# The 18th International Conference on IP / IoT & Processing + Optical Network (iPOP 2022)

Hybrid Virtual Web Conference and
Keio University Yagami Campus, Yokohama Kanagawa, Japan.

June 3, 2022 Japan Standard Time (UTC+9:00)

iPOP 2022

IP+Optical Network
[IoT & Processing Network]+Optical

# Welcome Message


Naoaki Yamanaka,
Keio University, Japan


Hirotaka Yoshioka,
NTT, Japan


Bijan Jabbari,
ISOCORE, USA

## Welcome Remarks from Conference Co-chairs

**Welcome back to Real iPOP2022!**

Dear friends, presenters and supporters of iPOP Conference,
As we are now recovering from the COVID-19 pandemic which has severely impacted us, we are delighted that after two years, we are delighted to have iPOP 2022 planned as a real and hybrid conference to be held on June 3, 2022. Following the guidelines of the CDC and local government, we are looking forward to the face-to-face meetings and demonstrations augmented by online facility. Indeed, we are thankful to everyone who supported us for iPOP 2020 and 2021 events which we organized virtually.

This year marks the 18th anniversary of iPOP International conference, which has been founded and sponsored by Photonic Internet Labs (PIL) and ISOCORE. Since its inception, the conference has enjoyed well attendance with diverse and involved participants. In addition, iPOP co-developed with vCUBE, new virtual booth/exhibition system called EventIn, which attendees can join in the hybrid mode to participate and discuss at iPOP 2022!

This year we are augmenting the existing central theme of the conference with forward 6G (Beyond 5G) network and smart city which includes backbone, platform and services. In addition, we have network topics such as SDN, NFV and service chaining with the focus on reliable, manageable, flexible and cost-effective carrier and/or service provider networks. In the past few years these networks have mostly focused on datacenter, mobile access network integration like 5G, and include AI and data analytics aspects. As recently announced NTT, Intel and Sony announced IOWN, a new paradigm for networking based on All-Optical Networks, which the iPOP sponsor community has contributed to its infrastructure. The iPOP conference venue happens to be at the heart of IOWN technology by integrated procession function on the optical Networks.

5 years ago, "iPOP which started as IP+Optical will it stands for intelligent and Processing over Optical networks" are announced by Prof. N. Yamanaka at iPOP opening plenary. It is now going to be realistic!! IoT, M2M, robot and vehicle are connected to network. Edge, cloud and cloud-let help these robot control on the top of optical networks.

We hope that you would be able to join us in person or online at iPOP 2022 with presentations which may be in face-to-face or virtual modes. We look forward to your participation and support to make the event a great success!

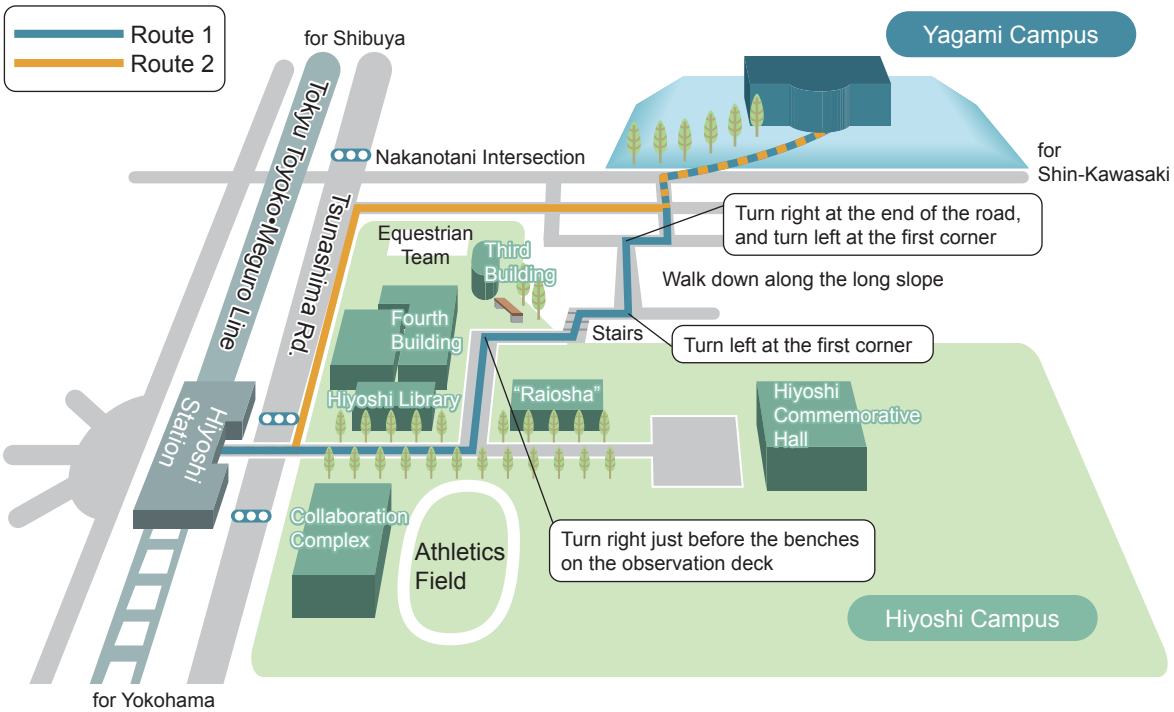
April 1, 2022
iPOP 2022 General Co-Chairs
Naoaki Yamanaka, Hirotaka Yoshioka, Bijan Jabbari

