FY 2024 Annual Report

Unit Name

Quantum Wave Microscopy Unit

Collaborations

Keiichi Namba, Fumiaki Makino, Graduate School of Frontier Biosciences, JEOL YOKOGUSHI Research Alliance Laboratories, Osaka University, Japan, Protein Crystal Imaging with Precession TEM

Takemasa Sakaguchi, Graduate School of Biomedical and Health Sciences (Medicine), Hiroshima University, Japan, A biochemical and electron microscopy study of the ethanol susceptibility of enveloped pathogenic viruses

(1) Yabin Qi (2) Luis Katsuya Ono, (1) Global Institute of Future Technology, Shanghai Jiao Tong University (2) OIST, (1) PRC (2) Japan, Protein Crystal Imaging with Precession TEM

Research Personnel

Masao Yamashita, Staff Scientist

Ryo Kanno, Staff Scientist

Cathal Cassidy, Staff Scientist

Takeshi Mise, Staff Scientist

Jun Fujita, Research Unit Technician

Ayumi Maegawa, Research Unit Technician

Shuji Misumi, Research Unit Technician

Seita Taba, Research Unit Technician

Hideki Takebe, Visiting Researcher

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Shintake, T.
   Low-Cost Energy-Efficient EUV Lithography for Advanced Semiconductor Manufacturing
   nature reviews electrical engineering 2025.
2. Shintake, T.
   Electrical Generator Design for Darrieus-Type Wave Energy Converter
   Journal of Ocean Engineering and Technology 2025, 39, 63–72.
   https://doi.org/10.26748/KSOE.2024.091

Presentation at Conference

1. Shintake, T.
   A Simple, Low-Cost, Highly Energy-Efficient, Two-Mirror Projector for EUV Lithography
   International Microprocesses and Nanotechnology Conference (MNC) 2024.
   https://imnc.jp/2024/

2. Shintake, T.
   Can We Improve Power Efficiency in EUVL?
   Photomask Japan 2024
   https://smartconf.jp/content/pmj
3. Shintake, T.
   R&D Status on Two-Mirror in-Line Projector for OIST EUV Lithography
   The 9th EUV-FEL Workshop 2025.
   https://conference-indico.kek.jp/event/303/

Seminars

1. Shintake, T.
   Breakthrough Innovations and Creations Emerging from Research. 2024.
2. Shintake, T.
   OIST Invented Technologies and Contribution to the Semiconductor Industry in Okinawa. 2024.
3. Shintake, T.
   Proposal for EUV Lithography for Advanced Semiconductors. 2024.
4. Shintake, T.
   Highly Energy-Efficient EUV Lithography. 2024.
5. Shintake, T.
   Low cost Energy Efficient Scanners for Blue-X. 2025.
6. Shintake, T.
   Do You Know How Your Mobile Phone Chip Is Made? 2025.

Scholarly Contributions (By Unit Members)

Name of Unit Member	Type	Title	Outlet
Ryo Kanno	Journal Article	A Native LH1-RC-HiPIP Supercomplex from an Extremophilic Phototroph	Communication Biology
Ryo Kanno	Journal Article	Structure of endothelin ETB receptor-Gi complex in a conformation stabilized by unique NPxxL motif	Communication Biology
Ryo Kanno	Journal Article	The Thermal-Stable LH1-RC Complex of a Hot Spring Purple Bacterium Powers Photosynthesis with Extremely Low-Energy Near-Infrared Light	Biochemistry
Ryo Kanno	Journal Article	A distinct double-ring LH1-LH2 photocomplex from an extremophilic phototroph	Nature Communication
Ryo Kanno	Presentation at Conference	Inhibitory mechanism of influenza virus infection by low-concentration ethanol treatment at body temperature	The 71st Annual Meeting of the Japanese Society for Virology

Outreach Activities (For Unit Members Only)

2025-01-20	Ryo Kanno, Cryo-EM course (INGEM）, Tohoku University
2024-07-10	Seita Taba, Ethanol Vapor Inhalation for Control of Influenza Respiratory Infections, The University of the Ryukyus