

A unique covalently-linked pyridine-tetrathiafulvalene as stimuli-sensitive sensor for specific, selective optical and electrochemical detection of Pb²⁺

Wenhao Zhang,^[a] Sagrario Pascual,^[a] Stéphanie Legoupy,^[b] Abdelkrim El-Ghayoury,^{*[b]} Sandie Piogé^{*[a]}

[a] Title(s), Initial(s), Surname(s) of Author(s) including Corresponding Author(s)

Institut des Molécules et Matériaux du Mans, IMMM UMR 6283 CNRS

Le Mans Université

Avenue Olivier Messiaen, Le Mans 72085 Cedex 9, France

E-mail: sandie.pioge@univ-lemans.fr

[b] Title(s), Initial(s), Surname(s) of Author(s)

Univ Angers, CNRS, MOLTECH-Anjou, SFR Matrix

2 Bd Lavoisier

F-49000, Angers, France

E-mail: abdelkrim.elghayoury@univ-angers.fr

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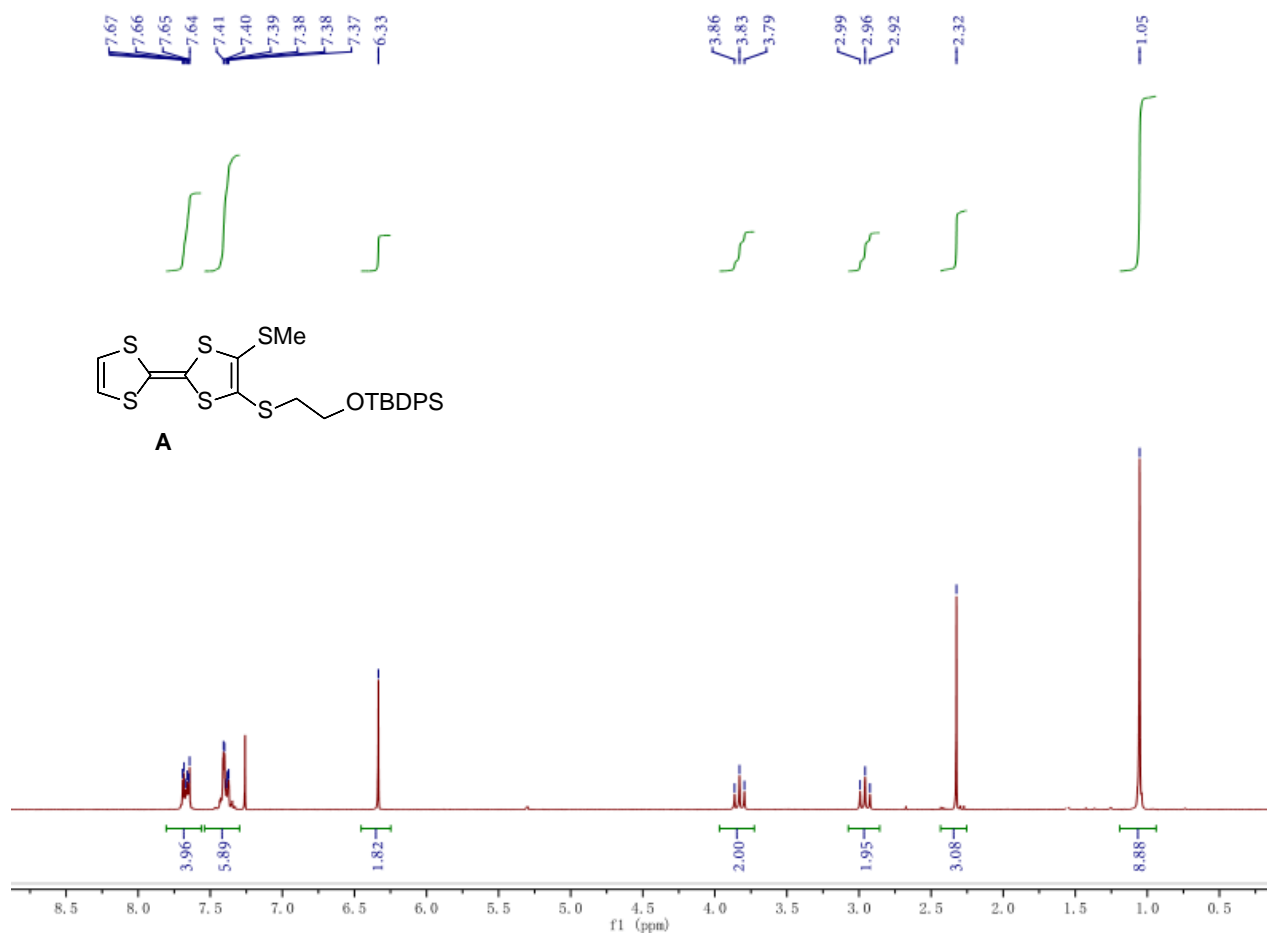