# VENUE

This year's conference will be a hybrid of local and online events.

**Address :**

**Keio University Faculty of Science and Technology Yagami Campus**
**3-14-1 Hiyoshi, Kohoku-ku, Yokohama, Kanagawa 223-8522, Japan**




# How To Access The Online

If you wish to participate from a remote location, you can participate online.
In order to access the iPOP2022 Virtual Conference, you need the "User ID" listed in the iPOP registration confirmation email.
If you have registered but do not have "User ID", please contact secretariat@pilab.jp.

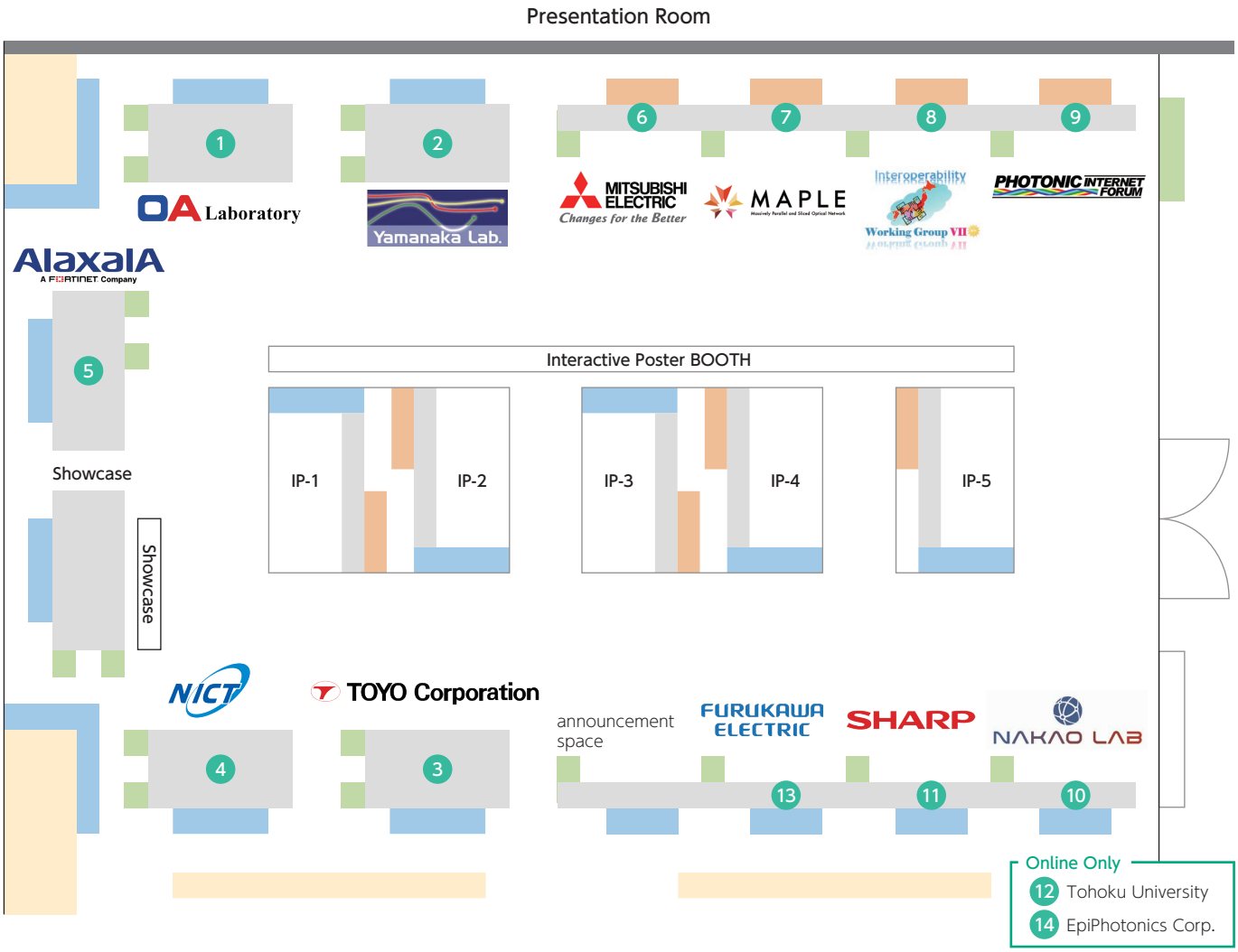
# PROGRAM at a Glance

| Friday 3, June 2022 | | | |
|---|---|---|---|
| Event | Presentation | | |
| | 9:15 – 11:00 | ***iPOP Opening:*** General Chairs' Speeches<br>Presider: Hiroaki Harai, NICT, Japan<br><br>***Opening Address***<br>Bijan Jabbari, General Co-Chair, ISOCORE, USA<br>Hirotaka Yoshioka, General Co-Chair, NTT, Japan<br>Naoaki Yamanaka, General Co-Chair, Keio University, Japan<br><br>***Keynote*** Chair: Hideyuki Shimonishi, Osaka University, Japan<br>***K-1 "SDN: Past, Present, and Future"***, Prof. Taekyoung (Ted) Kwon, Seoul National University, Korea<br><br>***iPOP Exhibition Introduction*** - Hirofumi Yamaji, TOYO Corporation, Japan | |
| Showcase<br>Exhibition | 11:00 – 12:00 | *Exhibition* | |
| | 12:00 – 13:00 | *Exhibition*<br>*&*<br>*Networking Lunch* | ***Online Interactive Poster*** Chair: Kiyoshi Onohara, Mitsubishi Electric, Japan<br>***IP1 "AI (ARTIFICIAL INTELLIGENCE) Centric Intent Based Networking"***,<br>Rani Yadav-Ranjan, Ericsson GAIA (Global AI Accelerator), India,<br>Wassim Haddad, Ericsson TON (The One Network), India, and<br>Anila Joshi, Ericsson GAIA (Global AI Accelerator), India.<br>***IP2 "Intent-based Orchestration of Remote Electrical Tilt of Antennas"***,<br>Sandhya Baskaran, M Saravanan, Ericsson Research, India.