



**5th International Workshop on the  
Sustainable Actions for “Year by Year Aging” under Reliability  
Investigations in Photovoltaic Modules, 2024**

**SAYURI-PV 2024**

Dear PV colleagues,

The organizing committee of SAYURI-PV 2024 is pleased to inform you that the 5th International Workshop on the Sustainable Actions for “Year by Year Aging” under Reliability Investigations in Photovoltaic Modules, 2024 (**SAYURI-PV 2024**) will be held.

With the increased affordability and rapid market expansion of PV, interests on the long-term reliability of PV modules have been growing among various stakeholders including users, investors and financial enterprises. In the face of the overheating trend towards perovskites, new silicon solar cells such as TOPCon are expected to expand their market share worldwide, and research and development into the long-term reliability of this new technology is becoming more active. In addition, the development of lightweight PV modules for new applications in buildings and vehicles is also progressing, and their safety and reliability are becoming issues. It is necessary to build a research foundation for new PV technologies and their performance and long-term reliability in new applications, and to reconstruct the fundamental technology for sustainable development in the era of terawatt PV.

In this 5th SAYURI-PV Workshop, we will focus on the **Reliability and Emergent PV technologies** to assure the long-term reliability of PV modules/systems, including efforts toward their standardizations. We believe that sharing information on PV module reliability technology and emerging PV technologies will significantly contribute to the sustainable growth of the PV sector.

**We sincerely announce you to start the registration and the call for papers of this workshop. Please register and submit the abstract, according to the descriptions below.**

We are looking forward to seeing you in the most beautiful season of Tsukuba, JAPAN.

## SAYURI-PV 2024 Workshop: Overview

**Date:** November 7 – 8, 2024

**Venue:** Auditorium in AIST Tsukuba Central Campus  
Central 1, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8561, JAPAN

**Registration Fee:** Free                      **Language:** English

**Website:** <https://www.aist.go.jp/fukushima/en/sayuri-pv/2024/index.html>

**Further Information:** [sayuri-pv-sec-ml@aist.go.jp](mailto:sayuri-pv-sec-ml@aist.go.jp)

## SAYURI-PV 2024 Workshop: Topics & Invited Speakers

- Building integrated PV, vehicle integrated PV, floating PV, and agri-PV
- Outdoor performance and durability testing of perovskite and tandem PVs
- Si cells and modules reliability and degradation
- PV module and system safety

### Invited speakers:

Atsushi Masuda (Niigata University)

“Key materials and processes for highly reliable perovskite/silicon tandem photovoltaic modules”

Gernot Oreski (PCCL)

“Reliability challenges of new PV module designs”

Jonathan Govaerts (Imec)

“Interconnection, encapsulation and reliability for vehicle- and other integrated PV”

Joshua Stein (SNL)

“PACT’s Quest to Develop a Preconditioning Protocol for Metal Halide Perovskite Photovoltaic Modules”

Keisuke Ohdaira (JAIST)

“Development of crystalline silicon photovoltaic modules without encapsulant”

Kengo Maeda (KANEKA)

“Long-term reliability of new BIPV modules over 40 years”

(continued on next page.)

**Kenji Araki (University of Miyazaki)**

“Testing, Modeling, and Rating: Unusual behavior of curved PV devices under non-ideal solar irradiance”

**Laura Schelhas (NREL)**

“Assessing the Reliability of Metal Halide Perovskite Photovoltaic Modules with Accelerated Testing at the PACT Center”

**Michael Owen-Bellini (NREL)**

“DuraMAT program”

**Michio Kondo (Waseda University, AIST)**

“New Era of PV Technologies and Markets and Requirements of New Standards”

**Min Hsian Saw (TII)**

“New Reliability Challenges of PV Modules for Floating Applications”

**Peter Hacke (NREL)**

“Mechanisms and performance linked with UV-induced degradation”

**Stefaan De Wolf (KAUST)**

“Interface engineering for efficient and stable perovskite photovoltaics”

**Takahiro Chiba (Hokkaido University of Science)**

“Snow Load acting on the Eaves of Photovoltaic Array Facilities Installed on Ground”

**Takashi Minemoto (Ritsumeikan University)**

“Damp heat and high temperature test of flexible perovskite solar cell modules”

**Yasushi Uematsu (Tohoku University)**

“Wind-induced failure and its mitigation of photovoltaic systems in Japan”

## SAYURI-PV 2024 Workshop: Registration

Click [HERE](#) to register.

For the registration, please pay good attention to if all required information is correctly filled in.

Registration fee is free to attend this workshop, but does not include the banquet fee.

If you attend the banquet scheduled in evening of November 7, please pay the banquet fee (JP¥ 5,000) at the registration counter before the banquet.

