

Abstract Submitted
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Absorption and emission of NIR fluorophores for use in Wavelength Selective Solar Concentrators KAITLIN HELLIER, CARLEY CORRADO, SUE CARTER, UCSC — Wavelength Selective Solar Concentrators (WSSCs) offer a variety of applications as compared to traditional solar panels. Exploiting the property of power generation with transmission, we have turned our attention to the greenhouse industry. Our current design employs an organic dye (Lumogen Red 305) with an excitation peak in green wavelengths and an emission peak in red wavelengths, specifically targeting wavelengths unused in photosynthesis. To increase the efficiency of the WSSC without disrupting either existing function, we explore the addition of NIR dyes. Presented are the absorption and emission peaks of the dyes deposited into poly-vinyl butyral (PVB), polymethyl methacrylate (PMMA), and (TPU); the quantum yields of these films; and the combined spectra of the dyes with LR305.

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