Supplementary Information

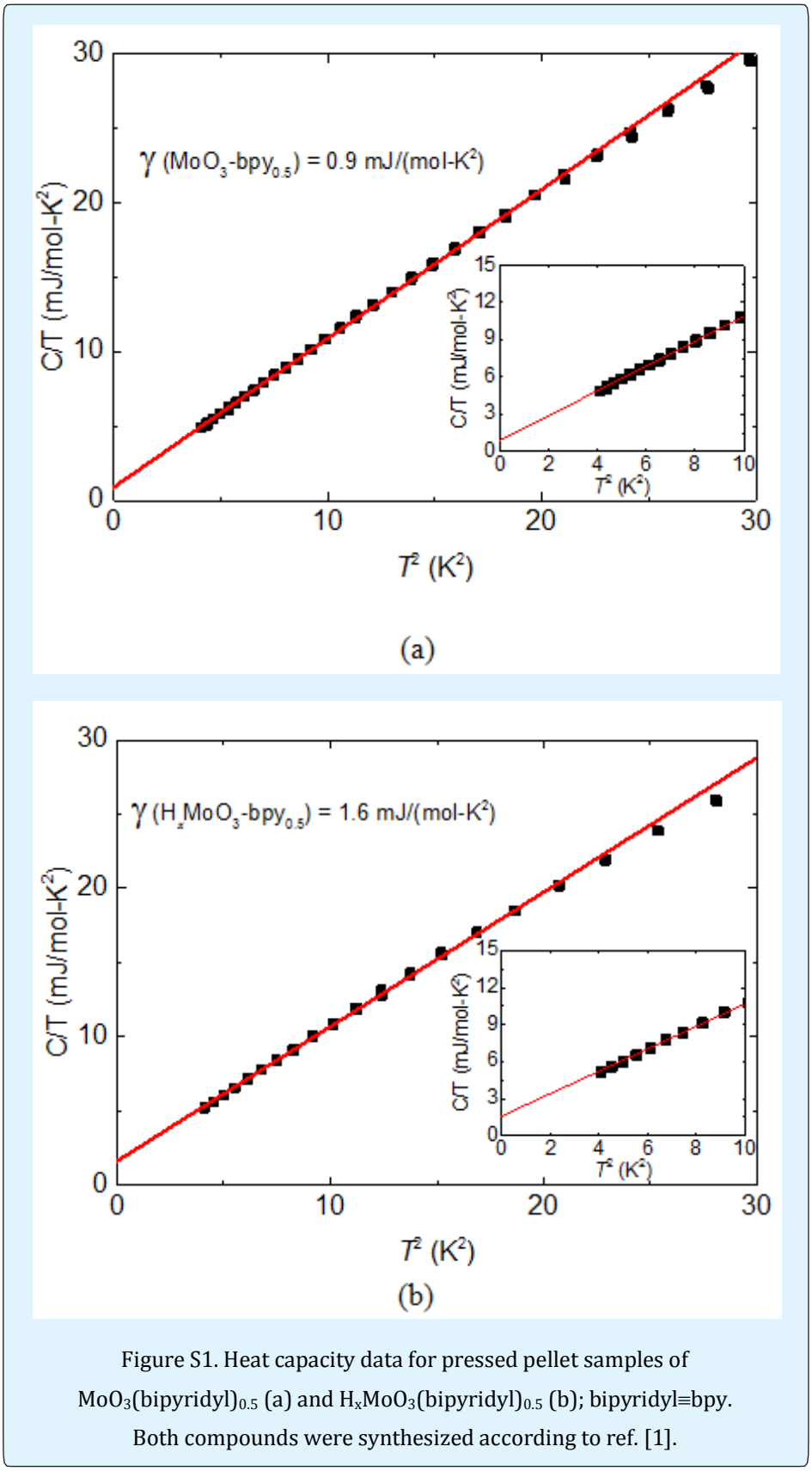

Figure S1. Heat capacity data for pressed pellet samples of MoO_3(bipyridyl)$_{0.5}$ (a) and H_xMoO_3(bipyridyl)$_{0.5}$ (b); bipyridyl≡bpy. Both compounds were synthesized according to ref. [1].

Atoms	Distances/Angles
Mo(1) - O(1)	1.699(9)
Mo(1) - O(2)	1.884(3)
Mo(1) - O(3)	1.884(2)
Mo(1) - O(4)	1.768(10)
Mo(1) - N(1)	2.419(11)
Mo(1) - O(4)n	2.138(10)
O(1) - Mo(1) - O(2)	99.7(5)
O(1) - Mo(1) - O(3)	100.9(2)
O(1) - Mo(1) - O(4)	101.8(4)
O(1) - Mo(1) - N(1)	173.78(3)
O(1) - Mo(1) - O(4)n	94.2(4)
O(2) - Mo(1) - O(3)	151.6(4)
O(2) - Mo(1) - O(4)	98.4(2)
O(2) - Mo(1) - N(1)	78.9(5)
O(2) - Mo(1) - O(4)n	78.64(17)
O(3) - Mo(1) - O(4)	96.4(5)
O(3) - Mo(1) - N(1)	78.5(2)
O(3) - Mo(1) - O(4)n	80.5(5)
O(4) - Mo(1) - N(1)	84.4(4)
O(4) - Mo(1) - O(4)n	164.0(4)
N(1) - Mo(1) - O(4)n	79.6(3)
Mo(1) - O(2) - Mo(1)b	153.1(8)
Mo(1) - O(3) - Mo(1)k	163.8(9)
Mo(1) - O(4) - Mo(1)o	179.1(3)
Mo(1) - N(1) - C(1)	123.8(8)
Mo(1) - N(1) - C(6)	119.0(8)

Table S1. Selected bond lengths (Å) and angles (degree) for MoO_3-phen.

Mathematical transformations used to generate symmetrically equivalent atoms: a= -1+x,y,z; b= -1+x,1+y,-1+z; c = 1+x,-1+y,1+z; d = 1+x,y,z, e = -x,-y,-z; f = -x,1-y,-z; g = 1-x,-y,-z

References

1. Hagrman PJ, LaDuca RL, Koo H-J, Rarig R, Haushalter RC,Whangbo M-H,Zubieta J. (2000)Ligand influences on the structures of molybdenum oxide networks.InorgChem39: 4311-4317.