

Electronic Supplementary Information (ESI) for

**Dinuclear Copper(I) Complexes with *N*-Heterocyclic Thione and Selone  
Ligands: Synthesis, Characterization, and Electrochemical Studies**

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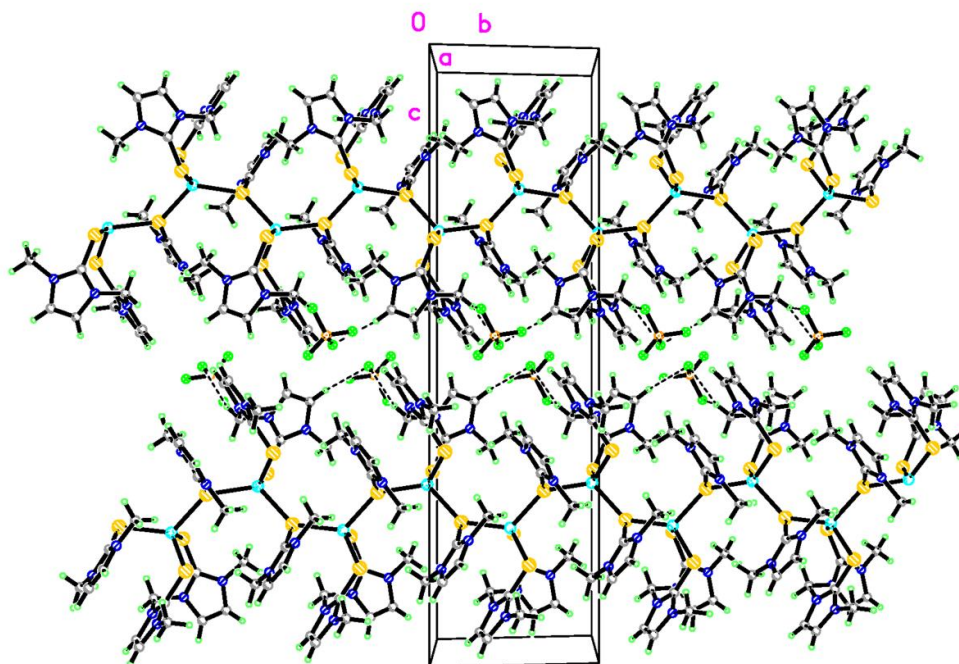
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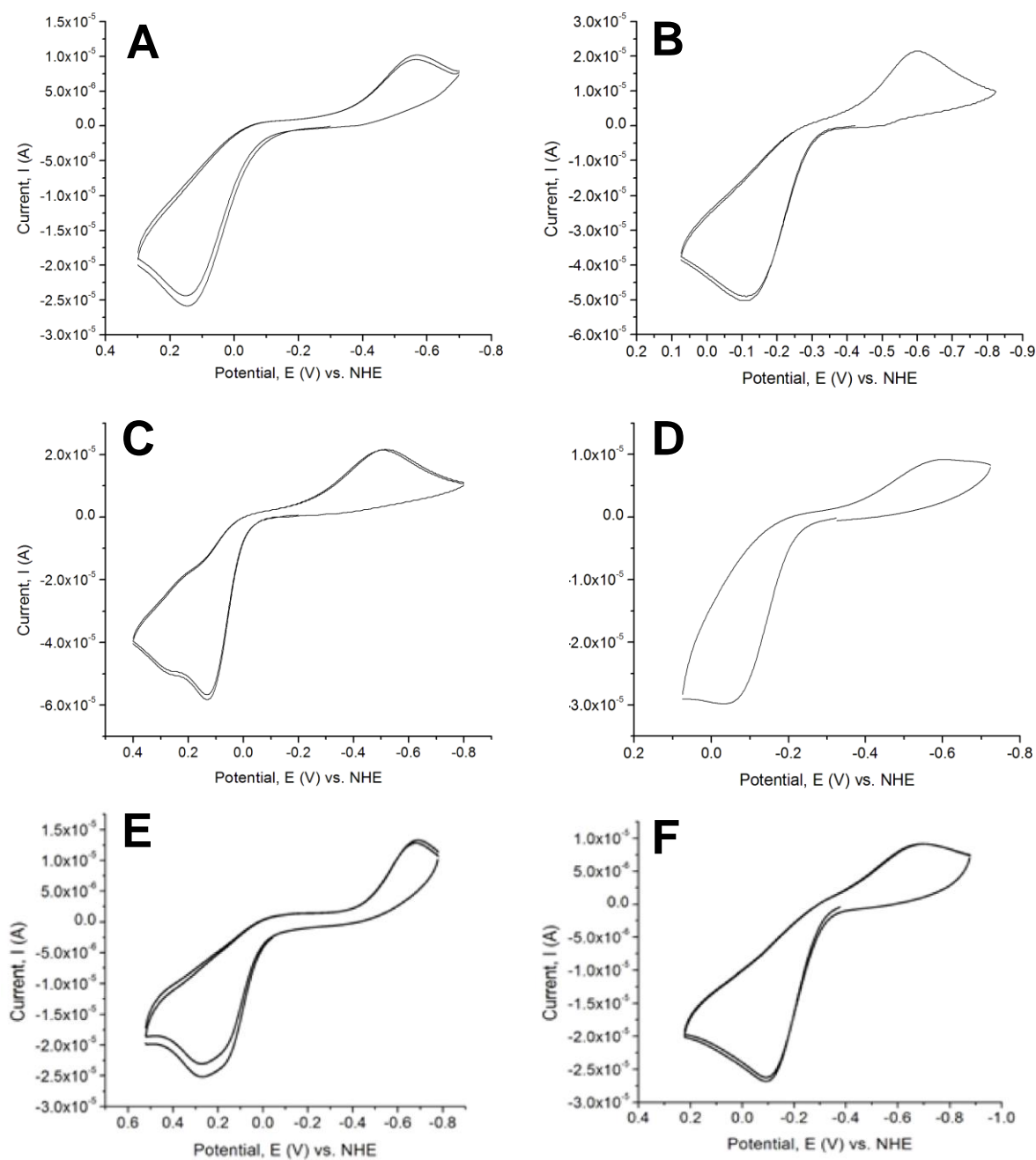
