3-2. AWARD

Nishikawa Prize (Foundation for High Energy Accelerator Science)

Quantum Radiation Energy Research Section Heishun Zen (Associate Professor)

Associate Professor Heishun Zen was awarded the Nishikawa Prize from the Foundation for High Energy Accelerator Science on March 5th, 2025 for his contribution to the development of a mid-infrared free-electron laser (FEL) for advanced research. The Nishikawa Prize is annually given to recognize individuals or a small group of people who have demonstrated outstanding originality and internationally acclaimed achievements in research on high-energy accelerators and related technologies. The prize was established in 1989 to dedicate to the memory of Tetsuji Nishikawa.

In his award lecture, which was held on March 5th, 2025, at Arcadia Ichigaya, he presented his research work on the development of mid-infrared FEL at Kyoto University. He has established a novel beam loading compensation scheme named cavity detun-ing and achieved the world's highest extraction efficiency of oscillator FELs, few-cycle pulse generation, and nonlinear compression. He also established a control system of the FEL and intensively supported user experiments of the FEL.

Outstanding Oral Presentation Award in the EMSES 2025 (16th Eco-Energy and Materials Science and Engineering Symposium)

Quantum Radiation Energy Research Section Ju Yoon Hnin Bo (D3)

The 16th Eco-Energy and Materials Science and Engineering Symposium (EMSES 2025), which was sponsored by the Kyoto University Foundation for the Promotion of Education and Research, was held from January 8th to 10th at Kyoto University. This event provides a forum for researchers, engineers and industry experts to discuss recent development, new ideas and breakthroughs in Eco-Energy and Materi-als Sciences and Engineering technologies.

Ju Yoon Hnin Bo (D3) made an oral presentation on the topic of "Investigation of Phonon-induced Magnetic Domain Dynamics as Neel Temperature Approaches in Nickel Oxide" in the generation and application of high-power radiation sources section and received the Outstanding Oral Presentation Award.





JSPF Award for Early Career Research Contributions (Ito Sanae Special Award)

Complex Plasma Systems Research Section Fumiyoshi Kin (Assistant Professor)

Assistant Professor Fumiyoshi Kin was awarded Early Carrer Research Contributions (Itoh Sanae Special Award) of the Japan Society of Plasma Science and Nuclear Fusion Research on November 18th, 2024. This award is annually given to a researcher who is under 35 years old and has achieved outstanding academic results in the field of plasma and nuclear fusion research. He was awarded this prize on the achievements of "Experimental study of ava-lanching transport and profile formation in torus plasmas".

In his award lecture, held on November 28th, 2024, at Tower Hall Funabori in Tokyo, he presented experimental findings on electron heat fluctuations that propagate ballistically in the radial direction and contribute to the formation of the temperature profile, including stiffness, internal transport barriers and domeshaped profiles.

Excellent Presentation Award in the 61st National Heat Transfer Symposium of Japane

Functional Materials Science and Engineering Research Section Akiteru Takahashi (M2)

The 61st National Heat Transfer Symposium of Japan was held on May 29th-31st, 2024, in Kobe, Japan. This event provides young researchers and students an opportunity to present their works on heat transfer and related engineering.

Akiteru Takahashi (M2) made a poster presentation at the symposium with the topic of "Measurements of exciton thermal radiation from high-purity semiconducting carbon nanotube thin films". His presentation was highly evaluated, and he received the Excellent Presentation Award. His research clarified exciton effects in thermal radiation from high-purity semiconducting carbon nanotube thin films, providing a basis for realizing highly efficient thermal energy conversion technologies using carbon nanotubes.





Merit Award in the Global Research Immersion Program for Young Scientists (Grips)

Functional Materials Science and Engineering Research Section Mioko Kawakami (D2)

The Grips program is hosted by four Chenese universities near Yangtze river delta in China, including Zhejiang University. This program aims to cultivate a community and foster a group of aspiring future scientists who can encourage diverse perspectives and experiences among international students.

Mioko Kawakami (D2) participated in the Grips program at Zhejiang University from June to August 2024, and gave a poster presentation on the topic of "Floating Catalyst Chemical Vapor Deposition for Boron Nitride Nanotube Synthesis" in the Academic Poster Competition at the end of the program. Her presentation was highly evaluated, and she received the Merit Award which is given to about top 15% posters, from the Grips Committee.



Young Scientist Poster Award/Nanoscale Horizons Award in the 67th Fullerenes-Nanotubes-Graphene General Symposium

Functional Materials Science and Engineering Research Section Akiteru Takahashi (M2)

The 67th Fullerenes-Nanotubes-Graphene General Symposium was held on September 1st–3rd, 2024 in Kochi, Japan. This conference provides researchers and students an opportunity to present their recent studies on nanomaterials science.

