

In this issue, a special contribution by Kohei Habara, the first LMAG-Tokyo Chair, "The Dawn of LMAG," a report on the Evening Salon, a report on the LMAG-Tokyo-sponsored lecture meeting, reports on the Tokyo Section lecture meetings, and a report on the R10 LMAG Meet participation.

### 1. Dawn of LMAG-Tokyo – 4 Special Days by Kohei Habara



Fig.1 Recent photo of Dr. Kohei Habara

This is a short "Behind the scenes" history of the LMAG-Tokyo foundation, mainly focusing on 4 special days and their relevant events.

LMAG-Tokyo was established on 8<sup>th</sup> October 2010, since then I formally served as the first chair until 31<sup>st</sup> Dec. 2012. LMAG-Tokyo has been periodically publishing the LMAG-Tokyo Newsletter 3 issues a year on average, and almost all events have been posted on them. Eventually, the items dealt with are that of after the establishment of the Group.

Recently, Dr. IMAI Hajime, current LMAG-Tokyo chair, asked me to post the history before its start. I couldn't agree with his idea more. Thus, the followings could be said LMAG-Tokyo Newsletter No. 0, that comes with 12 years delay.

#### 1. An Email on 27<sup>th</sup>, Nov., 2009

In the late evening, an email from then Tokyo Section Chair, Prof. Dr. IMAI Hideki, reached me, telling that

- Tokyo Section is aiming to form a Life Members Affinity Group.
- The Section willing to leave the necessary work

and possible chair to HABARA.

- The former chair, Dr. AOKI Toshiharu recommended HABARA as one of the best candidates.

I immediately asked Dr. AOKI on detail. He told me that

- It was unanimous opinion of the committee members that HABARA is only mentor who always cares young colleagues.
- Dr. AOKI himself had been recommended by IEEE Region 10 officers to form LMAG in Tokyo-Section as it is large enough. He finally said OK with in mind that HABARA would undertake the job if he asks, as he and I are inseparable friends long -time.

I said "Thanks. I understand your situation well, and I'll try". Thus, I sent a positive reply Email to Dr. IMAI Hideki on 30<sup>th</sup> Nov., 2009. Later, when LMAG-Tokyo was found, Dr. AOKI told me "Thanks. IEEE Headquarter is, of course, welcoming the inauguration".

From then on, preparation work started with strong support of Tokyo-Section staff. The first job was to prepare the petition form according to the IEEE Bylaws. I asked widely ranged friends to be petitioners, but no one knew what LMAG was. However, after they understood LMAG, they willingly said OK., and we can submit the petition on 26<sup>th</sup>, March 2010.

#### 2. 16<sup>th</sup> April 2010; Effective date

On 19<sup>th</sup> April 2010, an Email heading "Congratulations!" reached me from Cecelia Jankowsky, MGA Managing Director, saying that "IEEE Tokyo Section Life Members Affinity Group has been formed. The effective date is 16<sup>th</sup> April 2010".

Then we started necessary actions. Firstly, we fixed the officer candidates, then opened Web-site on 27<sup>th</sup> August 2010, etc. etc.

Meanwhile, on 18<sup>th</sup> Sep., 2010, we got a wonderful IEEE MGA Scoop information announcing that 7-8 Oct., will be the IEEE Day of the year. We immediately decided the LMAG-Tokyo inauguration ceremony should be held on the IEEE Day, namely on 8<sup>th</sup> Oct. 2010. We also reported MGA the ceremony would be an IEEE Day event.

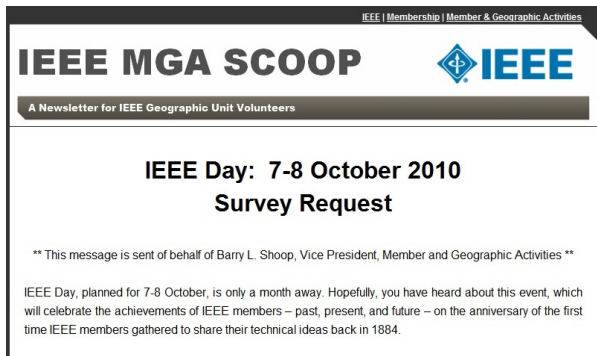


Fig.2 IEEE MGA SCOOP in October 2010

2 more special days of the 4, regard establishment or kick-off ceremony and the first general assembly, and both have been reported on the LMAG-Tokyo Newsletter No. 1-3, so only small additional remarks will be given below.

### 3. 8<sup>th</sup> Oct. 2010: Inauguration Ceremony Day

This date was not a coincidence but strongly intended date as IEEE Day.