**Privacy policy:** The personal information you fill in in the application for participation, etc. will be used for correspondence regarding the holding of this workshop and for information on events related to our office. The personal information you enter is managed appropriately in accordance with the [Personal Information Protection Regulations of the National Institute of Advanced Industrial Science and Technology \(Japanese\)](#).

**The registration deadline is [October 31, 2024](#).**

## SAYURI-PV 2024 Workshop: Call for Papers

We accept the submission of abstract for the presentation in this workshop, which is related to the reliability investigation of PV modules/system.

Some slots of oral presentation (ca. 20 min/slot) in this workshop will be open for the author(s) who submitted the abstract(s) of highest interest. And, the poster presentation is available also for the authors who submitted the noticeable abstract. The selection of speakers of the oral presentations will be determined by the organizing committee of SAYURI-PV 2024 Workshop, based on the comments from the program committee.

To submit an abstract for this workshop, please register yourself described above. And, send an abstract.

- All abstract must be in English.
- Please submit an abstract of no more than 300 words.
- No sales pitches will be accepted.

**The abstract submission deadline is [October 15, 2024](#).**

# SAYURI-PV 2024 Workshop

## Location, Travel & Accommodations

### Workshop Venue

Auditorium in AIST Tsukuba Central Campus

Central 1, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8561, JAPAN

[http://www.aist.go.jp/aist\\_e/guidemap/tsukuba/center/tsukuba\\_map\\_c.html](http://www.aist.go.jp/aist_e/guidemap/tsukuba/center/tsukuba_map_c.html)

### Travel information

Overview: [http://www.aist.go.jp/aist\\_e/guidemap/tsukuba/tsukuba\\_map.html](http://www.aist.go.jp/aist_e/guidemap/tsukuba/tsukuba_map.html)

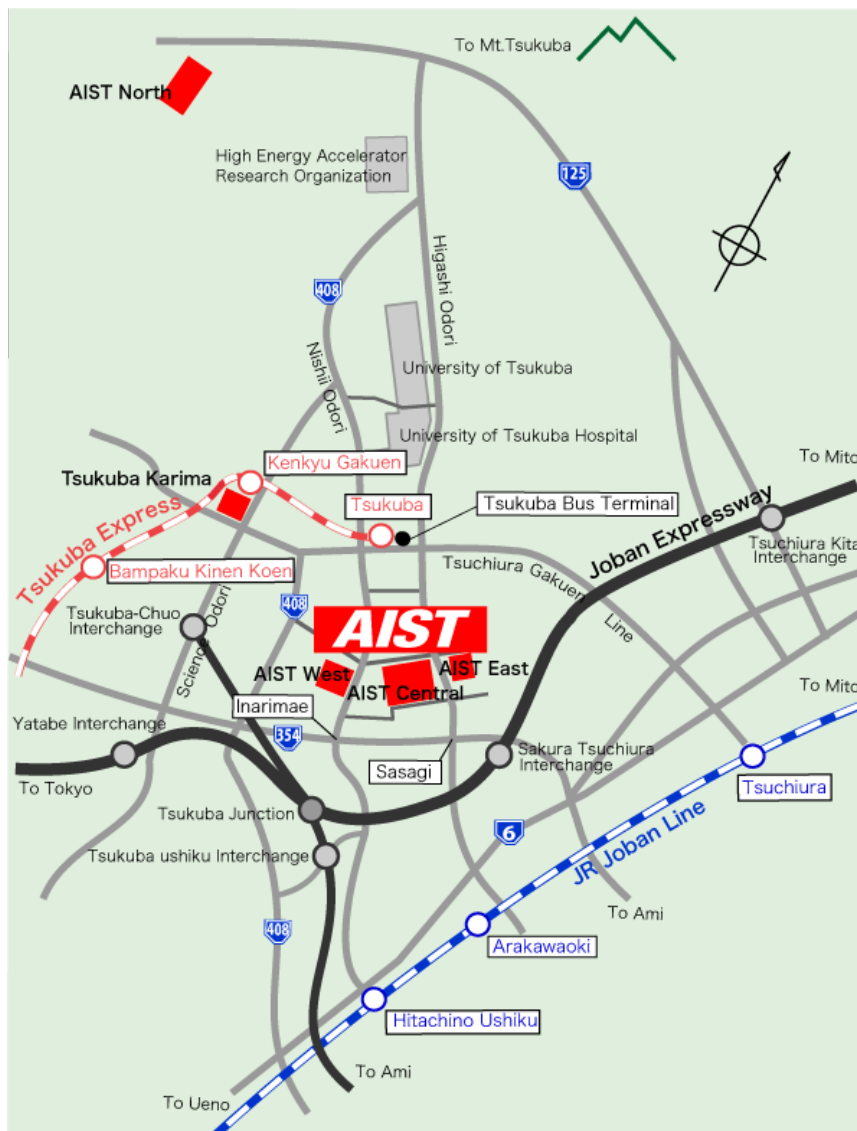
The city of Tsukuba is easily accessible

by bus from Narita International Airport (NRT) to “Tsukuba Bus Terminal”.