Fig. S1. ¹H NMR spectrum in CDCl₃ of A.

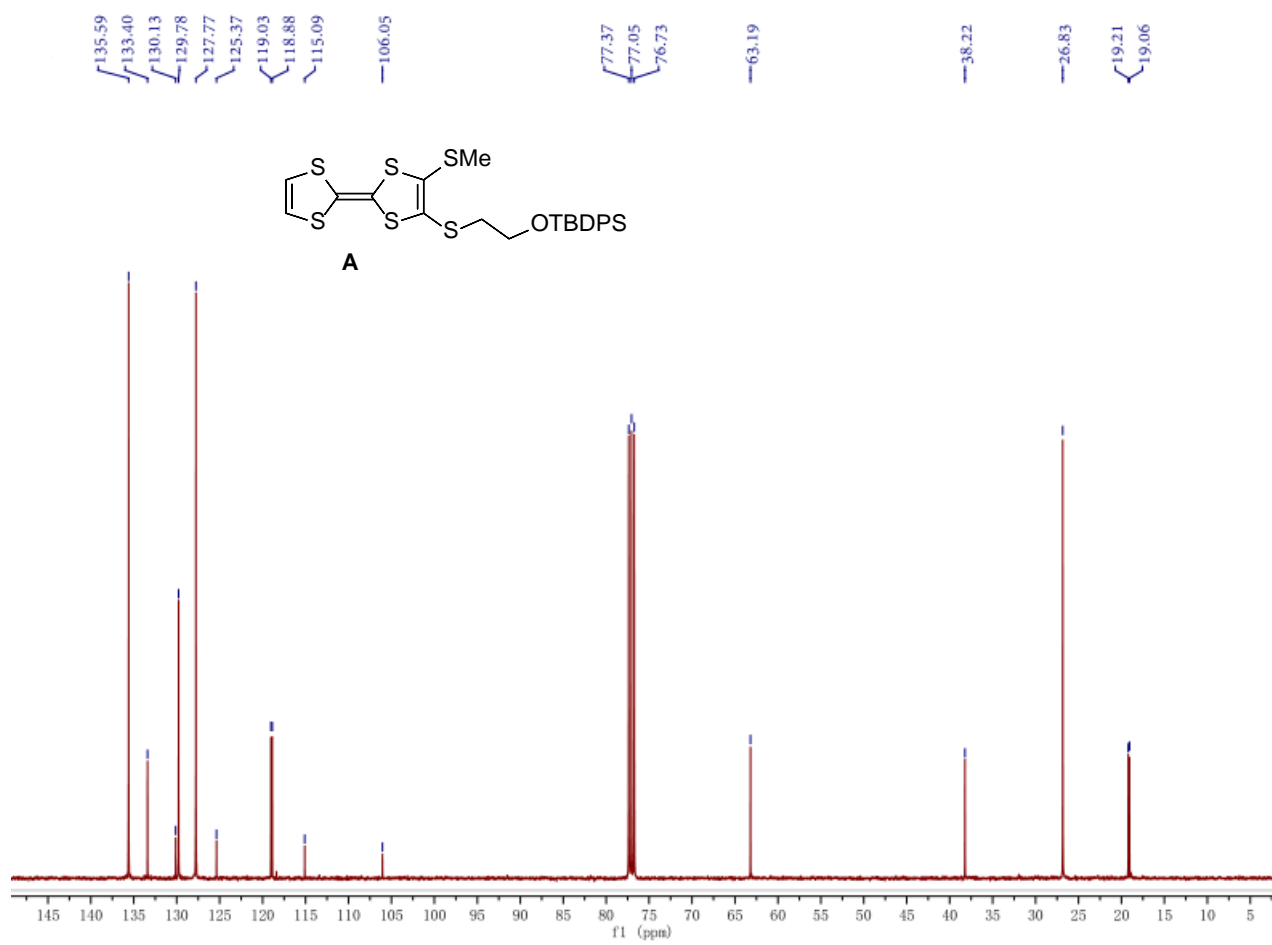


Fig. S2. ^{13}C NMR spectrum