

Supporting Information

Self-assembled molecular patterns of fatty acid in the presence of metal ions

Wen-fei Dong,^{1,2} Ruomiao Wang,³ Guangzhao Mao,^{3,*} and Helmuth Möhwald²

¹Key Laboratory of Automobile Materials (Jilin University), Ministry of Education
and Department of Materials Science and Engineering, Jilin University, Changchun,
130025, China;

²Max Planck Institute of Colloids and Interfaces, Golm/Potsdam, D-14476, Germany;

³Department of Chemical Engineering and Materials Science, Wayne State University,
5050 Anthony Wayne Drive, Detroit, Michigan 48202, USA

* Corresponding author: e-mail: gzmao@eng.wayne.edu

Figure S1. FTIR of (a) NiAA complex and (b) NiAA solution in the range of 1300–1800 cm^{-1} . The concentration of the metal ion is about 0.5 mM and that of AA is 1 mM. Complexes are prepared at low temperature.

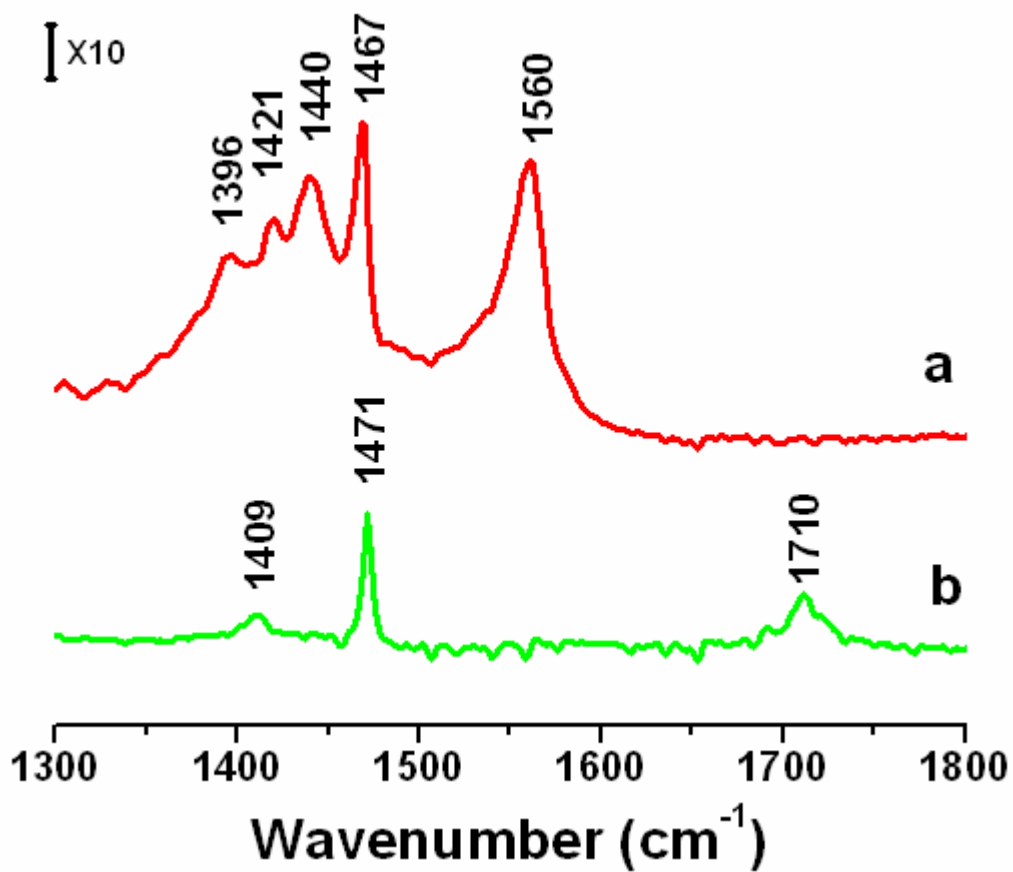


Figure S2. FTIR of solutions of FeAA, MnAA, and CoAA in the range of 1300–1800 and 2600–3200 cm^{-1} . The concentration of the metal ions is about 0.05 mM and that of AA is 0.1 mM.

