

3-2. AWARD

Young Researcher Award of the Japanese Society of Infrared Science and Technology

Quantum Radiation Energy Research Section Heishun Zen (Assistant Professor)

Assistant Professor Heishun Zen was awarded the Young Researcher Award of the Japanese Society of Infrared Science and Technology on June 4th, 2021. This award has been established to encourage young researchers in their research work and further enliven the community of infrared science and technology. He was awarded this award for his intensive research and development work of the mid-infrared free electron laser including his efforts in supporting the application experiments.

In his award lecture, which was held on July 4th, 2021 online, he presented his research work on the mid-infrared free electron laser and several application experiments performed in Kyoto University Free Electron Laser facility under the support of Joint Usage/Research Center for Zero-Emission Energy Research.



The 17th PASJ Award for Research Encouragement

Quantum Radiation Energy Research Section Heishun Zen (Assistant Professor)

Assistant Professor Heishun Zen was awarded the 17th PASJ Award for Research Encouragement from the Particle Accelerator Society of Japan on June 10th, 2021. This award has been established to encourage young researchers in their research work and further enliven the community of particle accelerator. He was awarded this award for his research work on the improvement of the extraction efficiency of oscillator-type infrared free electron laser driven by a normal conducting linear accelerator. The research was performed under the support of MEXT Quantum Leap Flagship Program (MEXT Q-LEAP) Grant Number JPMXS0118070271.

In his award lecture, which was held on August 11th, 2021 online, he presented the recent achievement of the high extraction efficiency operation of the mid-infrared free electron laser. His talk included several efforts to achieve high extraction efficiency and prospects.



Student Poster Award, Atomic Energy Society of Japan

Advanced Atomic Energy Research Section
Yuto Murata (M2)

Yuto Murata (M2) was awarded Student Poster Award from Atomic Energy Society of Japan (AESJ) on 10th September 2021. This poster session was hosted by the AESJ Student Network and the AESJ Diversity Promotion Committee. In the poster session, there were diverse presentations by students (from undergraduate to doctoral course students).

In his work, the saturated solubility of Bi in liquid Li–Pb was measured in the temperature range from 508 to 623 K, in order to evaluate amount of Po production in a fusion reactor with liquid blanket. The measured results showed a positive temperature dependence where the solubility decreases as the temperature was lowered. The equation of the solubility curve of Bi in Li–Pb gave the dissolution enthalpy of Bi as -77 kJ/mol. By X-ray diffraction analysis of the precipitates, the formation of Li_3Bi phase was confirmed.



Student Poster Award, Atomic Energy Society of Japan

Advanced Atomic Energy Research Section
Yasuyuki Ogino (D3)

Yasuyuki Ogino (D3) was awarded Young Researcher Award from Atomic Energy Society of Japan (AESJ) Kansai branch. The young researcher workshop was held on 10th March 2022 virtually and hosted by the AESJ Kansai branch. In the workshop, young researchers in Kansai area had oral presentations.

In his work, the thermal and epi-thermal neutron fluxes in a blanket mock-up were measured by using metal foils and imaging plate. The metal foils were activated by deuterium–deuterium neutron irradiation with an average neutron production rate of $1.22 - 1.31 \times 10^7$ n/sec. The radiations of β - and γ - rays emitted during each decay process were measured on an imaging plate of 2-dimensional radiation dosimeters. The detection range at measured positions was between 2×10^{-3} and 5×10^{-2} cm²/n, and calculation to experimental values was 0.27–2.47.

Student Presentation Awarded of the Physical Society of Japan

Complex Plasma Systems Research Section Panith Adulsiriswad (D3)

2021 Autumn meeting of the Physical Society of Japan was held on September 20-23, 2021, on-line. This meeting has a long history since 1946 and it has covered almost all fields of physics.

Panith Adulsiriswad (D3) attended in the meeting and made a presentation titled “Study of the Interaction between Peripheral Energetic Particle Mode and Energetic Particles in Heliotron J with MEGA, a Hybrid MHD Simulation with Free Boundary Condition”.

He received the Student Presentation Award of the Physical Society of Japan (division 2, or plasma physics). This was the second time for him in this meeting; the first time being last year.



Excellent Poster Presentation Award (The 34th Fall Meeting, The Ceramic Society of Japan)

Functional Materials Science and Engineering Research Section Hiroyuki Sakai (M2)

The 34th Fall Meeting, the Ceramic Society of Japan, was held on 1st – 3rd of September, 2021. This event provides to promote the development of industry, science and technology related to the ceramics field.

Hiroyuki Sakai (M2) attended and made a poster presentation on the topic of “Effect of eutectic reaction on RE-silicate formation by surface modification of SiC”. He received the Excellent Poster Presentation Award from the Ceramic Society of Japan.