in CDCl_3 of **A**.

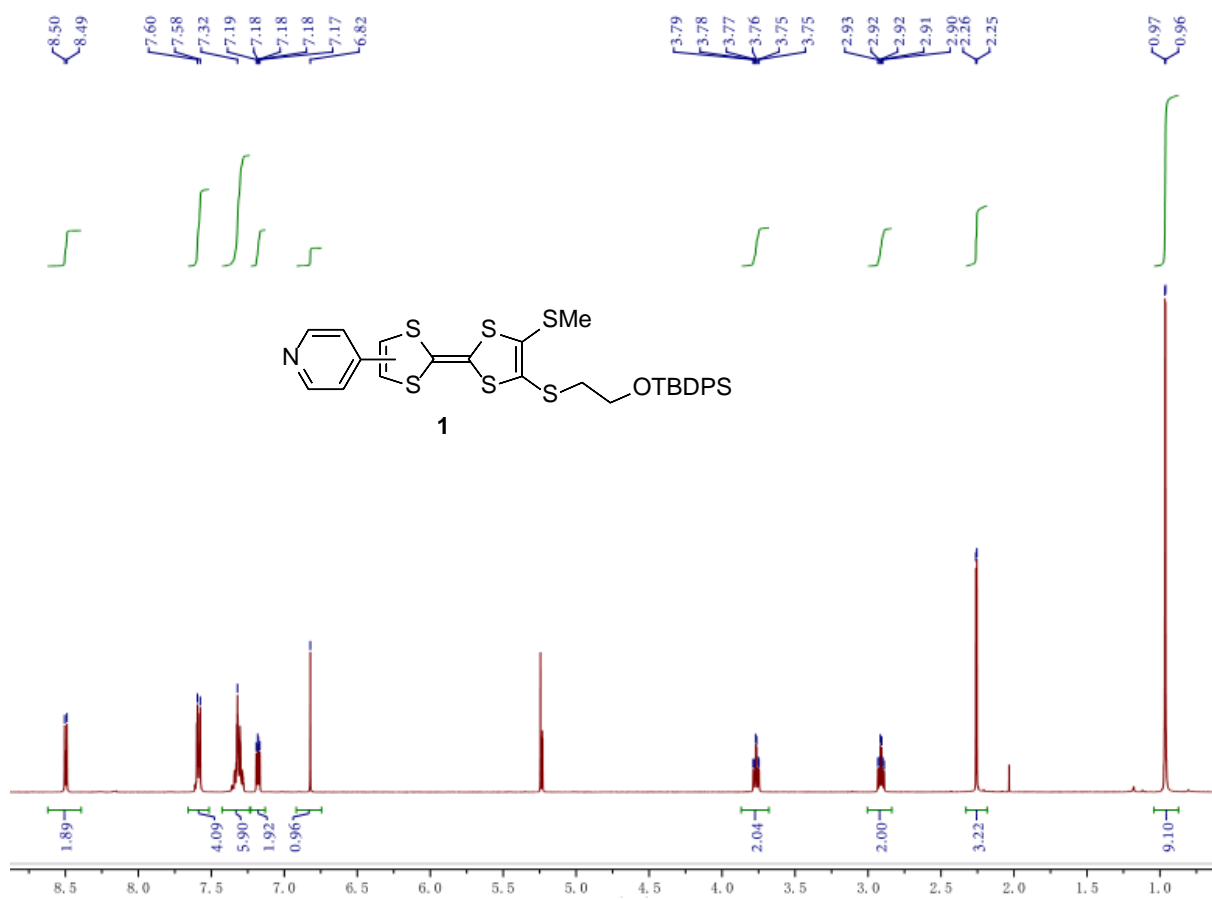


Fig. S3. ¹H NMR spectrum in CDCl₃ of dyad **1**.