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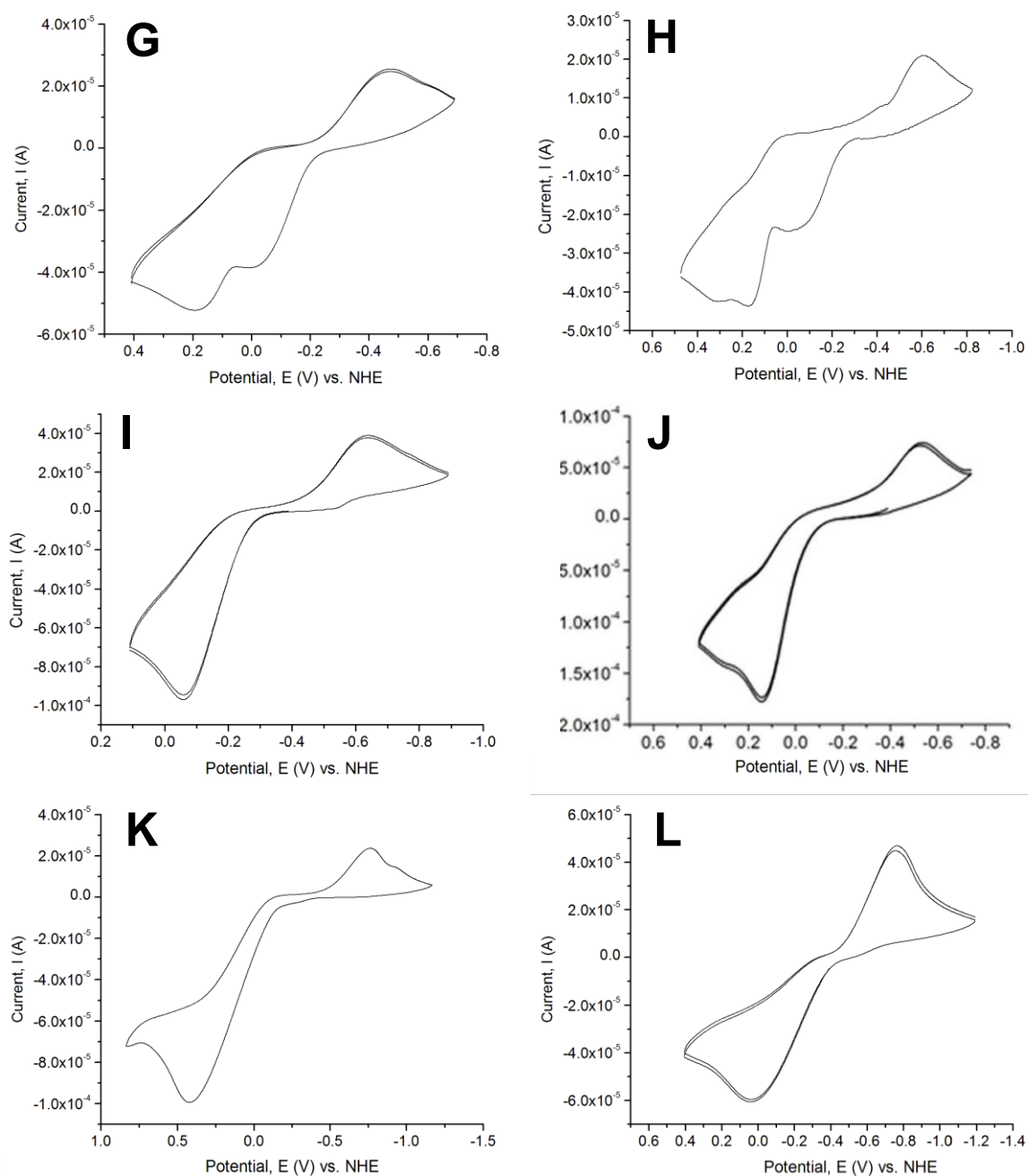
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**Fig. S1.** Crystal packing diagram showing infinite chains of  $[(Bmm^{Me})Cu(\mu-dmit)]_n(BF_4)_n$  (**10**) showing 50% probability density ellipsoids and the H-F short-contact interactions along the  $a$ -axis.