Akiteru Takahashi (M2) made a poster presentation at the symposium with the topic of "Observation of exciton thermal radiation from single-chirality carbon nanotube membranes". His presentation was highly evaluated, and he received the Young Scien-tist Poster Award and the Nanoscale Horizons Award. His research clarified optical properties in sin-gle-chirality carbon nanotube membranes at elevated temperatures including their exciton thermal radia-tion properties for the first time, which provides an important basis for highly efficient thermophotovol-taic energy conversion technologies.

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Excellent Poster Certificate in the 14th A3 Symposium of Emerging materials: Nanomaterials for Energy and Electronics

Functional Materials Science and Engineering Research Section Zhirui Liu (D1)

The 14th A3 Symposium of Emerging Materials: Nanomaterials for Energy and Electronics was held on October 25th–29th, 2024 in Jincheng, China. This conference provides researchers and students an opportunity to present their recent studies on nanomaterials science.

Zhirui Liu (D1) made a poster presentation at the symposium with the topic of "Exciton binding energy in single-chirality carbon nanotube membranes probed by two-photon excitation spectroscopy". His presentation was highly evaluated, and he received the Excellent Poster Certificate. His research clarified fundamental exciton properties in aggregated carbon nanotubes which will be crucial for their applica-tions as energy functional materials for high-temperature thermal optics and photonics.



Excellent Student Poster Award in the 9th Photonics Workshop

Functional Materials Science and Engineering Research Section Mioko Kawakami (D2)

The 9th Photonics Workshop was held on November 14th-15th, 2024 in Okinawa, Japan. This workshop provides researchers and students an opportunity to present their recent studies on photonics.

Mioko Kawakami (D2) made a poster presentation at the workshop with the topic of "Design and fabrication of near-infrared perfect absorbers using carbon nanotube thin films". Her presentation was highly evaluated, and she received the Excellent Student Poster Award. Her research provides a new concept to fabricate perfect absorbers and emitters in the near infrared region with a very simple structure using carbon nanotubes, promising for high-performance wavelength selective emitter necessary for realizing high efficiency thermophotovoltaic devices.



Symposium Poster Award in the 15th International Symposium of Advanced Energy Science

Functional Materials Science and Engineering Research Section Mioko Kawakami (D2)

The 15th International Symposium of Advanced Energy Science was held on December 10th-13th, 2024, jointly by the Institute of Advanced Energy, Kyoto University and Joint Usage/Research Center for Zero-Emission Energy Research. This event provides young researchers and students an opportunity to present their works on energy science related to zero-emission energy.

Mioko Kawakami (D2) made a poster presentation at the symposium with the topic of "Carbon nanotubebased 4-layer all-dielectric near-infrared perfect absorber". Her presentation was highly evaluated, and she received the Symposium Poster Award. Her research provides a new concept to fabricate perfect absorbers and emitters in the near infrared region with only a 4-layer structure using carbon nanotubes, promising for high-performance wavelength selective emitter necessary for realizing high-efficiency thermophotovoltaic devices. Symposium Poster Award in the 15th International Symposium of Advanced Energy Science

Functional Materials Science and Engineering Research Section Zhirui Liu (D1)

The 15th International Symposium of Advanced Energy Science was held on December 10th-13th, 2024, jointly by the Institute of Advanced Energy, Kyoto University and Joint Usage/Research Center for Zero-Emission Energy Research. This event provides young researchers and students an opportunity to present their works on energy science related to zero-emission energy.

Zhirui Liu (D1) made a poster presentation at the symposium with the topic of "Aggregation effect of single-structure carbon nanotubes on the exciton binding energies". His presentation was highly evaluated, and he received the Symposium Poster Award. His research clarified that exciton binding energy in carbon nanotubes can be maintained very high even in the aggregated conditions, which is crucial for their applications as energy functional materials for high-temperature thermal optics and photonics.





Best Poster Award at the 98th Workshop of Materials Tailoring Society

Chemical Reaction Complex Processes Research Section Hinako Yamamoto (M1)

The 98th Workshop of Materials Tailoring Society, which organized by Materials Tailoring Society, was held on 1st–3rd August, 2024 at Karuizawa, Japan. This symposium provides an opportunity for students who will lead the next generation to present their research.

Hinako Yamamoto (M1) attended this workshop and received the best poster award for her poster presentation on the topic of "Effect of F^- ion concentration on electrodeposition of Ti in molten LiCl-LiF".