Fig.3 Group photo at the inaugural meeting (Dr. Habara is in the center of the front row)

### 4. 11<sup>th</sup> March 2011: 1<sup>st</sup> General Assembly Day

The assembly was held 14:00-14:25 prior to the Tokyo Section General Assembly of 14:30-17:00. Actually, however, at 14:46, when the Section's General Assembly was at its crest, a very big earthquake struck and lasted few minutes with its crest: the Great East Japan Earthquake.

Despite the terrible shaking, all the programs went as planned, new fellow's celebration party included. No one knew what was going on outside, for example, all transportation facilities had stopped.

Thus, almost all of the participants will never forget

this date.

Soon after the inauguration, we discussed the LMAG's future direction, and reached a consensus that one of the most important LMAG missions would be to pass and share their knowledge and experiences with other Groups: TPC (Technical Program Committee), GOLD (Graduates Of Last Decade: currently YP (Young Professionals)), WIE (Women In Engineering) etc.

In parallel, we also assisted establishment of other LMAGs such as Kansai, Nagoya, Tohoku. Details will be omitted as they are already reported in the past Newsletters.

Lastly, the smooth start-up and following activities greatly owes to Tokyo Section staff, for them the first LMAG-Tokyo officers express their sincere thanks.

This article is based on my short speech at the 10<sup>th</sup> anniversary of LMAG-Tokyo on 8<sup>th</sup> Oct. 2021.

## 2. Evening Salon "Extended"

The 5<sup>th</sup> Evening Salon (Evening Salon "Extended") was held in a hybrid format on Tuesday, June 14, 2022, from 15:00 to 17:00, hosted by the Tokyo Section LMAG and co-hosted by the Tokyo Section TPC. The number of participants was 98 (15 on-site, Kikai-Shinko-Kaikan, and 83 online). Due to the hybrid format, there were many participants from all over the country and many questions from the participants.

The topic of this evening salon was presented by Dr. Tadashi Takano, Professor Emeritus, Institute of Space and Astronautical Science, JAXA (LMAG-Tokyo Past Chair), on the topic "Space travel is about to begin: What will Japan do?"

The summary is: "Space travel is about to begin by the end of the year with Virgin Galactic, followed by Blue Origin. It is a form of space travel that reaches about 100 km and returns, which is much safer than orbiting. The spacecraft will be able to enjoy rapid acceleration during ascent, weightlessness near the top, and views of the vacuum of space and the Earth through the windows. The spacecraft will be reused, and the space travel suits will be special. Of course, a high level of safety will be required, and a communication system for travelers will be necessary. Japan can contribute to these technological aspects from its area of expertise." This is a dream story.

After Dr. Takano's presentation of the topic, it was time for a discussion over food and drink, which was very lively, with many comments and

questions from the audience and via the Internet, such as "Isn't the key to make it widely understood that space travel will one day be something anyone can go on?", "Isn't it necessary to have a rocket that can accommodate a large number of people in order for space travel to become popular?" or "It takes a lot of G at launch to go on a space trip, but what can I do about this?"



Fig.4 Dr. Takano giving his lecture



Fig.5 Meeting scene after providing topic

### 3. R10 LMAG Meet Report

The second R10 LMAG Meet was held online at 14:30 (JST) on June 19 (Sun), 2022. The participants were 21 in number, including Prof. Nishihara, past R10 Director, Mr. Rajendra Asthana, R10 LMC Chair, and LMAG officers. From LMAG-Tokyo, Dr. Imai, Chair, and Dr. Ohta, Vice Chair participated. Ritvik Bansal presided the meeting. After the opening remarks from Prof. Nishihara, Rajendra Asthana moved through the agenda as follows:

- The status of new R10 LMC Awards nomination was informed and LMAG Chairs were encouraged to participate actively.
- It was suggested to encourage formation of a new LMAG at Fukuoka (40 LMs).
- South Australia and Kansai LMAGs were recommended to plan their anniversary celebration events.
- LM Track organization in R10 Flagship Conferences such as TENSYP and HTC was introduced.
- Prof. Jong Chang Yi, Seoul Section, introduced detailed plan of R10 SYWL Congress 2022. There were many questions and concerns about

the status of COVID19, VISA, and flight tickets, etc.

- A new LMAG was founded in Daejeon, Korea. The LMAG Chair, Hyeong Ho Lee, gave a greeting.
- It was agreed that the next LMAG meet will be held on Aug. 12, 2022, during SYWL Congress in Korea.