<br>***IP3 "Resource allocation considering inter-core and inter-mode crosstalks in path-protected spectrally-spatially elastic optical networks"***,<br>Joy Halder, South Asian University, India,<br>Wassim Haddad, Ericsson TON (The One Network), India, and<br>Anila Joshi, Ericsson GAIA (Global AI Accelerator), India.<br>***IP4 "Impact of counter-propagation and bi-partitioning in resource allocation for crosstalk-avoided spectrally-spatially elastic optical networks"***,<br>Bijoy Chand Chatterjee, Imran Ahmed, Abdul Wadud, South Asian University, India,<br>Mukulika Maity, Indraprastha Institute of Information Technology Delhi, India, and<br>Eiji Oki, Kyoto University, Japan.<br>***IP5 "A Scheduling Method for Deadline-aware Data Transfers based on Reinforcement Learning"***,<br>Kohei Shiomoto, Tokyo City University, Japan |
| | 13:00 – 14:00 | ***Hybrid Panel Session***<br>***Theme: "OpenROADM"***<br>***Moderator:*** Andrea Fumagalli, University of Texas, Dallas, USA<br>***Panelist:***<br>- Yoshiaki Sone, NTT, Japan<br>- Olivier Renais, Orange, France<br>- Balagangadhar (Bala) Bathula, AT&T, USA | |
| | 14:00 – 14:30 | ***Speech #1 Showcase Introduction:*** Chair: Yoichi Sato, Open Systems Laboratory, Japan<br>- Shinya Nakamura, UBiqube (Ireland) Ltd., Japan<br>- Satoshi Yamanoi, OA Laboratory Co. Ltd, Japan<br>- Ryo Nishimura, TOYO Corporation, Japan<br>- Shin'ichi Akahane, ALAXALA Networks Corp., Japan<br>- Yusuke Hirota, NICT, Japan<br>- Masaki Murakami, Keio University, Japan | |
| | 14:30 – 15:00 | ***Exhibition & Break*** | |
| | 15:00 – 15:30 | ***Speech #2:*** Chair: Yoichi Sato, Open Systems Laboratory, Japan<br>***"AI-driven autonomous network standardization in ITU-T"***, Ved P. Kafle, NICT, Japan | |
| | 15:30 – 16:00 | ***Exhibition & Break*** | |
| | 16:00 – 16:45 | ***Keynote:*** Chair: Eiji Oki, Kyoto University, Japan<br>***K-2: "Security solutions based on policy management for 5G and B5G"***, Prof. Antonio Skarmeta, Murcia University, Spain | |
| | 16:45 – 17:00 | ***Closing*** | |