Encouragement Award in the 3rd Kansai Electrochemical Research Association

Chemical Reaction Complex Processes Research Section Zhengyang Hou (D1)

The 3rd Kansai Electrochemical Research Association, which was sponsored by the Kansai Branch of the Electrochemical Society of Japan, was held on 30th November, 2024 at Kyoto University. This event aims to invite researchers in electrochemistry field as lecturers to provide participants with cutting-edge knowledge and offers attending students an opportunity to present their works.

Zhengyang Hou (D1) attended and made a poster presentation on the topic of "Electrodeposition of Crystalline n-Si in Molten KF–KCl for Application to Solar Cells". He received Encouragement Award from the Kansai Branch of the Electrochemical Society of Japan.



Symposium Poster Award in the 15th International Symposium of Advanced Energy Science

Chemical Reaction Complex Processes Research Section Wataru Moteki (D3)

The 15th International Symposium of Advanced Energy Science was held on December 10 -12, 2024. This event provides researchers and students in the field related with energy an opportunity to present their works.

In the symposium, the poster session for young researchers and students was held. Mr. Wataru Moteki (D3) attended and made a presentation on the topic of "Electrodeposition of crystalline Si using liquid metal cathodes in molten KF–KCl: Comparison of Zn and Ga". He received the Symposium Poster Award.



Excellent Paper Award of The Electrochemical Society of Japan

Chemical Reaction Complex Processes Research Section Takayuki Yamamoto (Assistant Professor) Toshiyuki Nohira (Professor)

Assistant Professor Takayuki Yamamoto and his co-authors received the Excellent Paper Award of The Electrochemical Society of Japan on March 19th, 2025. This award is annually given to authors of excellent papers published in "Electrochemistry", which is the academic journal of the Electrochemical Society of Japan.

The authors received the award for the paper titled "In-Situ Raman Spectroscopic Analysis of Factors Improving Discharge Rate Capability of Na-Ion Batteries with FSA-Based Ionic Liquids".



Best Poster Presentation Award in the 19th Sympo-sium for Young Scientists of the Japanese Society for Biomaterials at Kansai

Biofunctional Chemistry Research Section Mashal Asif (M2)

The 19th Symposium for Young Scientists of the Japanese Society for Biomaterials at Kansai, was held on 27th, July 2024 in Kyoto. This event provides young researchers and students in the field of biochemistry, biomaterials and its surrounding area an opportunity to present their works.

Asif Masal (M2) attended and made a poster presentation on the topic of "Application of DNA nanostructure-based sensor in monitoring wide-range pH and cathepsin activity".

She received the Best Poster Presentation Award from the Kansai Branch of the Biomaterials Society of Japan.



Best Poster Presentation Award in the 3rd Sympo-sium for young scientists of "Bottom-up creation of cell-free molecular systems: Surpassing nature"

Biofunctional Chemistry Research Section Futa Komatsubara (D2)

3rd Symposium for young scientists of "Bottom-up creation of cell-free molecular systems: Surpassing nature" was held on 11th, October 2024 in Nagoya. This event provides researchers and students in the field of biomolecule-complexes systems and its surrounding area an opportunity to present their works.

Futa Komatsubara (D2) attended and made a poster presentation on the topic of "Construction of nanoliposome supported by DNA nanostructure and the trial of enzyme assembly inside the nanoliposome".

He received the Best Poster Presentation Award from the symposium supported by Grant-in-Aid for Transformative Research Areas (A).





Symposium Poster Award at the 15th International Symposium of Advanced Energy Science

Structural Energy Bioscience Research Section Tomoki Sakamoto (Researcher)

The 15th International Symposium of Advanced Energy Science was held from December 10 to 12, 2024, jointly organized by the Institute of Advanced Energy, Kyoto University, and the Joint Usage/Research Center for Zero-Emission Energy Research. The symposium provided an opportunity for young researchers and students to present their work in energy science, particularly in the field of zero-emission energy research.

At the symposium, Tomoki Sakamoto presented a poster titled "Investigating the Impact of Molecular Crowding on the Base Pair Opening/Closing Dynamics of DNA Triplex Structures." His presentation was highly evaluated and awarded the Symposium Poster Award.

DNA, the carrier of genetic information, can form triplex structures at specific nucleotide sequences, which have been implicated in neurodegenerative disorders such as Friedreich's ataxia. In the presentation, he reported, for the first time, the determination of the rate constants for base pair opening (k_{open}) and closing (k_{close}) within a DNA triplex under molecular crowding (MC) conditions, using advanced NMR techniques. To simulate different aspects of MC, the study employed Ficoll PM 70 to mimic excluded-volume effects and PEG 200 to reduce water activity. The results revealed contrasting effects of these crowding agents on DNA triplex dynamics. These findings suggest that the base-pair opening/closing dynamics of DNA triplex structures are highly sensitive to changes in the intracellular environment.