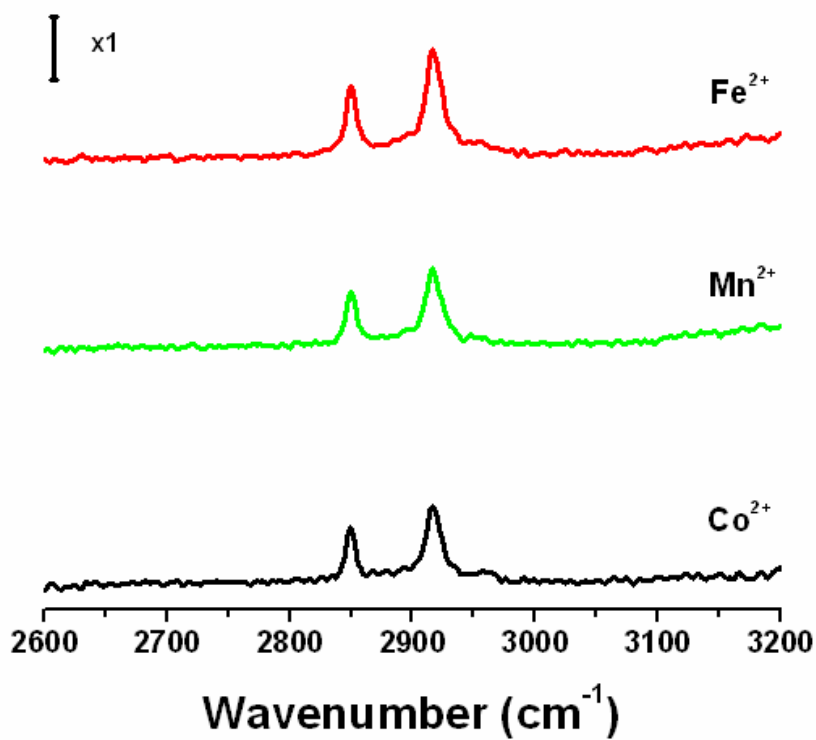
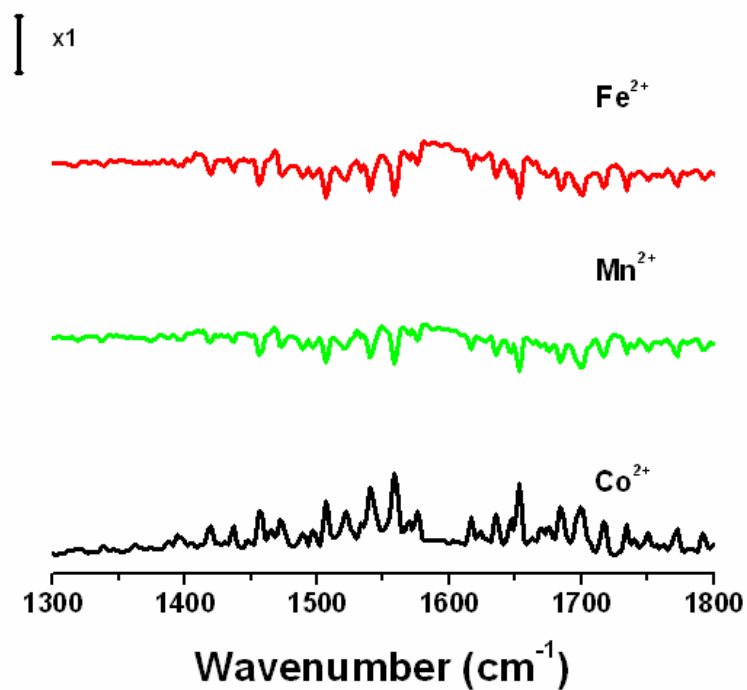


Table S1. The assignment of the peaks of the metal–ligand complexes.

AA	CuAA	CdAA	ZnAA	NiAA	Assignment
2954	2952	2954	2952		Asymmetric stretching mode of CH ₃
2914	2914	2918	2916		Asymmetric stretching mode of CH ₂
2846	2848	2848	2846		Symmetric stretching mode of CH ₂
1700					C=O stretching mode of the carboxylic groups
	1587	1537	1537	1560	Asymmetric COO stretching band
1471	1471	1471		1467	CH ₂ scissoring mode of alkyl chains
1461		1461	1461		CH ₂ scissoring mode of alkyl chains
	1444			1440	Bending mode of COH [*]
1429					Symmetric C=O stretching mode
	1421	1423		1421	Symmetric COO stretching mode
1412					Bending mode of CaH ₂
		1396	1396	1396	Bending mode of CaH ₂
	1383		1383		Bending mode of CH ₃
		1377			Bending mode of CH ₃

* Note, see J. Baran, M. K. Marchewka, H. Ratajczak, A. Y. Borovikov, V. N. Byckov, A. G. Naumovets, A. V. Podzelinsky, G. A. Puchkovskaya and V. I. Styopkin, *Thin Solid Films*, 1995, **254**, 229.

Scheme S1. Four types of metal–ligand interaction.