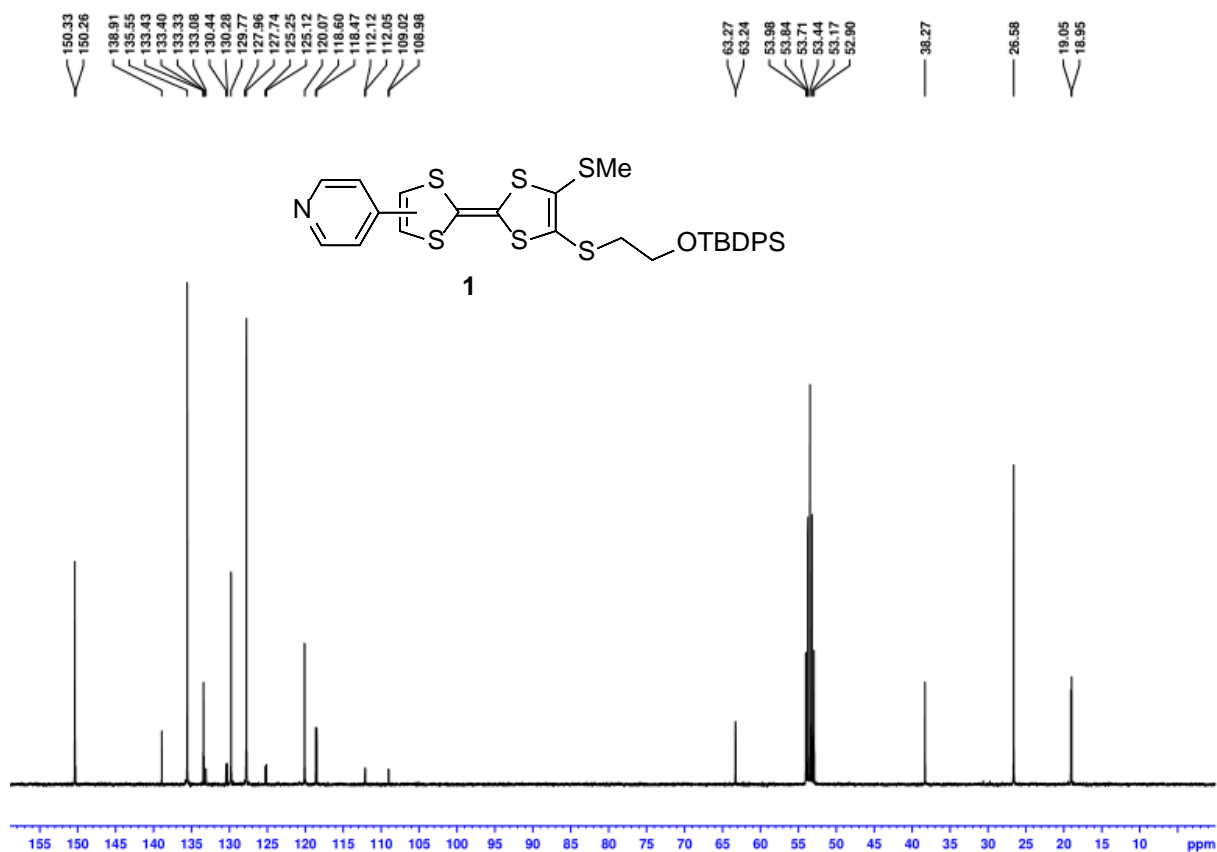


Fig. S4. ¹³C NMR spectrum in CDCl₃ of dyad 1.