**Fig. S2.** Cyclic voltammety (CV) scans for A)  $[\text{Cu}_2(\text{dmit})_3](\text{BF}_4)_2$  (**1**), B)  $[\text{Cu}_2(\text{dmise})_3](\text{BF}_4)_2$  (**2**), C)  $[\text{Cu}_2(\text{Bmm}^{\text{Me}})_3](\text{BF}_4)_2$  (**3**), D)  $[\text{Cu}_2(\text{Bsem}^{\text{Me}})_3](\text{BF}_4)_2$  (**4**), E)  $[\text{Cu}_2(\text{Bme}^{\text{Me}})_3](\text{BF}_4)_2$  (**5**), F)  $[\text{Cu}_2(\text{Bsee}^{\text{Me}})_3](\text{BF}_4)_2$  (**6**). All data were collected with 1 mM compound in acetonitrile with *n*-butylammonium phosphate as the supporting electrolyte (0.1 M) and a scan rate of 100 mV/s.



**Fig. S2 (cont.).** Cyclic voltammetry (CV) scans for G [(dmit)Cu( $\mu$ -Bsem<sup>Me</sup>)<sub>2</sub>Cu(dmit)](BF<sub>4</sub>)<sub>2</sub> (**7**), H [(dmise)Cu( $\mu$ -Bmm<sup>Me</sup>)<sub>2</sub>Cu(dmise)](BF<sub>4</sub>)<sub>2</sub> (**8**), I [(dmise)Cu( $\mu$ -Bsem<sup>Me</sup>)<sub>2</sub>Cu(dmise)](BF<sub>4</sub>)<sub>2</sub> (**9**), J [(Bmm<sup>Me</sup>)Cu( $\mu$ -dmit)]<sub>n</sub>(BF<sub>4</sub>)<sub>n</sub> (**10**), K dmit, L dmise. All data were collected with 1 mM compound in acetonitrile with *n*-butylammonium phosphate as the supporting electrolyte (0.1 M) and a scan rate of 100 mV/s.