【无机化学论坛】 New luminescent complexes made from Earth-abundant transition metals and their applications in photoredox catalysis and upconversion

（香港大学-北京大学金属化学生物学讲习班）

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地点：北京大学化学学院A区717报告厅.

**摘要：**Ru(II) polypyridine and cyclometalated Ir(III) compounds emitting from metal-to-ligand charge-transfer (MLCT) excited states are widely used in lighting, sensing, photoredox catalysis, photodynamic therapy, and triplet-triplet annihilation upconversion. In the first-row of transition metals, luminescent MLCT states of isoelectronic d6 species are much more difficult to install, mainly because of the weaker the ligand field in comparison to second- or third-row transition metal complexes.1 The first part of this talk will focus on our recent discovery of luminescent MLCT states in Mn(I) and Cr(0) complexes,2,3 set against the background of prior work on Fe(II) compounds. The second part of the talk will concentrate on Mo(0) complexes and their applications in photochemical upconversion and photoredox catalysis.4

(1) Wegeberg, C.; Wenger, O. S., [*JACS Au* **2021**, doi: 10.1021/jacsau.1c00353](https://pubs.acs.org/doi/abs/10.1021/jacsau.1c00353).

(2) Herr, P.; Kerzig, C.; Larsen, C. B.; Häussinger, D.; Wenger, O. S., [*Nat. Chem.* **2021**, *13*, 956](https://www.nature.com/articles/s41557-021-00744-9?proof=tNature).

(3) Wegeberg, C.; Häussinger, D.; Wenger, O. S., [*J. Am. Chem. Soc.* **2021**, *143*, 15800](https://pubs.acs.org/doi/abs/10.1021/jacs.1c07345).

(4) Bilger, J. B.; Kerzig, C.; Larsen, C. B.; Wenger, O. S., [*J. Am. Chem. Soc.* **2021**, *143*, 1651](https://pubs.acs.org/doi/10.1021/jacs.0c12805).

**个人简历**

Oliver S. Wenger received a Ph. D. degree from the University of Berne (Switzerland) in 2002 after work with Hans U. Güdel. Following postdoctoral stays at Caltech (with Harry B. Gray, 2002-2004) and University of Strasbourg (with Jean-Pierre Sauvage, 2004-2006), he became assistant professor at University of Geneva in 2006. In 2009, he moved to the University of Göttingen (Germany) as associate professor. He returned to Switzerland in 2012 to the University of Basel, where he was promoted to full professor in 2018.