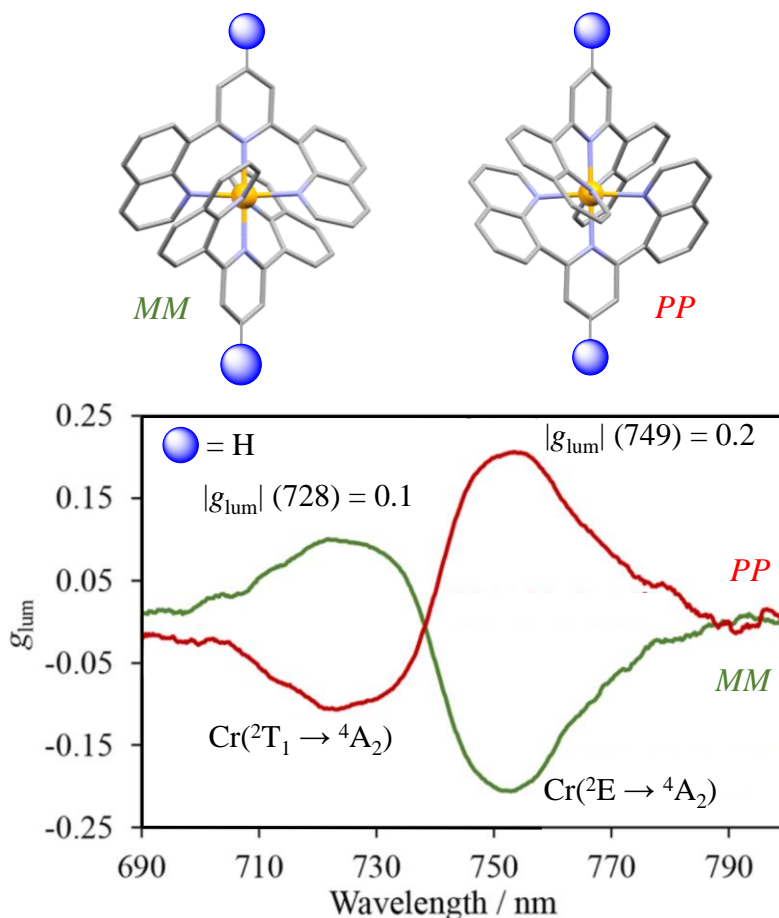


Long-lived CPL from chiral Cr(III) complexes

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A series of highly emissive inert and chiral Cr(III) complexes displaying dual Circularly Polarized Luminescence (CPL) within the NIR region at room temperature have been prepared and characterized. The helical homoleptic $[\text{Cr}(\text{dqpR})_2]^{3+}$ ($\text{dqp} = 2,6\text{-di}(\text{quinolin-8-yl})\text{pyridine}$; $\text{R} = \text{H}, \text{OCH}_3, \text{Br}$ or $\text{C}\equiv\text{CH}$) complexes were synthesized as racemic mixtures and could be resolved and isolated into their respective *PP* and *MM* enantiomers by chiral stationary phase HPLC (for $\text{R} = \text{OCH}_3, \text{Br}$ and $\text{C}\equiv\text{CH}$) or by cation-exchange chromatography (for $\text{R} = \text{H}$). The corresponding enantiomers show two polarized emission bands within the 700-780 nm range corresponding to the characteristic metal-centered $\text{Cr}({}^2\text{E} \rightarrow {}^4\text{A}_2)$ and $\text{Cr}({}^2\text{T}_1 \rightarrow {}^4\text{A}_2)$ transitions with large g_{lum} ranging from 0.17 to 0.20 for the former transition. The high quantum yields afford important CPL brightness of up to $170 \text{ M}^{-1}\cdot\text{cm}^{-1}$ (for $[\text{Cr}(\text{dqpC}\equiv\text{CH})_2]^{3+}$), a key point for applications as chiral luminescent probes.



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