

Electronic Supporting Information

The Well-confined Polyoxometalate-Ionic Liquid in Silicic Framework for the Environment-friendly Asymmetric Dihydroxylation of Olefins

Dong Liang, Yan Wang, Sifan Wang, Chengkun Song, Yonghe Shi, Qinghao Liu,

Hailin Zhu, Xia Li, Laishuan Liu, Na Zhu

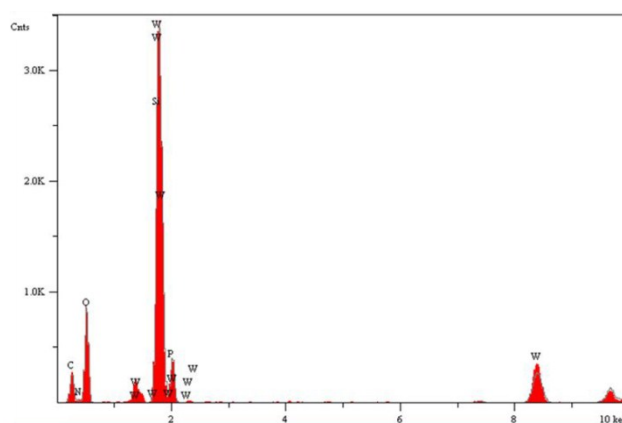


Fig.S1 EDX spectrum of POM-ILS (3/1)

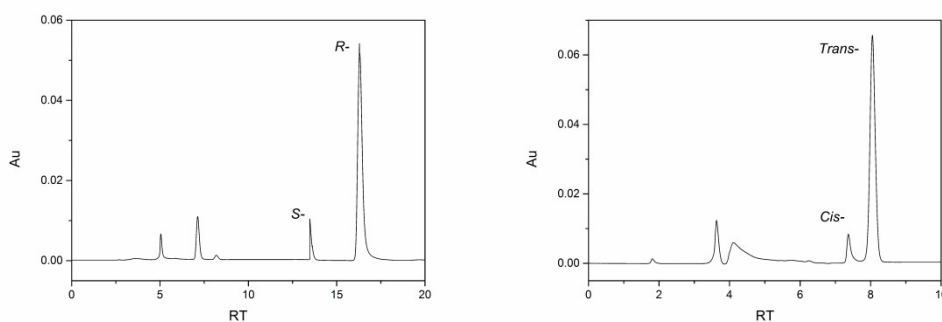


Fig. S2 HPLC analyses for enantiomeric purity of *R/S*-1-phenyl-1,2-ethanediols (a) and *Trans/Cis*-1,2-cyclohexanediols (b) on POM-ILS(1/3)

Table S1 The abundance survey of POM-IL/Silica catalysts

	Content of Tungsten	SiO ₂ -Supported ILs attached with POM	Ref.
1	0.105 mmol g ⁻¹	Peroxotungstate Immobilized on Ionic Liquid-Modified Silica	J AM CHEM. SOC. 2005, 127, 530-531
2	0.091 mmol g ⁻¹	Polyoxometalate Immobilized on Surface-Modified SiO ₂	Chem A Eur J, 2006, 12, 4176-4184
3	0.173 mmol g ⁻¹	Heteropoly acid on ionic liquid-modified SBA-15	J Catal, 2008, 259, 232-239
4	0.142 mmol g ⁻¹	Phosphotungstic Acid (PTA) Immobilized on Imidazole Functionalized Silica	J Phys Chem, C 2009, 113, 21114–21122
5	0.22 mmol g ⁻¹	Peroxotungstate immobilized on ionic liquid-modified silica	J Mol Catal A: Chem, 2008, 280, 142-147
6	0.607 mmol g ⁻¹	Peroxotungstates immobilized on multilayer ionic liquid brushes-modified silica	J Mol Catal A: Chem, 2011, 341, 57-62
7	Not supplied	Polyoxometalate-based ionic liquid supported silica	J Mol Catal A: Chem, 2015, 406, 23–30
8	0.06 mmol g ⁻¹	Polyphosphomolybdates supported on ionic liquid-modified MCM-41	J Coord Chem, 2011, 64 (23), 4134-4144
9	0.05 mmol g ⁻¹	Polyoxometalate immobilized on ionic liquid-modified silica	C. R. Chimie, 2012, 15, 975-979
10	0.20 mmol g ⁻¹	Heteropoly acid on ionic liquid-modified SBA-15	Micropor Mesopor Mater, 2012, 158, 77-87
11	0.82-0.95 mmol g ⁻¹	Polyoxometalate-IL immobilized in mesoporous silica	Micropor Mesopor Mater, 2013, 172, 67-76
12	0.2829 mmol g ⁻¹	Peroxophosphotungstate on ionic liquid brush-SiO ₂	Appl Organometal Chem, 2014, 28, 760–763
13	Not supplied	Mesoporous silica encapsulated polyoxometalate-based ionic liquids	RSC Adv., 2015, 5, 76048