<http://www.chibakotsu.co.jp/en/kousoku/natts.html>

by train “Tsukuba Express” from Tokyo (Akihabara) to “Tsukuba”, “Kenkyu Gakuen”, or “Bampaku Kinen Koen”

<https://www.mir.co.jp/en/access/>



## Hotel Information

Since it's the most beautiful season in JAPAN, it's best to reserve early for your travel to Tsukuba.

Some hotels are located in Tsukuba city. Please book your room by yourself, by internet service.

We recommend the hotel located near the “Tsukuba” station or “Kenkyu Gakuen” station for your convenience to access the workshop venue.

For the local move to workshop venue from your hotel, local bus or taxi is useful.

### **SAYURI-PV 2024 Workshop: Contact**

When you need further information, please contact [sayuri-pv-sec-ml@aist.go.jp](mailto:sayuri-pv-sec-ml@aist.go.jp)

### **SAYURI-PV 2024 Workshop: Host**

Renewable Energy Research Center (RENRC)  
in National Institute of Advanced Industrial Science and Technology (AIST)

November 7th		Session	Presenter		Title / Remarks
9:00 Registration					
9:30	0:05	1	General Introduction	AIST	Takeshi Tayagaki
9:35	0:05	2	Welcome Address	AIST	Hideyuki Takagi, Director
9:40	0:25	3	General (Chair: Takashi Oozeki, Takeshi Tayagaki)	Waseda University, AIST	Michio Kondo
10:05	0:25	4		NREL	Michael Owen-Bellini
10:30	0:25	5		PCCL	Gernot Oreski
10:55	0:20	6		Q&A	
11:15 1:15 Lunch					
12:30	1:00	7	Poster session		
13:30	0:20	8	Silicon and Tandems (Chair: Michael Owen- Bellini, Takuya Matsui)	NREL	Peter Hacke
13:50	0:20	9		UNSW	Bram Hoex
14:10	0:20	10		Niigata University	Atsushi Masuda
14:30	0:20	11		AIST	Yasuo Chiba
14:50	0:20	12		Q&A	
15:10 0:30 Coffee Break					
15:40	0:20	13	Perovskite (Chair: Gernot Oreski, Shogo Ishizuka)	AIST	Takeshi Tayagaki
16:00	0:20	14		Ritsumeikan University	Takashi Minemoto
16:20	0:20	15		NREL	Laura Schelhas
16:40	0:20	15		SNL	Joshua Stein
17:00	0:20	16		KAUST	Stefaan De Wolf
17:20	0:20	17		Q&A	
17:40 End of 1st Day:					
18:00 Network Meeting					
November 8th		Session	Presenter		Title / Remarks
9:00 Registration					
9:30	0:20	18	BIPV/VIPV/Floating PV (Chair: Hitoshi Sai, Keiichiro Sakurai)	KANEKA	Kengo Maeda
9:50	0:20	19		AIST	Hideyuki Takagi
10:10	0:20	20		University of Miyazaki	Kenji Araki
10:30	0:20	21		Imec	Jonathan Govaerts
10:50	0:20	22		TII	Min Hsian Saw
11:10	0:20	23		Q&A	
11:30 1:30 Lunch					
13:00	0:20	24	Sustainability and Safety (Chair: Bram Hoex, Yasuo Chiba)	JAIST	Keisuke Ohdaira
13:20	0:20	25		Tohoku University	Yasushi Uematsu
13:40	0:20	26		Hokkaido University of Science	Takahiro Chiba
14:00	0:20	27		AIST	Takashi Oozeki
14:20	0:20	28			Q&A
14:40	0:05	29	Closing	AIST	Takeshi Tayagaki
14:45 Adjourn					
14:45 End of 2nd Day					

## Poster presentation

November 7th		Session	Presenter		Title / Remarks	
12:30	1:00	Poster session	1	University of Miyazaki	Kenji Araki	Similarities and differences between Perovskite and III-V tandem solar cells in outdoor power generation behavior
			2	AGC	Takumi Nagasako	Improvement of hail resistance of cover glass for solar panel
			3	EneCoat Technologies	Tatsuro Kawamura	Degradation of perovskite solar cell performances owing to intentionally formed pinholes
			4	AIST	Tadanori Tanahashi	AC Impedance Characteristics and Modeling of Electrical Leakage Circuit Within a Photovoltaic Module
			5	AIST	Hitoshi Sai	Durability evaluation of structural colored glasses for BIPV by accelerated stress
			6	AIST	Takuro N. Murakami	AIST R&D for Commercialization of Perovskite Solar Cells
			7	AIST	Kohei Yamamoto	Development of Perovskite Solar Cells using Amorphous Indium Zinc Oxide substrate