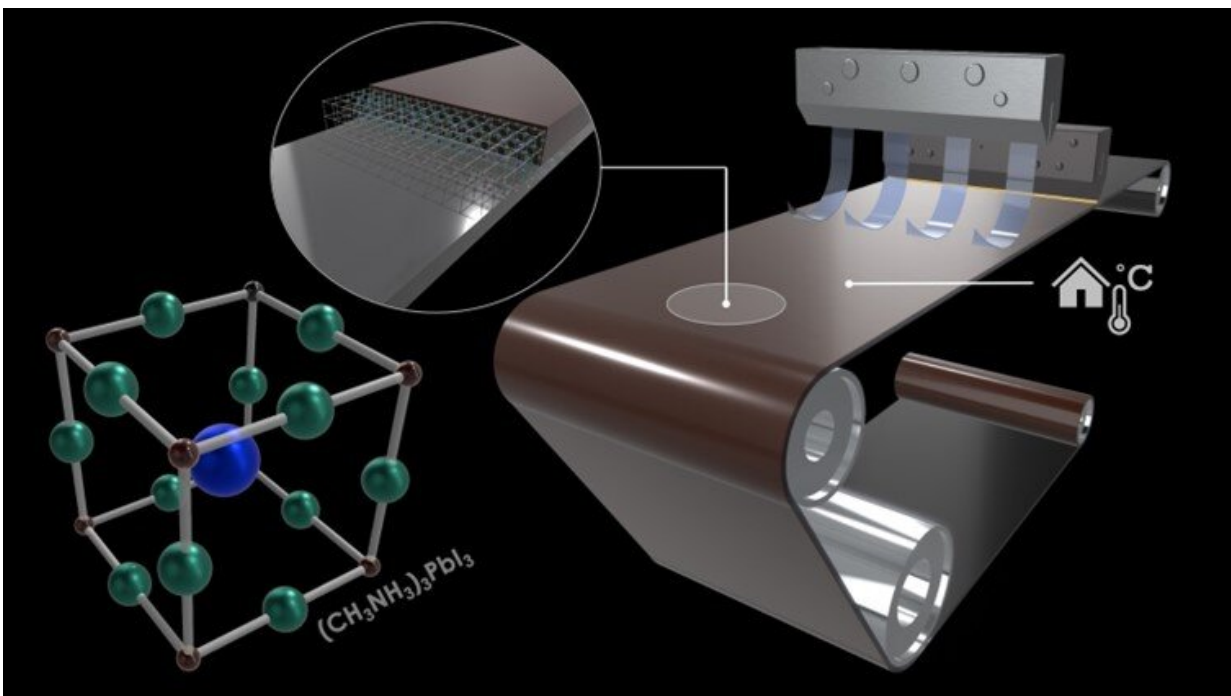


A rethink of the building blocks for solar panels could help mass production

June 27 2022



Credit: Ravi Silva

An original approach to mass-producing low-cost solar cell foundation blocks could lead to the wide adoption of solar panels made from perovskite ink—a "miracle material"—according to research from the University of Surrey.

In the paper published in *Scientific Reports*, Dr. Ehsan Rezaee, a post-

doctoral fellow of the Advanced Technology Institute (ATI) at the University of Surrey, explains his research:

"The objective is simply to produce solar cell building blocks out of perovskite ink. Whilst perovskite ink is not a new technology, current inks do not guarantee seamless transitions on an industrial scale, as the manufacturing process needs to be highly controlled and optimized.

"Our [perovskite ink](#) produces a fast and reproducible way to reliably fabricate these solar cell building blocks on a mass scale, paving the way for its use in commercial markets."

Perovskite [solar cells](#) are a low-cost, lightweight solution and can be built either rigid or flexible, with more possibilities to easily transport and install. The new study examines the foundation blocks of solar cells made of perovskite rather than the traditional [silicon](#), as perovskite cells harvest light through the visible part of the solar spectrum, which has more energy.

Professor Ravi Silva, Director of the ATI at the University of Surrey, said: "The University of Surrey has always believed in the potential of solar panels to be a critical research area which will, in time, allow us to move away from dangerous old energy sources.

"However, we must do more to improve the connection between research and production on a mass industry scale in order to see this as a future turning point, which is the purpose of our paper."

More information: Ehsan Rezaee et al, A route towards the fabrication of large-scale and high-quality perovskite films for optoelectronic devices, *Scientific Reports* (2022). [DOI: 10.1038/s41598-022-10790-z](https://doi.org/10.1038/s41598-022-10790-z)

Provided by University of Surrey

Citation: A rethink of the building blocks for solar panels could help mass production (2022, June 27) retrieved 19 April 2024 from <https://techxplore.com/news/2022-06-rethink-blocks-solar-panels-mass.html>

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