

## البحث الخامس (بحث رقم 4 في قائمة الأبحاث محل تقييم اللجنة الموقرة)

<b>Title</b>	A cyanide-bridged wheel featuring a seven-coordinate Mo(III) center
	عجلة تحتوى على سيانيد المولبدنيوم الثلاثى سباعي التناسق
<b>Authors</b>	David K. Kempe, Brian S. Dolinar, Kuduva R. Vignesh, Toby J. Woods, <b>Mohamed R. Saber</b> and Kim R. Dunbar
<b>Journal Information</b>	<i>Chem. Commun.</i> , 2019, 55, 2098-2101
<b>ISSN</b>	1359-7345 (print) 1364-548X (web)
<b>Impact factor</b>	<b>Q1 - 6.16 - (2019)</b>

### **Abstract:**

A new cyclic molecule incorporating  $[\text{Mo}^{\text{III}}(\text{CN})_7]^{4-}$  has been synthesized and characterized by single crystal X-ray methods, SQUID magnetometry and theoretical calculations. The wheel molecule  $[\text{Mo}^{\text{III}}(\text{CN})_7]_6[\text{Ni}(\text{L})]_{12}(\text{H}_2\text{O})_6$  exhibits ferromagnetic Mo–Ni coupling which did not exist for the previously reported octacyanometallate analogue  $\text{Mo}^{\text{IV}}(\text{CN})_8]_6[\text{Ni}(\text{L})]_{12}(\text{H}_2\text{O})_6$ . These results indicate that known supramolecular architectures incorporating octacyanometallates can be used as platforms for making new molecules incorporating seven-coordinate cyanide precursors. This strategy can be useful in future work as a shortcut to reliably obtain new molecules that contain  $[\text{Mo}^{\text{III}}(\text{CN})_7]^{4-}$  which will expand the study of polynuclear cyanide bridged materials with unusual seven-coordinate coordination environments.