In this presentation, he presented about the effect of eutectic reaction on surface modification of liquid phase sintered SiC. This modification method works as an alternative technology to conventional environmental barrier coatings in particular for aerospace application.



Osawa Award for Young Scientists (The Fullerenes, Nanotubes and Graphene (FNTG) Research Society)

Nano Optical Science Research Section
Keisuke Shinokita (Assistant Professor)

Assistant professor Keisuke Shinokita was awarded Osawa Award for Young Scientists from the Fullerenes, Nanotubes and Graphene (FNTG) Research Society. The Osawa Award for Young Scientists is given to researchers awarded to presentations on theory, experimentation, and application development of fullerene and its related substances. He was awarded this prize on the achievements of “Novel excitonic features of moiré exciton in twisted van der Waals heterostructures.”

In his award lecture, which was held on 3rd September 2021, at the online meeting, he presented several emergent optical phenomena and the physical mechanism of the twisted $\text{MoSe}_2/\text{WSe}_2$



Young Scientist Poster Award (The Fullerenes, Nanotubes and Graphene Research Society) and Nanoscale Horizon Presentation Prize (The Royal Society of Chemistry)

Nano Optical Science Research Section
Mikio Kobayashi (M2)

Mikio Kobayashi (M2) was awarded Young Scientist Poster Award (The Fullerenes, Nanotubes and Graphene Research Society) and Nanoscale Horizon Presentation Prize (The Royal Society of Chemistry) of The 62th Fullerenes-Nanotubes-Graphene General Symposium on March 2-4, 2022. The Young Scientist Poster Award is given to a few researchers who gave a poster presentation. Nanoscale Horizon Presentation Prize is given to an outstanding presentation at the conference. He was awarded these prizes on the presentation of “Optical properties of transition metal dichalcogenides with microspherical optical cavity”.

He presented about demonstration of optical resonances of light emission from transition metal dichalcogenides and van der Waals heterostructures in a spherical optical cavity in the previous symposium on March 1st, 2021 at Osaka University (online). In addition, this study will lead to advanced light emission devices with atomically semiconducting materials.



Young Researcher Award of The Electrochemical Society of Japan (Sano Award)

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

Assistant Professor Takayuki Yamamoto received Young Researcher Award of The Electrochemical Society of Japan (Sano Award) on March 16th, 2022. This award is annually given to young researchers who have achieved outstanding progress in the field of electrochemistry. He received this award for his work on “Next-Generation Rechargeable Batteries Utilizing Ionic Liquids and Various Charge Carriers”.

In his award lecture online on March 17th, 2022, he presented new findings and progress on several rechargeable batteries including sodium and potassium secondary batteries with amide-based ionic liquid electrolytes and fluoride-shuttle batteries using fluoro-hydrogenate ionic liquids.



Research Encouragement Award at The 89th Workshop of Materials Tailoring Society

Chemical Reaction Complex Processes
Research Section
Alisha Yadav (D3)

The 89th workshop of Materials Tailoring Society was held on 6th–7th August 2021, Online, and was organized by Materials Tailoring Society.

The purpose of this workshop is to systemize the basic study of nanostructured interface creation that induces high-performance physical properties by non-equilibrium processing such as plasma and electrolytic processes and to also apply them to energy conversion and storage.

Ms. Alisha Yadav (D3) attended this workshop and made a poster presentation on the topic “Comparative studies on Graphite as Negative Electrode for Alkali Metal-ion Batteries using FSA-based Ionic Liquids”, and received the Research Encouragement Award. She investigated the potassium storage behavior of graphite in $K[\text{FSA}]-[\text{C}_3\text{C}_1\text{pyrr}][\text{FSA}]$ electrolyte at 313 K temperature through electrochemical and XRD measurements and observed the formation of various stages of K-GICs. She further compared the performance of graphite as negative electrode in Li-, Na-, and K-ion systems using $M[\text{FSA}]-[\text{C}_3\text{C}_1\text{pyrr}][\text{FSA}]$ ($x(M[\text{FSA}]) = 0.20$) ($M = \text{Li}, \text{Na}, \text{K}$) electrolytes.



Best Student Poster Award in the 12th International Symposium of Advanced Energy Science

**Chemical Reaction Complex Processes
Research Section
Wataru Moteki (M2)**

The 12th International Symposium of Advanced Energy Science was held on September 7–8, 2021, online Remote Conference. This event provides young researchers and students in the field related with energy an opportunity to present their works.

In the meeting, Mr. Wataru Moteki (M2) attended and made a poster presentation on the topic of “Electrodeposition of Crystalline Silicon Using a Liquid Zn electrode in KF–KCl Molten Salt”. He received the Best Student Poster Award.



Young Researcher's Award in the 3rd Kansai Electrochemistry Workshop

**Chemical Reaction Complex Processes
Research Section
Wataru Moteki (M2)**

The 3rd Kansai Electrochemistry Workshop was held on 4th December 2021, on Webinar, which was held by the Kansai Branch of the Electrochemical Society of Japan. This event provides young researchers and students in the field of electrochemistry and its surrounding area an opportunity to present their works.

