

FROM PSM MODIFICATION ON IRON-TRIAZOLE SPIN CROSSOVER COMPLEXES TO THEIR USE IN CATALYSIS

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Molecular spin-crossover (SCO) complex represents promising magnetic, dielectric, optical, mechanical, and thermal properties with high potential for applications. These transition metal complexes of certain third-row transition metal ions exhibit reversible switching between their low spin (LS) and high spin (HS) electronic configurations under various external stimuli (such as temperature, pressure, light radiation, etc.) [1].

In our recent work, we found that SCO complexes are not only promising for post-synthetic modification (PSM) reactions, which have attracted more attention as an efficient tool to perform a chemical transformation on previously synthesized materials [2-4], but also can be used as reaction catalysts. For example, the presence of this SCO complex allows the quantitative formation of the imine in a few minutes.

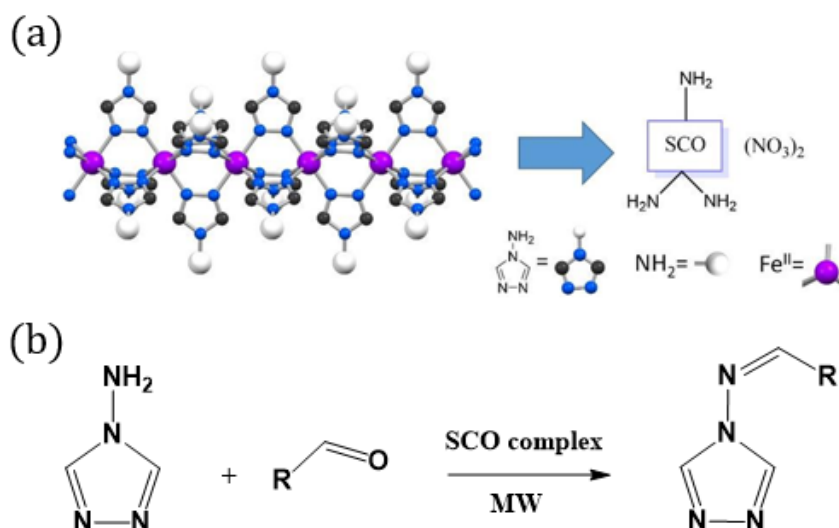


Figure. (a) 1D polymeric structure of the $[\text{Fe}(\text{NH}_2\text{trz})_3](\text{NO}_3)_2$ and its corresponding schematics. (b) Formation of the imine catalyzed by SCO complex.

[1] Adv. Mater. 30, 17003862 (2018)

[2] ACS Cent. Sci., 2020, 6, 1046–1057

[3] Eur. J. Inorg. Chem. 2021,21, 2000-2016

[4] New J. Chem., 2022,46, 22004-22012