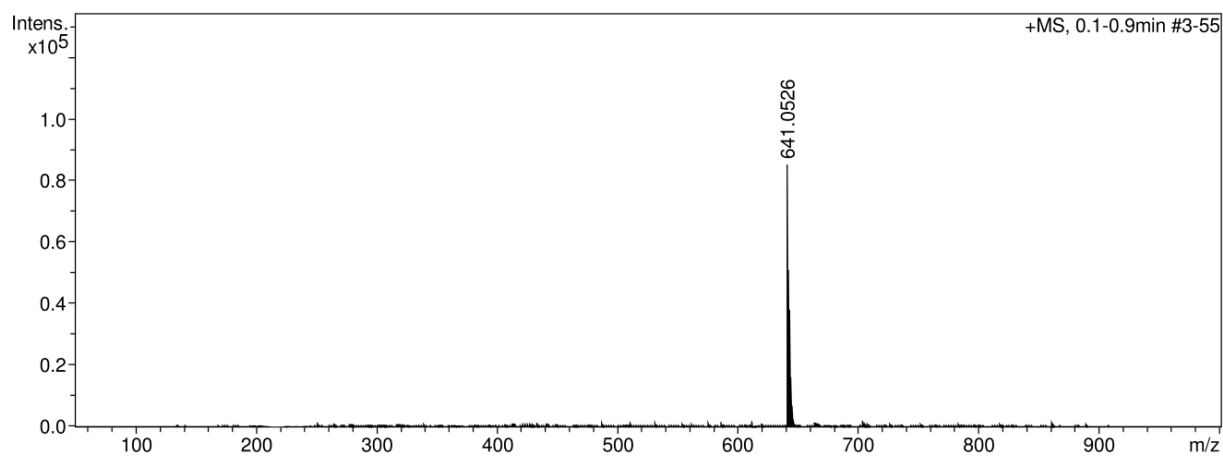


Fig. S5. Mass spectrum of dyad 1.

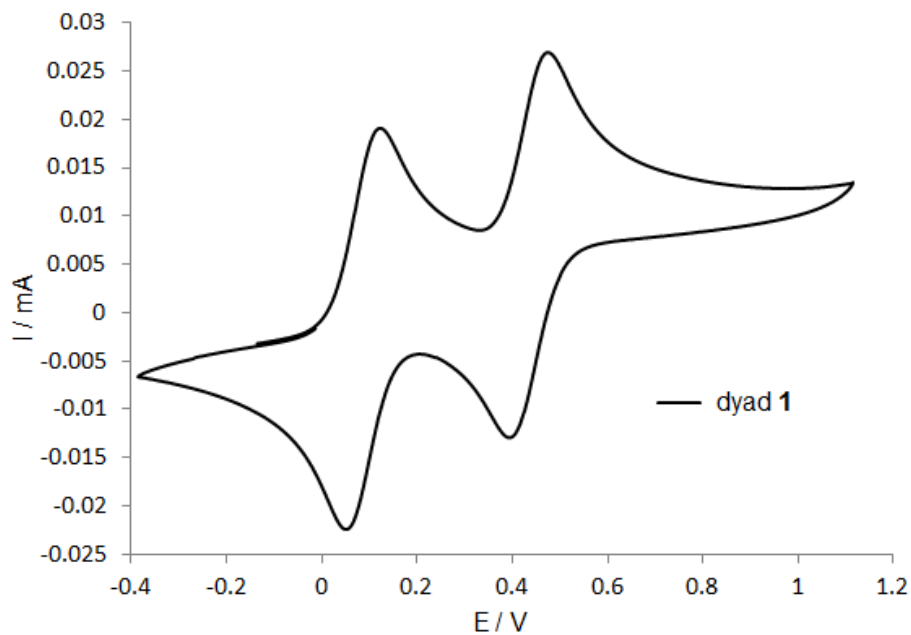


Fig. S6. CV experiment of dyad **1** (10^{-3} M) in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1, v/v); scan rate = 100 mV/s, $n\text{Bu}_4\text{PF}_6$ (10^{-1} M), Ag/AgCl, vs Fc/Fc $^+$).

