Electronic supplementary material for Journal of Materials Chemistry

A facile precursor route to transition metal molybdates using a polyzwitterionic matrix bearing simultaneously charged moieties and complexing groups

François Rullens,[a] Nicolas Deligne,[a] André Laschewsky[bc]* and Michel Devillers[a]*

[a] *Unité de Chimie des Matériaux Inorganiques et Organiques, Université catholique de Louvain, Place Louis Pasteur, 1/3, B-1348 Louvain-la-Neuve, Belgium; Fax:+ 32 10 47 23 30; Tel: +32 10 47 28 27; E-mail: devillers@chim.ucl.ac.be.*
[b] *Fraunhofer-Institute for Applied Polymer Research, Geiselbergstraße, 69, D-14476 Potsdam-Golm, Germany; Fax: +49 331 568 3000; Tel: +49 331 568 1327; E-mail: andre.laschewsky@iap.fhg.de.*
[c] *Universität Potsdam, Institut für Chemie, Karl Liebknecht-Straße, 24-25, D-14476 Potsdam-Golm, Germany; Fax: +49 331 977 5054; Tel: +49 331 977 5225; E-mail: laschews@rz.uni-potsdam.de.*

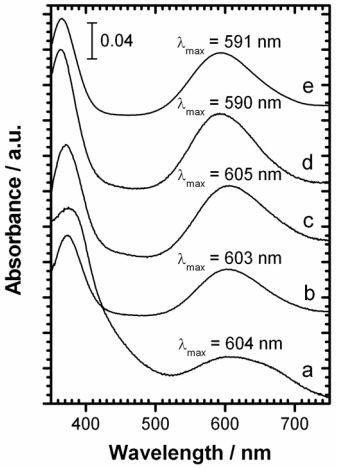

Fig. S1 Electronic spectra of Ni^{++} solutions (concentration: ~$4 \cdot 10^{-4}$ M) in presence of succinic acid (b), the copolymer (c), N-methyl piperazine (d), (4'-methyl-piperazinyl)-4-oxo-2-butenoic acid (e), compared with a reference spectrum (a) of Ni^{++} in presence of ammonia (pH of solutions: 10.4; relative amounts: 1 mol of ligand for 0.5 mol of metal cation).

Table S1 Maxima of absorbance (λ_1, λ_2 and λ_3) from UV-vis-NIR spectra of Ni^{++} in presence of the polymer, compared with maxima from reference spectra (Ni^{++} in aqueous ammonia), as a function of the pH of the solution.

Precursor[a]	**λ/nm**	**pH**[b] 8.4	9.2	9.8	10.4	11.6
$Ni(NO_3)_2.6H_2O$	λ_1	393	393	389	374	358
	λ_2	673	673	667	608	579
	λ_3	1160[d]	1160[d]	1160[d]	1160[d]	960[d]
$Ni(NO_3)_2.6H_2O$ + polymer[c]	λ_1	391	388	380	374	357
	λ_2	674	661	642	606	578
	λ_3	1160[d]	1160[d]	1155[d]	1150[d]	960[d]

[a] In water, cation concentration ~ $4 \cdot 10^{-4}$M.
[b] pH adjustement with diluted 0.1M NH_3.
[c] 0.5 mol of metal for 1 mol of repeat units of polymer.
[d] Because the absorption bands in the NIR zone are very broad and sometimes poorly resolved, the values of the maxima given are only approximative and should be used with care.