

Title of BIP: Solar energy for buildings: from components to cities

General information

Objectives and Description:

The SUN2C scientific school addresses solar energy applications from a technical point of view. A massive deployment of the use of solar energy is inevitable in order to decarbonate the energy sector. This implies to multiply by 5 to 10 the actual capacity in coming years. This can only be achieved through a holistic planning of the deployment of the solar energy.

SUN2C aims to participate both in the dissemination of knowledge and the state of the art, but also in the popularization of advances in the following themes:

- Development of materials, components and systems for collecting and converting solar energy (Photovoltaic, Solar Thermal, etc.)
- Innovative technologies for the integration of solar energy in different environments: water area (floating), mountain (high altitude), farming (AgriPV), city (BIPV), etc.
- Analysis and design of integrated solar buildings in cities (solar urban development)

Methods and outcomes:

All these themes will be addressed in the form of educational and accessible presentations to all up to more advanced presentations, through lectures. Workshops and applied course will be spread over the week, encompassing the different scales covered and the associated scientific themes, to allow the participants to apply their knowledge to specific case studies.

Field of Education:

Material for energy, Solar Thermal, Solar Photovoltaic, Building and Urban Physics

Target audience / Participants profile:

Master students, PhD students

No of ECTS issued: 3 ECTS

Language of instruction and requirements: English (B2) - Basic background in engineering or physical sciences, General knowledge about solar energy

Dates for physical activity: 2-6 November 2026

Location of physical activity: France, Saint-Gervais

Dates for virtual component: 9-14 November 2026

Virtual Component Description:

- Presentation of City Energy Analyst (CEA) tool and training (starting during intensive week)
- Coaching by experts / Case study done by each group of participants (4 to 5 participants per group)
- On line final presentation of the projects

Organizing Board

Receiving/Host university:

Université Savoie Mont-Blanc USMB, France (Prof. Christophe MENEZO – christophe.menezo@univ-smb.fr)

Sending/Partner universities:

P1. University of Turin, Italy (Nadia BARBERO – nadia.barbero@unito.it)

P2. Dalarna University, Sweden (Xingxing ZHANG – xza@du.se)

P3. Osnabrück University, Germany (Johannes KOKE – j.koke@hs-osnabrueck.de)

P4. University of Reutlingen, Germany (Antonio NOTHOLT – antonio.notholt@reutlingen-university.de)

P5. University of Genoa (UNIGE), Italy (Marco Fossa – marco.fossa@unige.it)

Detailed programme

1. Planned activities during virtual component:

This activity aims to introduce students to urban energy modeling using the City Energy Analyst (CEA) tool, with a particular focus on integrating renewable energies, especially solar energy. Students who already have some experience with this tool thanks to the intensive week will work in groups on a study of a city or neighborhood of their choice.

In this context, they will analyze the energy performance of the area studied, notably by evaluating the solar potential of buildings (roofs, facades) and exploring different scenarios for integrating photovoltaic and thermal solutions. The objective is to propose concrete strategies to improve energy efficiency and increase the share of renewable energies in the urban energy mix.

At the end of the activity, each group will present its project in a videoconference presentation to a jury.

2. Planned activities during physical component:

The on-site courses offered during the BIP in Saint-Gervais focus on solar energy and its integration into the built environment. The program covers key topics such as solar resource assessment, energy materials, system durability, and solar technologies including thermal systems, floating PV, and AgriPV.

Participants will also explore building integration (BIPV), life cycle assessment (LCA), solar potential at the urban scale, and energy grids. Theoretical sessions are complemented by practical workshops, allowing students to apply concepts in real-world contexts.

The program concludes with perspectives on solar cities, urban morphology, and distributed energy production, preparing students for the collaborative project using the City Energy Analyst tool.

	Monday	Tuesday	Wednesday	Thursday	Friday
		Course – Materials	Course – Solar Components & Solar Systems	Course – Building Integration	Course – Solar City and Territories
08:00–10:00	Reception/registration	Materials for Energy	Solar thermal	BIPV vs LCA	Solar potential
10:00–10:30		Coffee break			
10:30–12:30		Durability/Ageing	Floating PV	AgriPV	Energy grids
12:30–14:00	Lunch				
	Course – Solar Resource	Applied lectures	Applied lectures	Applied lectures	Prospects course (intro to virtual activity)
14:00–16:00	Characterization	Workshop	Workshop	Workshop	Urban Morphology and Distributed Production
16:00–16:30	Coffee break				
16:30–18:30	Variability	Workshop	Rotating Workshop	Workshop	Instructions for virtual project on CEA END
18:30–19:30	Posters			Closing Cocktail	
19:30–21:00	Dinner				

Application procedure

How: nomination can be sent to mobilite-unita@univ-smb.fr

Deadline to apply: September 1st, 2026

In parallel, students must apply for an Erasmus+ grant via the International Relations Office at their Home university to be part of the BIP.

What is covered by host university:

From 2nd to 6th of November 2026, this includes:

- Arrival on the 2nd of November morning to Saint-Gervais at the PlanB Living (150 Av. de Genève, 74190 Saint-Gervais-les-Bains).
- 2nd – 6th of November: week at Saint-Gervais (location: PlanB Living)
- 6th of November: travel back (on your charge: book & pay on your own, using Erasmus + travel grant), eventual additional accommodation on your own (book & pay)

Accommodation and food will be pay by the student.

The stay will be organised in Saint-Gervais (PlanB Living, at a negotiated rate – around €350 for full board; further details will be provided in due course).