Summer School on raw materials in photovoltaics

Summed PV

1st day: Monday 08/09/2025

11:00 – 11:45	Registration of participants and welcoming addresses
11:45 – 12:35	**Raw materials issues**
	(Fabio Ferri – on line –, EIT RAW MATERIALS)
	General introduction on the classification of raw materials into essential, critical, and strategic categories, focusing on the importance of raw material availability, supply chains, and geopolitical considerations.
12:35 – 13:15	**The role of critical and strategic materials in current and future PV**
	(Vanni Lughi, UNIVERSITY OF TRIESTE)
13:15 – 14:40	**Lunch**
14:40 – 15:30	**LCA and PV modules sustainability: technical and regulatory drivers for the next years**
	(Nicola Baggio and Yuliya Katsyuk, FUTURASUN)
15:30 – 16:00	**Coffee break**
16:00 – 18:00	**Introduction to LCA**
	(Alessio Delle Monache, AMPERE TRANSITION)

2nd day: Tuesday 09/09/2025

9:00 – 10:40	**Life Cycle Assessment in Practice: From Software Setup to Case Study Analysis – Part I**
	(Alessio Delle Monache, AMPERE TRANSITION, Luca Ragusa, BITRON)
10:45 – 11:15	**Coffee break**
11:15 – 13:00	**Life Cycle Assessment in Practice: From Software Setup to Case Study Analysis – Part II**
	(Alessio Delle Monache, AMPERE TRANSITION, Luca Ragusa, BITRON)
13:00 – 14:00	**Lunch**
14:00 – 18:00	**Visit at BITRON Electronics Lab and "meet the startup" with Ampere Transition in Salerno**
18.00	**Social Event and Dinner**

Restaurant: GIAGIU (https://giagiupizzeria.it/), Lungomare Trieste, 218/220, 84122 Salerno

3rd day: Wednesday 10/09/2024

9:00 – 9:50	**Environmental Compatibility – A New Key Performance Indicator of Multi-Objective Power Electronics Design**
	(Luc Imperiali, ETH ZURICH, and Fionn Becker, FRONIUS)
9:50 – 10:45	**Reliability and sustainability of power electronics in PV systems**
	(Arya Sangwongwanich, AALBORG UNIVERSITY)
10:45 – 11:15	**Coffee break**
11:15 – 12:05	**Bridging the Gap – Similarities in the R&D of Li-ion Batteries and Solar Cells**
	(Stephan Eijt, DELFT UNIVERSITY)
12:05 – 13:00	**Revamping and Repowering in Photovoltaics**
	(Tom Hering, BLUE ELEPHANT)
13:00 – 14:00	**Lunch**
14:00 – 18:00	**Groups working on the project**

4th day: Thursday 11/09/2024

9:00 – 9:50	**Conductors and semiconductors for photovoltaic devices**
	(Olga Sacco, UNIVERSITY OF SALERNO)
9:50 – 10:45	**Recycling of metals from electronic boards**
	(Manuele Marcucci, IREN)
10:45 – 11:15	**Coffee break**
11.15 – 12:05	**PV module design for recycling**
	(Patrizio Manganiello, HASSELT UNIVERSITY)
12:00 – 13:00	**PV modules recycling**
	(Giulia Di Mari, ERION, and SOLREED)
13:00 – 14:00	**Lunch**
14:00 – 18:00	**Groups working on the project**

5th day: Friday 12/09/2024

9:00 – 9.50	**Technology transfer and funding**
	(Francesca Michelino, UNIVERSITY OF SALERNO)
9:50 – 13:00	**Presentation of the working groups projects results and award ceremony**
13:00 – 14:00	**Lunch and closing of the school**

LCA lectures and project to develop during the course: Monday 8th afternoon and Tuesday 9th morning will be entirely dedicated to LCA aspects in the PV field. A commercial software will be used by the professors and by all the students individually (educational license provided by the SUMMED-PV project). The students will be divided in groups, each one affording a hands-on activity on LCA on the Wednesday 10th and Thursday 11th afternoons. *These activities require that each student carries with him/her the own laptop*. No laptops will be provided by the school.

How to reach the UNISA Fisciano Campus residences on Sunday 7th and leave the UNISA Fisciano Campus on Friday 12th: on Sunday 7th at 22:00 a dedicated bus will transfer the school participants who requested this service from Salerno downtown (https://maps.app.goo.gl/HwoSso63r2XGQNFp7) to UNISA Fisciano Campus Residences (https://maps.app.goo.gl/apsfjYyh1NbxpGX39). Details are given in an email to the participants. At the end of the school, on Friday 12th at 14:00, participants must to move to their final destinations autonomously, by taking the line buses available from UNISA Fisciano Campus to Salerno city railway station or to Napoli Capodichino airport.

Social activities: on Monday 8th, Wednesday 10th and Thursday 11th a bus dedicated to the SUMMED-PV school participants will depart from the UNISA Fisciano Campus Residences (https://maps.app.goo.gl/apsfjYyh1NbxpGX39) at 19:00 and will stop in Salerno downtown (https://maps.app.goo.gl/HwoSso63r2XGQNFp7) to allow them to visit Salerno (dinner at the participant's charge). The same bus will leave Salerno downtown (https://maps.app.goo.gl/HwoSso63r2XGQNFp7) at 23:00 and will come back to the UNISA Fisciano Campus Residences (https://maps.app.goo.gl/apsfjYyh1NbxpGX39). The bus will be identified by the SUMMED-PV logo on the front. Details are given at the end of the working sessions in those days.