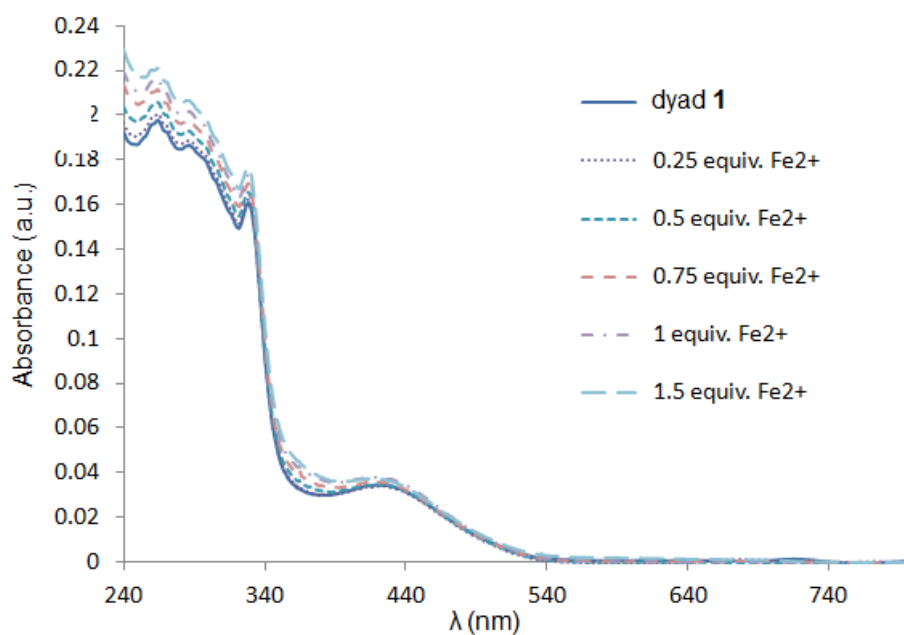


Fig. S7. UV-visible titration of dyad **1** ($C = 1.10^{-5}$ M) in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1) by Fe^{2+} solution ($\text{Fe}(\text{ClO}_4)_2$, 4.10^{-3} M in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1)).

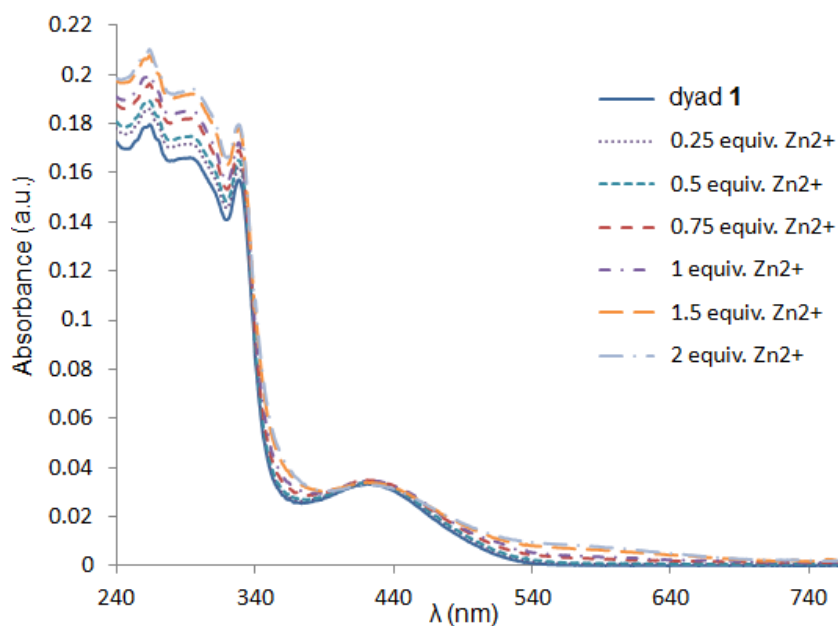


Fig. S8. UV-visible titration of dyad **1** ($C = 1.10^{-5}$ M) in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1) by Zn^{2+} solution ($\text{Zn}(\text{ClO}_4)_2$, 4.10^{-3} M in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1)).

