SEMINAR ANNOUNCEMENT

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Trade-off issues in synthesizing magnetic coordination polymers

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Abstract

Adding magnetic functional groups to the polymer hosts is an efficient way to synthesize magnetic coordination polymers. Intuitively, magnetic complexes with highly localized orbits in the functional groups could easily induce the magnetic moments in the polymers because of the significantly strong Coulomb interaction in the localized orbits. However, the orbital energy of the highly localized orbits in the magnetic complex will be much higher than that of the polymer host, which results in the suppression of magnetic moments because low spin states prefer to exist in the cases of high orbital energy differences. On the contrary, the relatively small orbital energy difference could easily create high-spin states and induce magnetic moments; however, the Coulomb interaction in the complexes will be too weak to generate the magnetic moment. To investigate the trade-off, we propose a two-level model representing a direction for the experimentalists to realize the trade-off issues in synthesizing magnetic coordination polymers.

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