# EXHIBITION

| No. | Participants | Title |
|---|---|---|
| 1 | OA LABORATORY CO.,LTD. | Lossless Ethernet L2 Switch Solutions HIW |
| 2 | Yamanaka Laboratory, Keio University | Ultra Low Latency Low Jitter and Massively Parallel Networks towards Beyond 5G Era |
| 3 | TOYO Corporation | 400G/200G/100G Test and Analysis Solutions |
| 4 | NICT | Managing Beyond 5G Network Services With Open Source Distributed MANO |
| 5 | ALAXALA Networks Corporation | Reconfigurable in-network security sensor network with beyond 5G emerging technology Project (REINS network) |
| 6 | Mitsubishi Electric Corporation | "Metro/Access Optical Technologies for Highly-Efficient Beyond 5G Infrastructure Architecture" Commissioned Research (#014) of NICT, Japan |
| 7 | Mitsubishi Electric Corporation | "Massively Parallel and Sliced Optical Network (MAPLE)" Commissioned Research (#204) of NICT, Japan |
| 8 | Kei-han-na Interoperability Working Group & Open Optical Network (O2N) Working Group | Activities of Interoperability Working Group and Open Optical Network (O2N) Working Group |
| 9 | Photonic Internet Forum | Introduction of the PIF Standard Promotion Committee |
| 10 | University of Tokyo | Extreme Edge Computing with Local5G/Private5G |
| 11 | SHARP COROPRATION | Development of Customizable SoC for IoT in the Beyond5G Era |
| 12 | Tohoku University | Low power consumption, large capacity optical access technology toward realization of a green society |
| 13 | Furukawa Electric Co., Ltd. | R&D of novel optical links using hollow core fibers |
| 14 | EpiPhotonics Corp. | EpiPhotonics Photonic Switching Solutions |

# EVENT BOOTH



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Bijan Jabbari, ISOCORE, USA

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# PARTICIPANTS

OA Laboratory
Yamanaka Lab.
TOYO Corporation
NICT
AlaxalA A FORTINET Company
MITSUBISHI ELECTRIC Changes for the Better
MAPLE Massively Parallel and Sliced Optical Network
Interoperability Working Group VII
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