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Green polariton photoluminescence in organic microcavities containing the red-emitting phosphor PtOEP STEPHANE KENA-COHEN, Department of Electrical Engineering, Princeton University, Princeton, NJ 08544, STEPHEN R. FORREST, Department of EECS and Physics, University of Michigan, Ann Arbor, MI 48109 — Green upper and lower branch polariton photoluminescence (PL) is observed in microcavities containing the red-emitting organic phosphor 2,3,7,8,12,13,17,18-octaethyl-21H, 23H-porphyrin platinum(II) (PtOEP). This PL is attributed to cavity polariton states formed by coupling to the Q(0,0) transition of PtOEP (fluorescence). The PL spectra mirror the polariton dispersion obtained from angle-resolved reflectivity measurements. The increased fluorescence intensity compared to the neat film case is due to the reduced lifetime of the polariton states. This PL is also accompanied by strong red emission (phosphorescence) due to intersystem crossing (ISC) to the triplet state of PtOEP.

Stephane Kena-Cohen
Department of Electrical Engineering, Princeton University

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