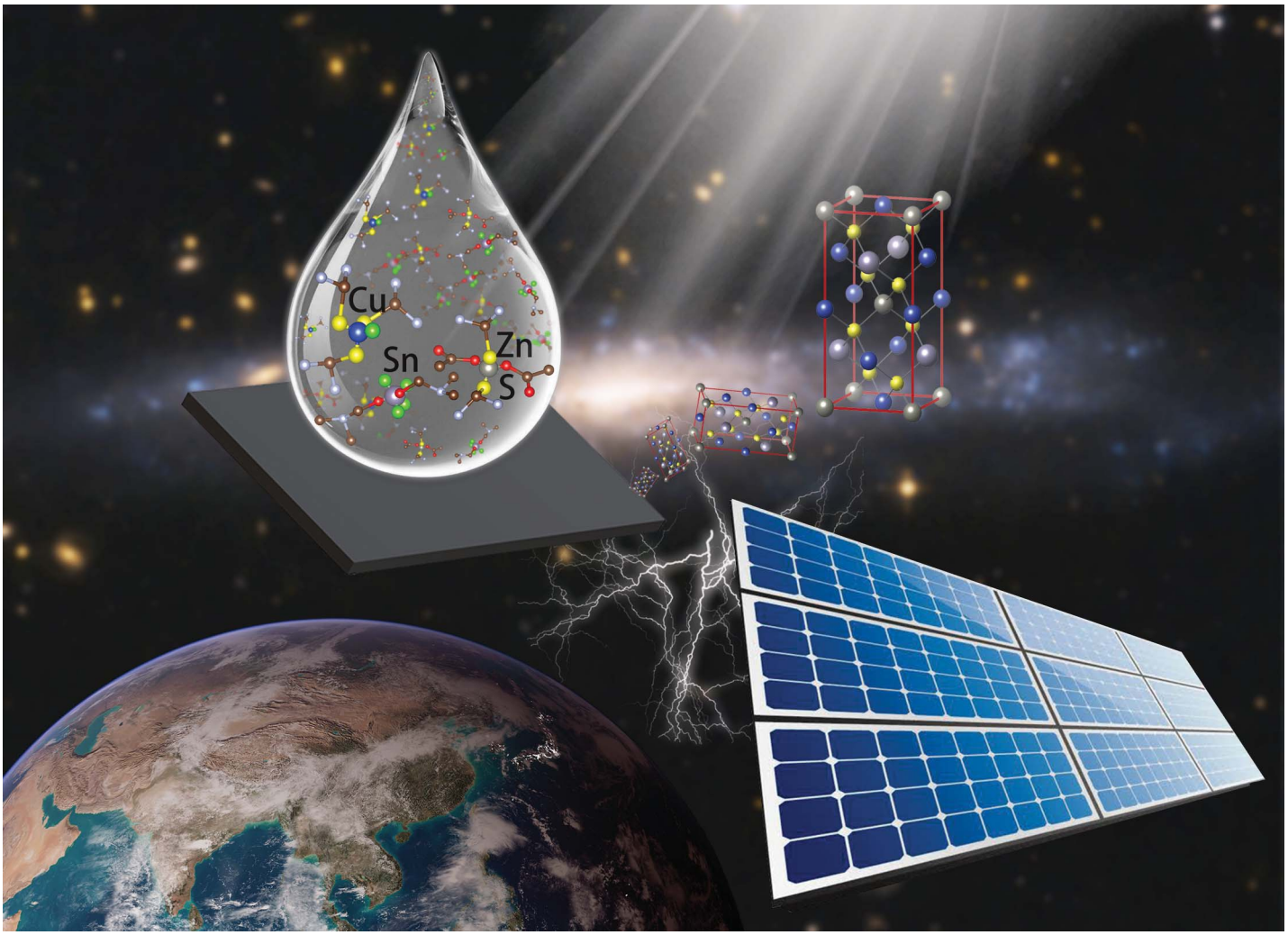

Highlighting a study on a solution processed kesterite solar cell by Prof. Hao Xin's group from Nanjing University of Posts and Telecommunications.

11.5% efficient $Cu_2ZnSn(S,Se)_4$ solar cell fabricated from DMF molecular solution

Efficient CZTSSe thin film solar cells are fabricated from N, N-dimethylformamide (DMF) solution. Studies of chemical reactions of precursors CuCl, $Zn(OAc)_2$, $SnCl_4$, and Thiourea (Tu) in the DMF solution and the reaction path from solution to CZTSSe absorber material show a kesterite structured CZTS precursor film was formed due to the coordination of $SnCl_4$ with DMF, which enables direct phase transformation grain growth mechanism and thus high quality CZTSSe absorber materials. A champion device with an efficiency of 11.5%, a V_{oc} of 0.491 V, and a FF of 70.6% has been achieved, the highest performance of CZTSSe solar cells fabricated from DMF molecular solution.

As featured in:

See Weibo Yan, Hao Xin *et al.*, *J. Mater. Chem. A*, 2021, **9**, 12981.

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