Electronic Supplementary Information

Record luminescence characteristics of $[Mo_6X_8(n\text{-}C_3F_7COO)_6]^{2-}$ (X = Br, I)

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Table S1. Selected bond distances (Å) and valence angles (°) of 1a, 2, and **3**

Complex	**1**	**2**	**3**
M-M	2.59516(16)-2.60230(16)	2.6222(5)-2.6289(5)	2.6584(4)-2.6658(4)
M-μ_3-X	2.4637(3)- 2.4878(3)	2.5885(5)-2.6179(5)	2.7583(3)-2.7880(3)
M-O	2.0952(10)-2.1082(10)	2.104(3)- 2.119(3)	2.120(2)-2.141(2)
C-O(M)	1.2775(17)-1.2852(17)	1.277(5)-1.288(5)	1.261(4)-1.269(4)
C=O	1.2094(18)-1.2123(17)	1.205(5)-1.215(5)	1.220(4)-1.215(4)
M-O-C	126.28(9)-134.56(9)	128.0(3)-135.5(3)	129.6(2)-137.1(2)
O-C-O	129.36(14)-130.18(14)	129.7(4)-130.6(4)	130.2(3)-131.4(3)

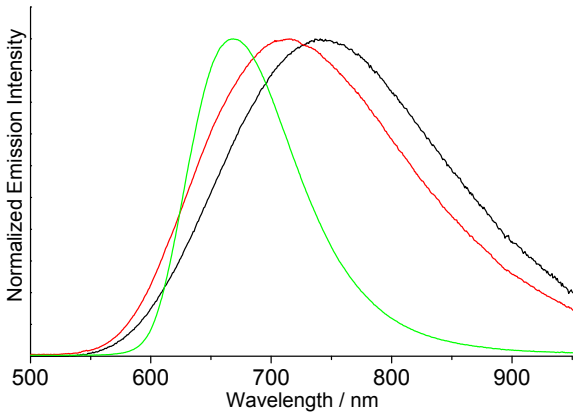

Fig S1. Emission spectra for **1** (black), **2** (red), and **3** (green) in the solid state at 298 K.

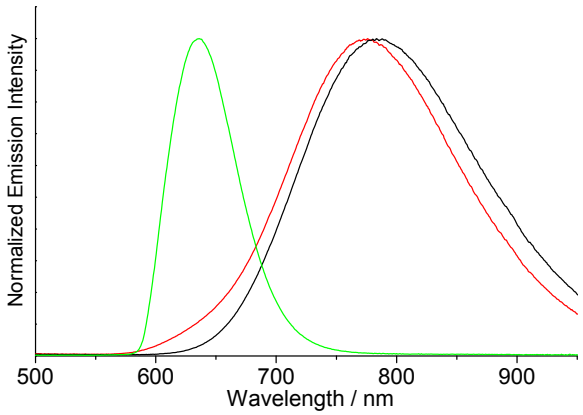

Fig. S2. Emission spectra for **1** (black), **2** (red), and **3** (green) in the solid state at 80 K.

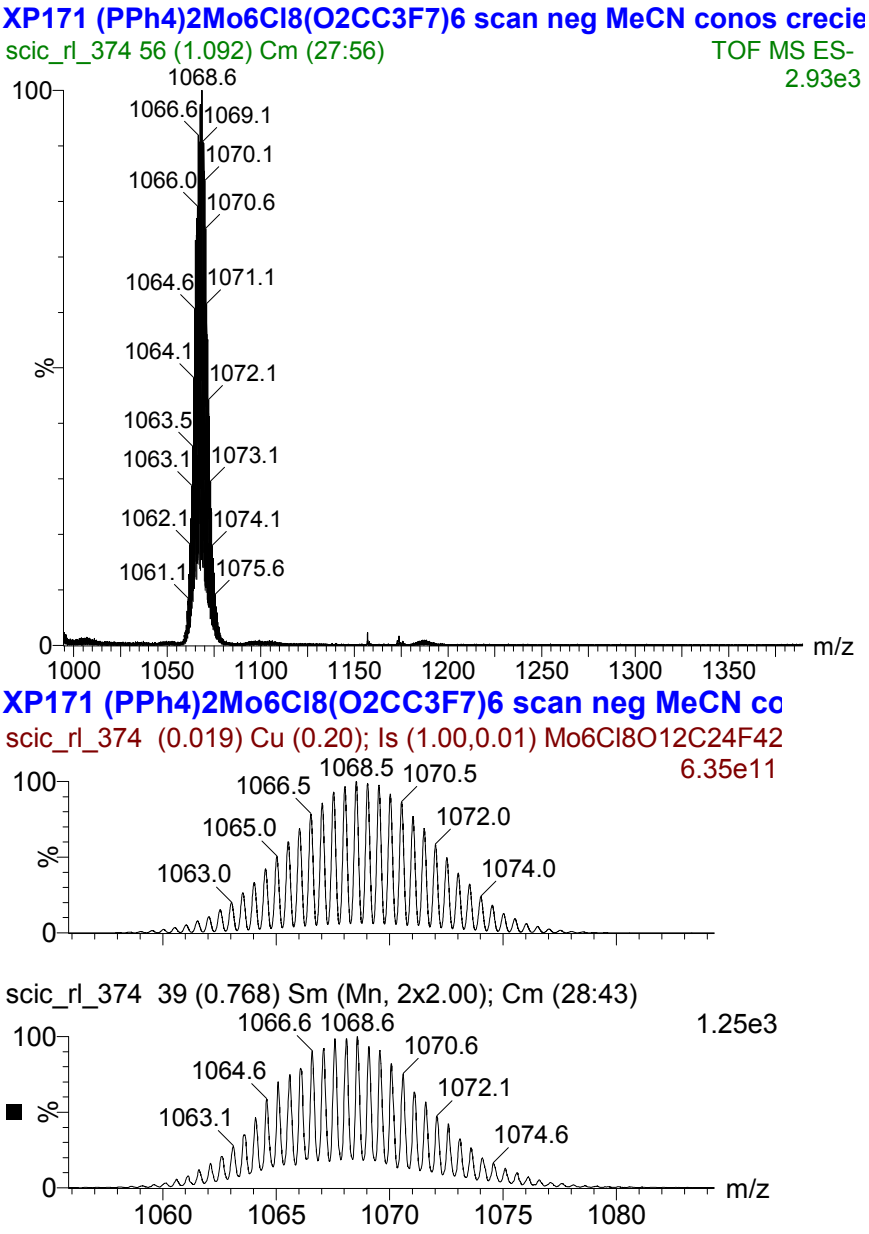

Fig. S3. ESI-MS of **1** at the negative voltage. Top: the spectrum in CH_3CN. Bottom: calculated and observed isotopic patter for the peak attributable to $[Mo_6Cl_8(C_3F_7COO)_6]^{2-}$.