

Realization of low carbon society through game changing technologies

Development of highly efficient perovskite solar cells with low environmental impact

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Summary :

Tandem solar cells, which exceed the limits of silicon solar cells, are attracting attention. In particular, if an all-perovskite tandem solar cell is realized, the ultimate lightweight and low-cost solar cell can be realized.

However, most successful perovskite solar cells so far contain toxic lead, which might limit the widespread use of these new technologies. Therefore, in this study, we will develop the lead-free perovskite solar cell materials for tandem applications through the development of new photovoltaic materials, interface materials, and device evaluation technologies with the aim of achieving high efficiency, low cost, and low environmental impact.

The items to be achieved are (1) development of lead-free perovskite solar cells with bandgaps suitable for tandem applications, (2) realization of a new tandem structure suitable for all-perovskite configurations, and (3) improvement of the stability of the lead-free perovskite solar cells.

