



Showcasing research from Dr Jichun Ye laboratory, Laboratory of Optoelectronic Materials and Device, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, China.

Cr-O-In interlocking for window layer delamination resistance in operationally stable perovskite/silicon tandem solar cells

Research by Prof. Jichun Ye's group at NIMTE, CAS, focuses on next-generation photovoltaics. This work addresses window layer delamination in perovskite/silicon tandems *via* a Cr-O-In interlocking interface. Formed through chromium diffusion, this interface strengthens structural adhesion, enhances electron mobility *via* C<sub>60</sub> doping, and shields against sputtering damage and oxygen ingress. Consequently, monolithic perovskite/TOPCon tandems achieve a certified efficiency of 32.51% and exceed 1400 hours of operational stability, offering a scalable and durable pathway for the commercialization of high-efficiency tandem photovoltaics.

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See Jichun Ye and Huan Li *et al.*, *Energy Environ. Sci.*, 2026, **19**, 2172.