Supporting Information
for
Tetrathiafulvalene-based azine ligands for anion and metal cation coordination

Awatef Ayadi¹,², Aziz El Alamy³, Olivier Alévêque¹, Magali Allain¹, Nabil Zouari², Mohammed Bouachrine³ and Abdelkrim El-Ghayoury¹*

Address: ¹Laboratoire MOLTECH Anjou, Université d’Angers, UFR Sciences, UMR 6200, CNRS, Bât. K, 2 Bd. Lavoisier, 49045 Angers Cedex, France, ²Laboratoire de Physico-chimie de l’état solide, Université de Sfax, Route de Soukra; Km 4; BP: 802, 3038, Sfax, Tunisia and ³MEM, High School of Technology (ESTM), University, Moulay Ismail, Meknès, Morocco

E-mail: Abdelkrim El-Ghayoury* - abdelkrim.elghayoury@univ-angers.fr
*Corresponding author

Additional analytical data

Figure S1: Partial crystal packing of ligand L1 with columns of stacked head to tail molecules that are connected laterally through S···O heteroatom contacts.
Figure S2: Electronic delocalization scheme for ligands L1 and L2.

Figure S3: HOMO-LUMO Frontier orbitals representation for compounds 1 and 2.

Figure S4: Color change of ligand L1 upon addition of inorganic anions.
**Figure S5**: Color change of ligand L2 upon addition of inorganic anions.

![Color change of ligand L2](image)

**Figure S6**: UV-visible absorption spectra of L1 upon addition of 1 equiv of anion.

![UV-visible absorption spectra of L1](image)

**Figure S7**: UV-visible absorption spectra of L2 upon addition of 1 equiv of anion.

![UV-visible absorption spectra of L2](image)
**Figure S8:** Cyclic voltammograms of ligands L1 (left) and L2 (right) (2 × 10\(^{-5}\) M) without (black, bold lines first cycle and dashed lines for second cycle) and with (red, bold lines first cycle and dashed lines for second cycle) 2 equiv of F\(^-\). CVs recorded at 100 mV·s\(^{-1}\) on a glassy carbon electrode in CH\(_2\)Cl\(_2\)/CH\(_3\)CN (9/1, v/v) with n-Bu\(_4\)NPF\(_6\) (0.1 M).

**Figure S9:** \(^1\)H NMR spectra of ligand L1 (4 × 10\(^{-3}\) M in DMSO-\(\alpha_6\)) upon addition of successive aliquots of TBAF (DMSO-\(\alpha_6\)).
Figure S10: UV–visible absorption spectra of complex 3 (c $1.1 \times 10^{-4}$ M in dichloromethane/acetonitrile, 9/1, (v/v)), room temperature. Ligand L2 is added for comparison.

Figure S11: Cyclic voltammograms of L2 (red, added for comparison) and complex 3 (black) ($1.1 \times 10^{-4}$ M) at 100 mVs$^{-1}$ on a glassy carbon electrode in CH$_2$Cl$_2$/CH$_3$CN (9/1, v/v) with $n$-Bu$_4$NPF$_6$ (0.1 M).