Metal-Ligand Electronic Synergy and Its Implication

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Metal-ligand electronic synergy in selective ruthenium set up facilitates molecular bistability as well as metal-ligand cooperativity driven molecular transformation including small molecule activation. Under the pretext of the aforestated events, present deliberation would primarily be focused on addressing (i) intramolecular electron exchange at the metal-ligand interface ($M^nL^p \leftrightarrow M^{n+1}L^{p-1}$) of selectively designed rather challenging redox-active molecular frameworks and (ii) redox mediated chemical noninnocence of coordinated ligand moieties via activation of molecular oxygen (O_2).

Selective References:

Lahiri *et al.*: *Inorg. Chem.* **2024**, *63*, 13664; *Inorg. Chem.* **2024**, *63*, 12175; *Inorg. Chem.* **2024**, *63*, 10312; *Chem. Commun.* **2024**, *60*, 6011; *Inorg. Chem.* **2023**, *62*, 7779; *Inorg. Chem.* **2022**, *61*, 6347; *Inorg. Chem.* **2021**, *60*, 5791; *Inorg. Chem.* **2021**, *60*, 9607; *Inorg. Chem.* **2021**, *60*, 11883; *Inorg. Chem.* **2021**, *60*, 18260; *Angew. Chem. Int. Ed.* **2021**, *60*, 11206; *Chem. Eur. J.* **2021**, *27*, 5461; *Inorg. Chem.* **2020**, *59*, 1355; *Inorg. Chem.* **2019**, *58*, 11458; *Chem. Commun.* **2017**, *53*, 4006.