In the meeting, Mr. Wataru Moteki (M2) attended and made a poster presentation on the topic of “Crystalline Si electrodeposition using a liquid Zn electrode in a KF–KCl molten salt”. He received the Young Researcher's Award.



JEOL RESONANCE Poster Award in ISMAR-APNMR-NMRSJ-SEST 2021

Structural Energy Bioscience
Research Section
Yudai Yamaoki (Assistant professor)

The ISMAR-APNMR-NMRSJ-SEST 2021 was held online from 22nd to 27th August, 2021 as a joint conference of the 22nd International Society of Magnetic Resonance Conference, the 9th Asia-Pacific NMR Symposium, the 60th Annual Meeting of the Nuclear Magnetic Resonance Society of Japan 2021, and the 60th Annual Meeting of the Society of Electron Spin Science and Technology. ISMAR-APNMR-NMRSJ-SEST 2021 is the largest international conferences in the magnetic resonance research field and 920 front-line researchers were participated.

In this meeting, Yudai Yamaoki made poster presentation entitled "In-cell NMR analyses of the structure and dynamics of hairpin and G-quadruplex structures in the living human cells". The intracellular environment is highly condensed with macromolecules. Under such cellular conditions, it has long been considered that dynamics of nucleic acids might be different from those under *in vitro* conditions, however there is no evidence. In the presentation, he used in-cell NMR technique that provide the information of structural dynamics of nucleic acids inside the living cell and revealed that the base-pair lifetime of some base pairs in the RNA hairpin and DNA G-quadruplex structures are different from that under *in vitro* conditions.

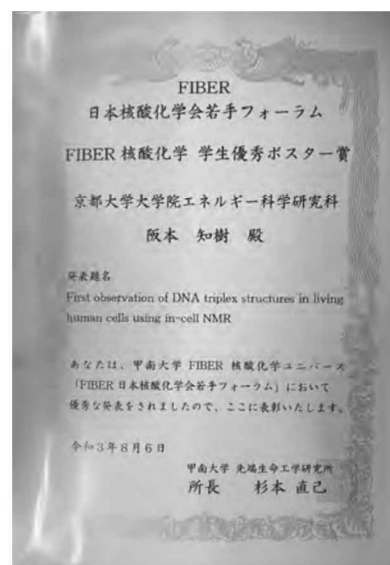
Yudai Yamaoki was awarded JEOL RESONANCE Poster Award from the committee of ISMAR-APNMR-NMRSJ-SEST 2021. JEOL RESONANCE Poster Award were given to five outstanding presentations in the joint conference.



Best Student Poster Award in Young Researchers Forum of FIBER and The Japan Society of Nucleic Acids Chemistry

Structural Energy Bioscience
Research Section
Tomoki Sakamoto (D1)

Young Researchers Forum of FIBER and The Japan Society of Nucleic Acids Chemistry was held on 5-6th August 2021 as an online forum. This forum was jointly organized by The Frontier Institute for Biomolecular Engineering Research (FIBER) and the Japan Society of Nucleic Acids Chemistry to deepen exchanges among researchers in nucleic acid chemistry and foster a younger generation of researchers. Tomoki Sakamoto made a poster presentation entitled "First observation of DNA triplex structures in living human cells using in-cell NMR" in this meeting. DNA, the carrier of genes, is known to form a triplex structure within a particular DNA sequence. It has been pointed out that such triplex structures are associated with diseases such as Friedreich's ataxia. In his presentation, he reported for the first time that DNA triplex structures could be formed in living human cells using in-cell NMR method, which can directly obtain information on molecules in living cells. The results obtained in this study will provide important information for developing DNA triplex structure-specific drugs. Tomoki Sakamoto was awarded Best Student Poster Award in Young Researchers Forum of FIBER and The Japan Society of Nucleic Acids Chemistry. These awards were given to five students who gave outstanding presentations out of 87 participants



Local Co-Creation Project in Kinokawa; Grand Prize

**Environmental Microbiology
Research Section
Motohito Yoneda (Researcher)**

Motohito Yoneda, a Researcher, was awarded the Grand Prize by the "Local Co-Creation Project in Kinokawa" sponsored by the government city of Kinokawa on March 20, 2022. This prize is given to those who created a new processed product brand rooted in the Kinokawa area.

He was awarded this prize for developing a new liquid seasoning by applying organic herbs grown by sowing arbuscular mycorrhizal strains. The characteristic of this seasoning is that it has a high aroma and lasts a long time. The products produced from this result will be distributed to the market as products certified by the government city of Kinokawa shortly.



< Picture stating receiving the prize “最優秀賞“, and Dr. Yoneda is wearing a lab coat. >