

Publication

A Near-Infrared-II Emissive Chromium(III) Complex

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The combination of p-donating amido with p- accepting pyridine coordination units in a tridentate chelate ligand causes a strong nephelauxetic effect in a homoleptic Cr(III) complex, which shifts its luminescence to the NIR-II spectral range. Previously explored Cr(III) polypyridine complexes typically emit between 727 and 778 nm (in the red to NIR-I spectral region), and ligand design strategies have so far concentrated on optimizing the ligand field strength. The present work takes a fundamentally different approach and focusses on increasing metal–ligand bond covalence to shift the ruby-like 2E emission of Cr(III) to 1067 nm at 77 K.

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