# Article information:

One-Year stable perovskite solar cells by 2D/3D interface engineering | Nature Communications
<https://www.nature.com/articles/ncomms15684>

# Article summary:

1. Perovskite solar cells have the potential to be more efficient and cost-effective than silicon solar cells, but their instability under operative conditions is a major barrier to market uptake.

2. This article presents a new concept of engineering a multi-dimensional junction made of 2D/3D perovskites, combining the enhanced stability of 2D perovskites with the excellent charge transport of 3D ones.

3. The resulting solar cells are highly efficient and ultra-stable, with >10,000 hours of stability measured under controlled standard conditions and in the presence of oxygen and moisture.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

This article provides an overview of research into organo lead-halide perovskite solar cells (PSCs), which have the potential to be more efficient and cost-effective than silicon solar cells. The authors present a new concept for engineering a multi-dimensional junction made of 2D/3D perovskites, which combines the enhanced stability of 2D perovskites with the excellent charge transport of 3D ones. The resulting solar cells are highly efficient and ultra-stable, with >10,000 hours of stability measured under controlled standard conditions and in the presence of oxygen and moisture.

The article is generally well written and provides an informative overview on PSCs research. It is clear that the authors have conducted thorough research into this topic as they provide detailed information on various strategies used to improve device stability such as cross-linking additives, compositional engineering, buffer layers between perovskite and HTM, moisture blocking HTMs etc., as well as discussing issues related to device testing such as temperature control or light exposure levels.

The article does not appear to contain any bias or promotional content; it presents both sides equally by providing an overview on current strategies used for improving device stability while also noting possible risks associated with them. Furthermore, all claims made in the article are supported by evidence from previous studies or experiments conducted by the authors themselves.

The only potential issue with this article is that it does not explore any counterarguments or alternative approaches that could be taken when attempting to improve device stability; however this is likely due to space constraints rather than any intentional omission on behalf of the authors.

# Topics for further research:

* Perovskite solar cell stability enhancement strategies
* Perovskite solar cell buffer layers
* Cross-linking additives for perovskite solar cells
* Moisture blocking HTMs for perovskite solar cells
* Temperature control for perovskite solar cell testing
* Light exposure levels for perovskite solar cell testing

# Report location:

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