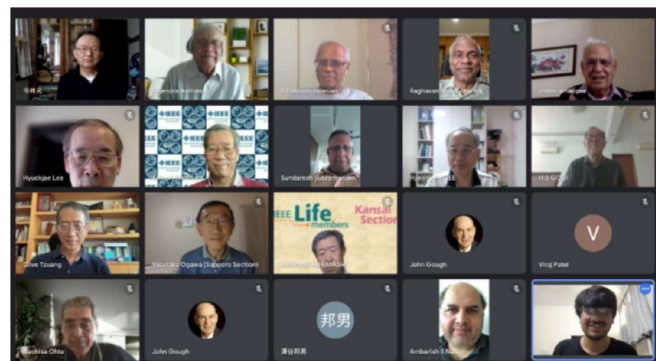


Fig. 6 Attendees of LMAG Meet (Screen Shot)

### 4. Lecture Meeting "Copper Interconnect Technology for VLSI Integration and Industrial Application of Atomic Switches"

This lecture was organized by Tokyo Section TPC and co-sponsored by LMAG, and was held on Thursday, June 30, 2022, from 15:00 in Zoom Webinar. The speaker was Dr. Munehiro Tada (VP of Engineering, NanoBridge Semiconductor, Inc..) and 54 participants (including 37 IEEE members) attended.

The lecture consisted of a technical review of copper interconnects introduced for VLSI integration, and as a recent technology trend, the industrial application of atomic switches that have achieved integration by using copper interconnects. The latter half of the lecture was enthusiastic, as the speaker himself had started a company based on this technology.



Fig.7 Dr. Tada giving his lecture (Captured from Zoom screen)



## 5. Lecture Meeting “Artificial Photosynthesis: State of the art and Future Prospect”

This lecture was held at Zoom Webinar on July 13, 2022 (Wednesday) from 15:00, sponsored by the Tokyo branch LMAG, co-hosted by the same TPC, and supported by the Institute of Electronics, Information and Communication Engineers. The speaker was Dr. Haruo Inoue (Professor Emeritus, Tokyo Metropolitan University), who spoke about expectations for new energy that does not emit carbon dioxide, and how to deal with CO<sub>2</sub> with chemistry. was the subject of the lecture. There were 55 participants (including 46 IEEE members) online.

The specific items of the lecture are:

- Emergence of social demands and artificial photosynthesis
- Photosynthesis as a model for artificial photosynthesis
- What is artificial photosynthesis?
- Energy conversion by light: Electrons are pumped up by light
- Difference between solar cells and artificial photosynthesis
- History of modern artificial photosynthesis research
- Status and issues of artificial photosynthesis research
- Renewable energy factor
- Important perspective
- Prospects

He gave a detailed lecture on the current state of artificial photosynthesis research and challenges for social implementation.

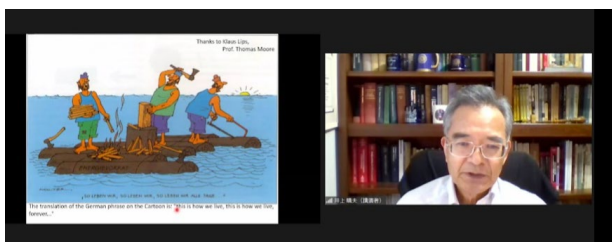


Fig.8 A lecture slide and Dr. Inoue giving his lecture (Captured from Zoom screen)

## 6. Lecture Meeting “Nonlinear Fiber Optics and their Applications to Communications”

This lecture was hosted by IEEE Tokyo Section TPC, co-sponsored by Tokyo LMAG and was held in an online conference format by Zoom Webinar from 3:30 pm on Wednesday, July 27, 2022. The speaker was Shu Namiki (Director, Platform Photonics Research Center, National Institute of Advanced Industrial Science

and Technology). 53 participants (including 42 IEEE members) attended.

Based on the speaker's experience, he introduced the basic principle of the nonlinear Kerr effect in optical fibers and research on its application to various optical communications. Self-phase modulation, Raman scattering, ultrashort pulse generation, four-wave mixing, wavelength conversion, and optical integration were introduced. As for the future, he talked about amplifiers using multi-level modulation and four-wave mixing.

It was a meaningful lecture for researchers and developers in the field of optics.



Fig.9 Dr. Namiki giving his lecture (Captured from Zoom screen)

## 7. Future Events

We are planning to hold the following technical tours.

1. **KDDI Transmitting Station**  
Date: Wednesday, August 24, 2022  
Location: KDDI Yamata Transmitting Station
2. **JAXA Institute of Space and Astronautical Science**  
Date: Thursday, September 29, 2022  
Place: JAXA Sagami Research Institute
3. **ANA Aircraft Maintenance Plant**  
Date: Wednesday, October 26, 2022  
Place: ANA maintenance factory (Haneda)

**IEEE Tokyo Section LMAG Newsletter, No.35, issued on September 1, 2022**

**Issued by IEEE Tokyo Section Life Members Affinity Group**

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