

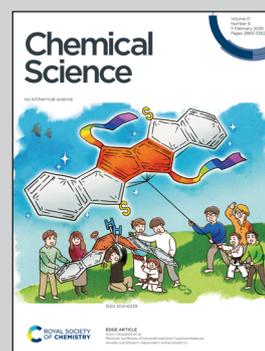
Showcasing research from the group of Dr. Yoshimasa Wada, Institute of Industrial Science, The University of Tokyo, Tokyo, Japan.

Zincafluorene complex with an empty C–Zn π orbital that captures visible light

Zn(II) complexes are widely known to be colorless, and the Zn center has therefore been regarded as photophysically innocent with respect to visible-light absorption. Building on our previous finding that Zn–Zn empty-orbital interactions enable visible-light absorption in a dinuclear Zn complex, this work demonstrates that an empty C–Zn π orbital facilitates visible-light absorption even in mononuclear Zn complexes. This molecular design gives rise to a mononuclear Zn complex that exhibits long-lived, bright emission and functions as a photocatalyst under blue LED irradiation, showcasing a non-innocent role of the Zn center in visible-light photofunction.

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See Yoshimasa Wada *et al.*, *Chem. Sci.*, 2026, **17**, 3023.