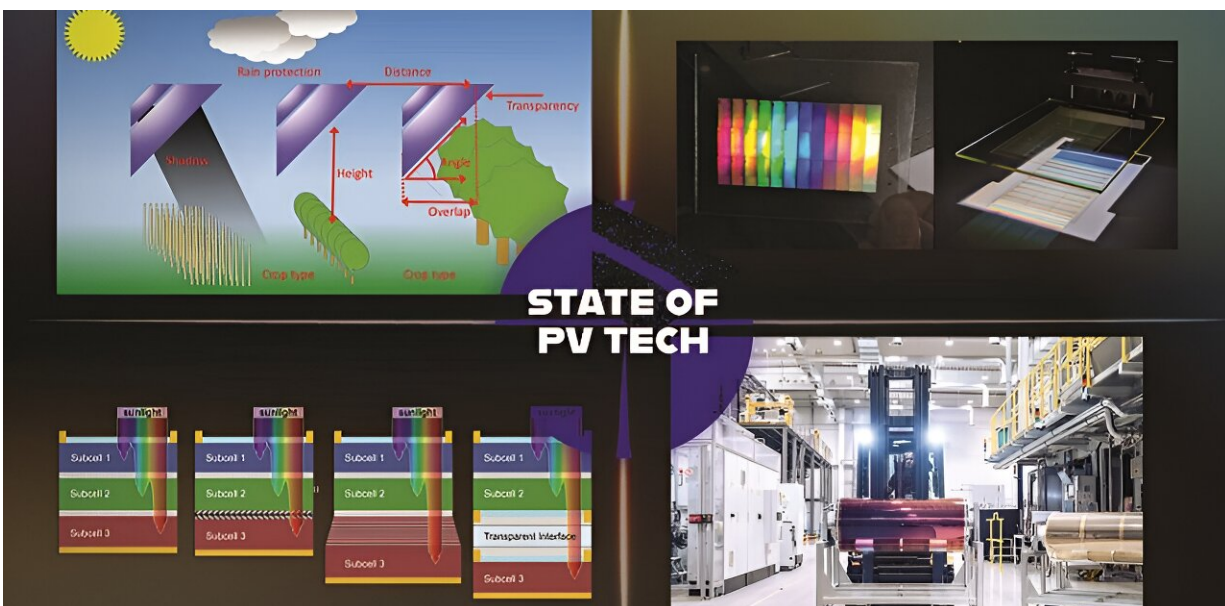


Report highlights a range of emerging photovoltaic technologies

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Authored by a community of 41 researchers from across the globe, the open access "Status report on emerging photovoltaics" offers snapshots of a range of emerging PV technologies. Credit: *Journal of Photonics For Energy* 2023). DOI: 10.1117/1.JPE.13.042301

Photovoltaic (PV) solar energy is emerging as a significant contributor to global sustainable energy production. Inspired by the continued technological progress of PV, and motivated by the challenges ahead, the *Journal of Photonics for Energy (JPE)* recently published a [status report on emerging photovoltaics](#) written by a community of 41 experts from

across the globe.

The report contains snapshots of a range of emerging PV technologies, highlighting key applications and pathways to commercialization. The report focuses on new materials and device concepts, light management designs, and strategies for exceeding current limits to solar PV [energy](#) conversion.

Each section provides a brief overview, a technology status update, and a discussion of challenges facing efforts to commercialize and scale up solar PV globally, including developing appropriate manufacturing tools and processes, as well as enhancing PV efficiency and sustainability.

JPE Editor-in-Chief Sean Shaheen, professor at University of Colorado Boulder and co-author of the report, remarks, "The report is intended to be a convenient resource for people within and outside the field, including new researchers, students, technology managers, and program managers, who can play a role in accelerating the global effort."

He also notes, "The diverse contributions to this report demonstrate the remarkable range of emerging PV technologies as well as developments in their applications. They also describe some of the challenges to widespread deployment."

Concluding with a survey of contributing authors regarding the needs and future evolution of PV, the report presents a variety of perspectives on priorities and challenges involved. In general, the report suggests broadening the performance metrics by which technological approaches are assessed, for instance, to include life-cycle analysis to ensure that [solar cells](#) generate energy at minimum equivalent to that required for their manufacture.

Despite a variety of perspectives, the report communicates a shared

spirit of optimism regarding the future of PV technology.

More information: Annick Anctil et al, Status report on emerging photovoltaics, *Journal of Photonics for Energy* (2023). [DOI: 10.1117/1.JPE.13.042301](https://doi.org/10.1117/1.JPE.13.042301)

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