

The 2021 Third Meeting of Tokyo Section Executive Committee

The 2021 Third Meeting of Tokyo Section Executive Committee was held with hybrid-style (on-site and teleconference) from 3 pm, September 28, with 20 participants including 3 observers.



[◆Minutes *Japanese-only](#)

Schedule for 2021

Forth Meeting Tuesday, December 7 Sumitomo Electric (Akasaka-mitsuke)

The 6th Lecture Meeting of Tokyo Section in 2021

A lecture meeting “Artificial Intelligence, Big Data Processing and their Applications” was held online (Zoom Webinar) at 13:00 - 16:30 on Sept. 25, 2021, sponsored by both LMAGs of Tokyo and Sendai Section. The meeting was also co-sponsored by TPC of Tokyo Section, and in cooperation with IEICE, Japan. There were three lectures on the related topics and the number of participants was 219 in number.

The first lecture was given by Dr. Kunihiko Fukushima (Fuzzy Logic Systems Institute) focusing on the idea and development of neocognitron which is recognized as the origin of deep CNNs.



Dr. Fukushima giving a lecture

The second speaker was Dr. Akira Nakagawa (Artificial Intelligence Laboratory, Fujitsu Ltd.). The title of the talk was "Fujitsu's Artificial Intelligence Research Initiatives to Bring Trust to Society". He gave a lecture on artificial intelligence, which is being researched and developed by Fujitsu as one of the most important technologies to bring trust to society and make the world sustainable.



Dr. Nakagawa giving a lecture

The third speaker was Prof. Kengo Kinoshita (Graduate School of Information Science, Tohoku University). The title of the talk was "Possibilities and Challenges for Applying Artificial Intelligence to Medical-related Big Data". He gave a lecture on the current situation and issues, the possibility of genomic data, data collection by the Tohoku Medical Megabank Project and application examples of artificial intelligence technology, and highly agile data sharing.



Prof. Kinoshita giving a lecture

(Reported by Life Members Affinity Group (LMAG-Tokyo) Secretary, Hideki Hayashi)

The 7th Lecture Meeting of Tokyo Section in 2021

The 7th Lecture Meeting of the Tokyo Section in 2021 was hosted by Tokyo Technical Program Committee (TPC) from 3:00 p.m. to 4:30 p.m., Wednesday, October 6, via the Web virtual conference system Zoom Webinar with about 100 attendees. This lecture meeting is co-sponsored by Tokyo Life Member Affinity Group (LMAG) and the Institute of Electronics, Information, and Communication Engineers (IEICE). Dr. Shinji Matsuo, Senior Distinguished Researcher, NTT Corporation, gave the invited talk entitled "Heterogeneously integrated membrane photonic devices". He talked about the characteristics and future prospects of ultra-compact InP-based membrane-type semiconductor lasers that was highly expected for next-generation communication systems, which were heterogeneously integrated on a silicon substrate and could modulate ultra-high-speed signals with extremely low power consumption. We continued to use Zoom Webinar as a virtual conference system. In the current situation, this online style will be mainly used for a while, we pursue to grope for the future Lecture meetings considering the COVID-19 situations.

NTT

ヘテロ集積メンブレン光デバイス

松尾 慎治
NTT先端集積デバイス研究所
2021年10月6日

Cross-sectional SEM image of LEAP laser

SEM active region (InGaAsP/InGaAs/DBR)

Ultra-small Buried Helixstructure PhC Laser
Active volume: $4 \times 0.3 \times 0.15 \mu\text{m}^3$

- Active region with wavelength-scale PhC defect
- Flat top surface
- Smoothly-etched air-hole surface

まとめ

NTTで研究開発が行われているメンブレン光デバイスについて紹介

- 光通信素子の低消費電力化と低コスト化が今後重要
- メンブレン光素子は高い光閉じ込めにより高効率化が可能
- 直線変調レーザ: 活性層長を最適化することにより距離に応じた低消費電力化が可能(100オーダー)
- 変調器: 低挿入容量により高速化が可能
- シリコンフォトニクスデバイスとの集積が容易なため、大容量・低コストな大規模光回路が作成可能

日頃よりご議論いただき、NTT先端集積デバイス研究所およびナノフォトニクスセンターの共同研究者の皆様感谢您的いたします

(Reported by Technical Program Committee Secretary, Atsushi Matsumoto)

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IEEE Tokyo Section welcomes any comments, requests or inquiries from our members. Please send them to tokyosec@ieee-jp.org.