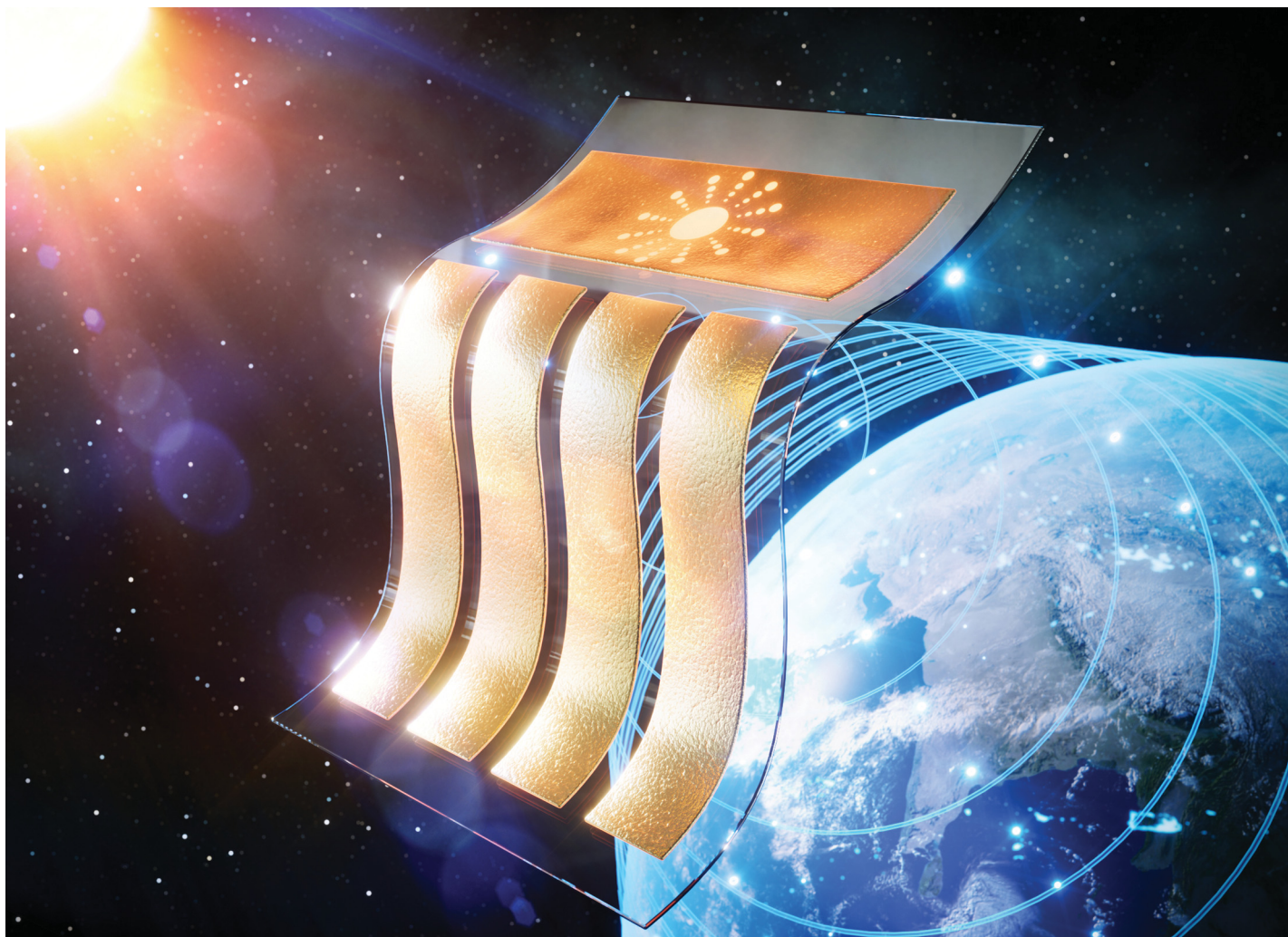


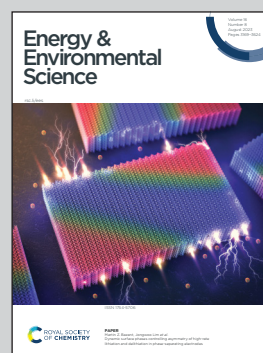


Showcasing research from Professor Bumjoon Kim's laboratory, KAIST, and Yun-Hi Kim's laboratory, GNU, Republic of Korea.

Trimerized small-molecule acceptors enable high-performance organic solar cells with high open-circuit voltage and prolonged life-time

Small-molecule acceptors (SMAs) have led to remarkable advances in the power conversion efficiencies (PCEs) of organic solar cells (OSCs), but the resulting OSCs typically have poor long-term stability. Herein, we develop a new trimer acceptor (TYT), consisting of three Y-based molecules linked by thiophene spacers. The TYT-based OSCs demonstrate high-performance (PCE = 18.2%) and excellent photostability ($t_{80\%}$ lifetime > 8000 h), which outperform those of the OSCs based on the monomer (MYT, PCE = 16.4% and $t_{80\%}$ lifetime = 35 h) and dimer acceptors (DYT, PCE = 17.3% and $t_{80\%}$ lifetime = 2551 h).

As featured in:



See Bumjoon J. Kim *et al.*,
Energy Environ. Sci., 2023, **16**, 3339.