

## Supplementary Information

Table S1. Crystallographic data of the Et<sub>4</sub>N<sup>+</sup> salt of clusters **2–6**.

Complex	(Et <sub>4</sub> N) <sub>2</sub> • <b>[2]</b>	(Et <sub>4</sub> N) <sub>2</sub> • <b>[3]</b>	(Et <sub>4</sub> N) <sub>2</sub> • <b>[4]</b> •DMF	(Et <sub>4</sub> N) <sub>2</sub> • <b>[5]</b> •2DMF	(Et <sub>4</sub> N) <sub>2</sub> • <b>[6]</b> •8DMF
Empirical formula	C <sub>54</sub> H <sub>104</sub> B <sub>2</sub> Fe <sub>6</sub> N <sub>16</sub> S <sub>10</sub> W <sub>2</sub>	C <sub>70</sub> H <sub>104</sub> B <sub>2</sub> Fe <sub>6</sub> N <sub>16</sub> S <sub>10</sub> W <sub>2</sub>	C <sub>77</sub> H <sub>119</sub> B <sub>2</sub> Fe <sub>6</sub> N <sub>17</sub> OS <sub>10</sub> W <sub>2</sub>	C <sub>52</sub> H <sub>98</sub> B <sub>2</sub> Fe <sub>6</sub> N <sub>30</sub> O <sub>2</sub> S <sub>6</sub> W <sub>2</sub>	C <sub>74</sub> H <sub>140</sub> B <sub>2</sub> Fe <sub>6</sub> N <sub>24</sub> O <sub>12</sub> S <sub>6</sub> W <sub>2</sub>
Formula weight	2022.55	2214.71	2343.9	2092.38	2483.94
Crystal system	Monoclinic	Monoclinic	Triclinic	Triclinic	Orthorhombic
Space group	<i>P</i> 2 <sub>1</sub> / <i>n</i>	<i>C</i> 2/ <i>c</i>	<i>P</i> -1	<i>P</i> -1	<i>I</i> bam
Z	2	4	4	1	4
a (Å)	12.814(5)	27.096(4)	14.222(3)	10.9698(17)	24.0221(8)
b (Å)	18.930(8)	19.118(3)	25.989(5)	11.9853(18)	18.0186(6)
c (Å)	15.716(6)	20.286(3)	28.267(5)	15.905(2)	23.9879(7)
α (°)	90	90	76.250(2)	72.820(2)	90
β (°)	95.057(9)	98.477(2)	89.471(2)	83.033(2)	90
γ (°)	90	90	88.082(2)	81.869(2)	90
V (Å <sup>3</sup> )	3797(3)	10393(3)	10142(3)	1970.7(5)	10383.0(6)
<i>D</i> <sub>calcd</sub> (g cm <sup>-3</sup> )	1.769	1.415	1.535	1.763	1.589
μ (mm <sup>-1</sup> )	4.449	3.258	3.344	4.194	3.203
<i>F</i> (000)	2028.0	4440.0	4728.0	1046.0	5068.0
GOF on <i>F</i> <sup>2</sup>	0.962	1.008	1.019	1.030	1.083
<i>R</i> <sub>1</sub> <sup>a</sup> , <i>wR</i> <sub>2</sub> <sup>b</sup> (°)	0.0462, 0.1213	0.0366, 0.0927	0.0440, 0.0926	0.0364, 0.0785	0.0442, 0.1235
<i>R</i> <sub>1</sub> <sup>a</sup> , <i>wR</i> <sub>2</sub> <sup>b</sup> (°)	0.0524, 0.1259	0.0575, 0.1026	0.0777, 0.1072	0.0527, 0.0855	0.0465, 0.1261
(Δρ) <sub>max</sub> / (Δρ) <sub>min</sub> <sup>c</sup>	1.57 / -0.59	0.81 / -0.42	1.53 / -1.15	1.45 / -0.78	0.98 / -1.38

<sup>a</sup> *R*<sub>1</sub> = Σ(|*F*<sub>o</sub> - |*F*<sub>c</sub>||) / Σ|*F*<sub>o</sub>|. <sup>b</sup> *wR*<sub>2</sub> = {Σ[w(*F*<sub>o</sub><sup>2</sup> - *F*<sub>c</sub><sup>2</sup>)<sup>2</sup>] / Σ[w(*F*<sub>o</sub><sup>2</sup>)<sup>2</sup>]}<sup>1/2</sup>. <sup>c</sup> |*I* ≥ 2σ(*I*)|. <sup>d</sup> [all data]. <sup>e</sup> unit (e·Å<sup>-3</sup>)