo/en/about/lmag.html>

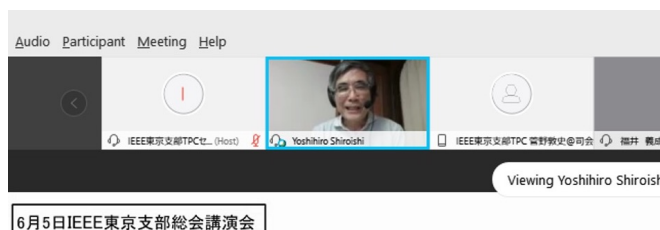


Fig.3 Dr. Shiroishi giving his talk. (captured and enlarged from WebEx screen, but is still small)

4. Future Events

The following events are planned carefully considering to prevent COVID19 infection. Information will be sent out via e-mails or updated on the Web site as soon as fixed.

Lecture Meeting (Sponsored by LMAG and TPC of IEEE Tokyo Section)

- Date & Time: July 27, 2020 (Mon) 15:00 – 17:00
- Venue: Kikai-Shinko-Kaikan 6F, 6-66 and Remote Lecture based on Zoom Webinar
- Lecturer: Dr. Hitoshi Imaoka (NEC Fellow, NEC Corp.)
- Lecture Title: Frontier of AI and Face Recognition Technology
- Website for registration: [https://ieee-](https://ieee-jp.org/section/tokyo/en/about/lmag.html)