

Abstract Submitted  
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**Non-tinted Transparent Luminescent Solar Concentrators Employing Both UV and NIR Selective Absorbers** YIMU ZHAO, RICHARD LUNT, Michigan State Univ — Luminescent solar concentrators are a potentially low-cost solar harvesting solution that additionally offer opportunities for integration around buildings and windows. However, the visible absorption and emission of previously demonstrated chromophores hamper their widespread applications including solar windows. Here, we demonstrate non-tinted transparent luminescent solar concentrators (TLSC) that employ both ultraviolet (UV) and near-infrared (NIR) selective absorbing luminophores that create an entirely new paradigm for power-producing transparent surfaces and enhances the potential over UV-only TLSCs. We have previously designed UV-harvesting systems composed of metal halide phosphorescent luminophore blends that enable absorption cutoff positioned at the edge of visible spectrum (430nm) and massive-downconverted emission in the near-infrared (800nm) with quantum yields for luminescence of 75%. Here, we have developed a complimentary TLSC employing fluorescent organic salts with both efficient NIR absorption and deeper NIR emission. We will discuss the photophysical properties of these luminophores, the impact of ligand-host control, and optimization of the TLSC architectures.

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