

Physics, Simulation, and Photonic Engineering of Photovoltaic Devices VIII

Tuesday - Thursday 5 - 7 February 2019

This conference is no longer accepting submissions.

Late submissions may be considered subject to chair approval. For more information, please contact [Matt Novak](#).

Important Dates

[SHOW](#) | [HIDE](#)

Abstract Due:
25 July 2018

Author Notification:
1 October 2018

Manuscript Due Date:
9 January 2019

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Call for Papers

This conference attempts to capture basic research and breakthroughs in the application of photonic/novel device architectures and the development of advanced modeling and simulation techniques to feed the innovation pipeline leading to revolutionary and practically viable high-efficiency photovoltaic (PV) technologies. The conference also aims at providing an interdisciplinary forum to enhance interactions between physicists, photonic engineers, and photovoltaic device specialists at both the experimental and theoretical levels.

Theoretical or experimental papers are sought that address recent advances in basic material/device physics, simulation, demonstration, and optimization of:

- advanced light management concepts and architectures, including new approaches to spectral engineering (i.e. luminescent concentrators, up-down converters), light concentration, surface texturing and light trapping (i.e. plasmonic cavities, micro/nano-engineered ARs), as well as synergistic hybrid/multifunctional designs
- non-conventional PV converters, in particular application of advanced photonics to enable unique conversion mechanisms. Examples include application of photonics to enable the demonstration of advanced quantum confined or nanostructured concepts, intermediate band concepts, multiple exciton generation, thermophotonics or hot-carrier effects
- advanced single and multi-junction devices leveraging on innovative materials or/and photonic architectures. In particular the simulation or/and demonstration of the application of cross-cutting photonic engineering approaches for enhancing the performance, reliability and functionality of these devices
- quantum- and nano-structured devices with a particular focus on deciphering the science at play in photogeneration, recombination, and carrier transport in quantum well/quantum dot and wire devices
- defect-tolerant PV designs and application of photonics to enhance defect tolerance (dislocations, radiation defects, grain-boundaries, points defects) of solar cells
- contributions dealing with the characterization of the above mentioned devices/concepts as well as related advanced scalable micro/nano-fabrication technique are also of relevance.

Finally the conference also welcomes new and emerging methods in simulation of PV and hybrid photonic/PV devices, including but not limited to 3D-drift diffusion and RCWA models, integrated ab-initio and multi-scale simulation techniques.