

International Conference on Sustainability in Energy and Buildings

Invited Sessions

Title of Session: Photovoltaic and water: design, construction and performance analysis

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Description:

The use of photovoltaic systems in a water context creates positive synergy by increasing the cost effectiveness of PV systems, satisfying local demand for energy and creating positive effects on water (e.g. by limiting evaporation and the algae bloom problem).

It is usually systems installed on the mainland that are considered, but nowadays the need to further exploit PV technology requires the search for new solutions.

The aim of this special session is to attract researchers that are investigating the possibility of installing photovoltaic systems over (e.g. a floating system) or under (e.g. a submerged system) the water surface with or without storage systems that can also be either floating or submerged.

Specifically, floating a PV plant is at present a budding technology: only a few plants have been installed around the world as pilot projects and demonstrators, without there being any large-scale investments. However, the reduction in costs of the installation as well as the increasing interest in renewable energy in emerging countries suggest that, in the near future, the sector will experience a rapid take-off and this will be accompanied by an increasing interest in acquiring expertise in this area.

Aims and objectives (including but not limited to):

1. photovoltaic technologies for application in water
2. the modelling of floating and submerged PV systems;
3. the optimal electric behavior of PV modules in water;
4. tracking and concentration in floating systems;
5. PV system measurements;
6. diagnosis methods for PV arrays and systems in water;
7. reliability and testing;
8. storage systems integrated in floating or submerged structures;
9. urban integration;
10. cost analysis.



Artist view of a possible floating plan



Integration of PV modules in a swimming pool

Website URL (if any):

<https://www.researchgate.net/project/Photovoltaic-Floating-systems-design-construction-and-performance-analysis>

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