

The Global LiFi Innovation and Industry Seminar Brief

The Global LiFi Innovation and Industry Seminar was held from Jan. 26th to 27th, 2021 on line (by Zoom), which was organized by International SSL Alliance (ISA) LiFi Committee.

Participants from research institutes, universities and companies of China, Britain, the United States, France, the Netherlands, Austria, Hungary, Brazil, Russia, South Africa, India, Australia, Chile, Saudi Arabia, Malaysia, Thailand, Myanmar, Vietnam and so on more than 20 countries around the world attended the two-days meeting. More than 500 times people attended the conference.

The meeting was chaired by Distinguished Professor Harald Haas, Director of LiFi Research and Development Centre (LRDC), Department of Electronic & Electrical Engineering, University of Strathclyde, UK, Chairman of ISA LiFi Committee, Member of ISA Board of Advisors.

Dr. Cao Jianlin, President of ISA and former Vice Minister of Science and Technology of China joined the meeting and presented a welcome speech. He hoped that the meeting would share the latest research and development results of LiFi worldwide and exchange its innovative applications, to jointly promote the research and development process and the formation of industrial chain of global LiFi. Make LiFi be applied in more fields and a wider range to benefit mankind.

The meeting focused on two themes: "Research and Innovation" and "Industry and Application". 16 speakers shared the Seminar with their R&D progress, latest findings, conclusions, and application scenarios on LiFi or visible light communication (VLC) technology, products. The speakers were:

1. Distinguished Prof. Harald Haas, Director of LiFi Research and Development Centre (LRDC), Department of Electronic & Electrical Engineering, University of Strathclyde, UK, Chairman of ISA LiFi Committee, Member of ISA Board of Advisors.

2. Prof. JIANG Fengyi (Academician)' team, Nanchang University.
3. Prof. Martin D. Dawson, University of Strathclyde, UK.
4. Prof. XU Zhengyuan, University of Science and Technology of China.
5. Prof. Boon S. Ooi, Professor and Chair of Electrical Engineering, King Abdullah University of Science and Technology (KAUST).
6. Prof. CHEN Ming, Southeast University, China.
7. Prof. Davies William de Lima Monteiro, PhD - OptMA_lab, Universidade Federal de Minas Gerais (UFMG), Brazil.
8. Prof. CHI Nan, Dean of the School of Information Science and Technology, Fudan University, China.
9. Prof. Vladislav E. Bougrov, Director of School of Photonics, Professor, ITMO University, Russia.
10. Prof. LI Guoqiang, School of Material Science and Engineering, South China University of Technology.
11. Mr. Musa Unmehopa, Head of Ecosystems and Alliances for LiFi.
12. Prof. CHEN Xiongbin, Institute of Semiconductors, Chinese Academy of Sciences.
13. Dr. Nikola Serafimovski, PureLiFi, UK.
14. Mr. CUI Wenhua, CTO of Gloria Technology.
15. Dr. ZHU Binbin, General Manager of Shenzhen HCCL Technology and
16. Dr. SHEN Chao, General Manager of Sanoor Tech.

Each speaker took one to three questions after his/her presentation. More detailed questions would be communicated via email after the meeting.

At the closing session professor Haas concluded with the following remarks.

We have had a wonderful talk around the important lighting devices on VLC and LIFI system. We have also seen some work on the detectors and take the work further up into the system, which drive the detectors and receiver, through maximize the data rate. We are now reach the data rate. As you see, for many talks that are not what can be achieved with the incumbent radio communication technology. That is very

important trend to recognize because usually the LiFi or lighting communication it really augments radio communication and takes it into the next level of future prevail communications.

We have also seen beyond the research there are a lot of development on the industrialization and commercialization of lighting-based technology and seen many products. And you have seen enormous efforts to build eco-system to realize. If we truly make this revolution happen that I have no doubt it will, that require a lot of stakeholders work together. Stakeholders from silicon manufactures, device integrators, headset manufactures, system integrators, and lastly application developers. That is all needed, that is the eco-system. The ball is rolling the train is left station, we are belonging the snow ball and need to acceleration the speed and take the momentum up. That is happening right now. I think it is right time. I am also pleased to see that the Chinese government put the LiFi on the top of its agenda of the future, and that is very important and great to see.

We have seen all the technology developments and what is also important that came out from the Seminar is the application space. If you have realized that we have application space talked by Prof. Martin Dawson a plan on technology in space in satellite communications. You have seen many talks including Dr. Shen a planned technology into the water to build a wireless technology networks under the water. These two spaces I gas at least needs to be explored and a lot of potential for applications. And of cause that LiFi seating squarely in the terrestrial field and homes and 80-90% are all the traffic generate or terminate but also for traffic intelligent management system which is an important area where technology deployed. There are a large set of applications where beyond the radio could ever do because the radio will not work over long distance underwater you can try as hard as you want. If you want achieve that light can do that. That tremendous future ahead of us in terms of this community. I think it requires community efforts, it requires all stakeholders come together to work in collaboration. There is a need to healthy competition but beyond the healthy competition there is collaboration needed first for most to get the

technology out into a level where it really takes off into the commercial and mass market products. I hope this Seminar could contribute to foster and enhance that vision. I have really enjoyed and great pleasure and honor that has been given by ISA to be able to chair this first meeting, I truly hope that this is a start point of a large series of such events.

The representative of ISA Secretariat expressed that he hoped to build this meeting into a global brand conference with the effects of all the participants. He said that next year, more countries would be invited to this meeting. ISA Secretariat invited and welcomed all research institutions, universities, companies, etc. that were interested in LiFi, to join in the ISA LiFi Committee. Those who were interested in the LiFi Committee, could contact the ISA Secretariat to obtain the Terms of Reference (TOR) of ISA LiFi Committee. A number of activities would be carried out by the ISA Secretariat in 2021 based on the needs of members of the LiFi Committee.

Dr. Cao Jianlin, the special guest of the meeting, president of ISA and the former vice minister of the Ministry of Science and Technology of China, attended the two-days meeting and discussed most of the topics.

He said, on behalf of ISA, at the closing session,

Firstly, ISA held this meeting in the context of the global fighting against the pandemic. Thanks to everyone's efforts, the meeting was a great success and achieved the expected results. Thanks to Professor Haas, the speakers and all the participants.

Secondly, through the two-day meetings, we had a comprehensive understanding of LiFi technology from the aspects of "Research and Innovation" and "Industry and Application". He believed that LiFi had a bright future and that ISA would hold a series of meetings in the future, hoping that more research institutes, enterprises can share more achievements and experience about LiFi.

Last, the Chinese Spring Festival was coming. On behalf of ISA, he wished all participants healthy and good luck in the New Year.

The main results and outputs of this meeting:

After two days' communication, "The Global LiFi Innovation and Industry Seminar" had achieved the following results and outputs:

Firstly, top experts and scholars in the field of LiFi / VLC from around the world were gathered to exchange the latest information of technology innovation and industry development.

Secondly, the development status of LiFi / VLC technology was analyzed, the various links of the technology chain were clarified, and the goal and direction of future research and development were defined, so that the entire technical map was getting clear.

Thirdly, various potential and implemented application scenarios of LiFi technology were explored, which broadened the vision of further market application of LiFi and laid a foundation for the future multi-fields/ cross-border integration and cooperation.

Last, recognizing the importance of establishing a global LiFi ecosystem had been recognized. Which laid a foundation for building a LiFi technology innovation and application ecosystem that contributed the further work on promoting the sustainable development of LiFi technology worldwide after the meeting.

For the PPTs of this Seminar could contact the ISA Secretariat.

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