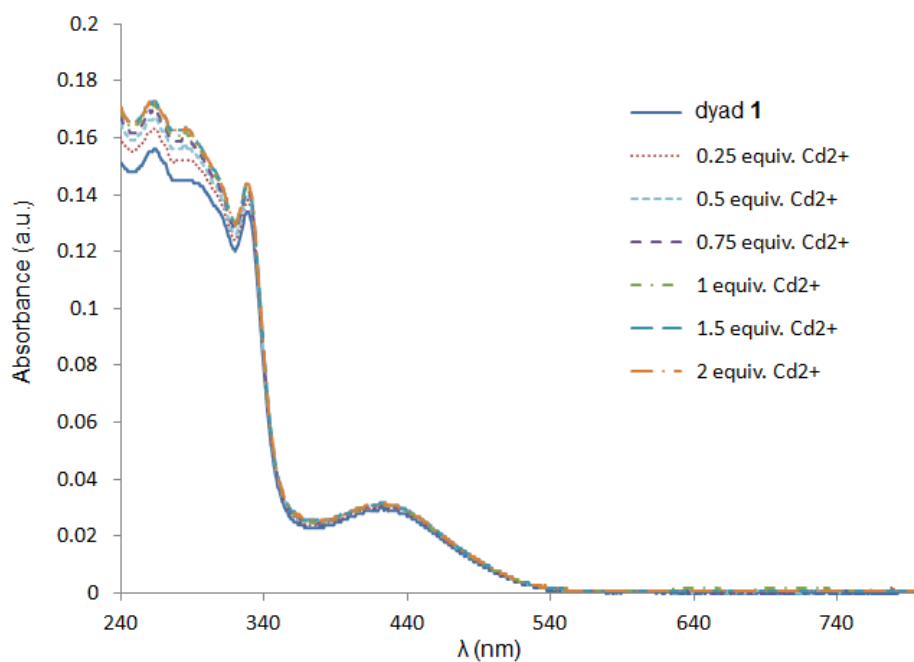


Fig. S9. UV-visible titration of dyad **1** ($C = 1.10^{-5}$ M) in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1) by Cd^{2+} solution ($\text{Cd}(\text{ClO}_4)_2$, 4.10^{-3} M in $\text{CH}_2\text{Cl}_2/\text{CH}_3\text{CN}$ (1/1)).

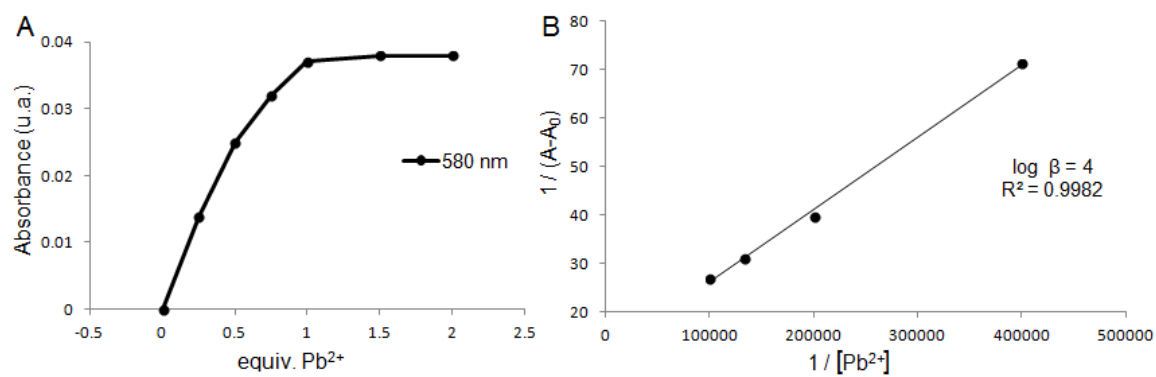


Fig. S10. Further study of UV-visible titration of dyad **1** (10^{-5} M) in CH_2Cl_2/CH_3CN (1/1, v/v) in presence of $Pb(ClO_4)_2$.

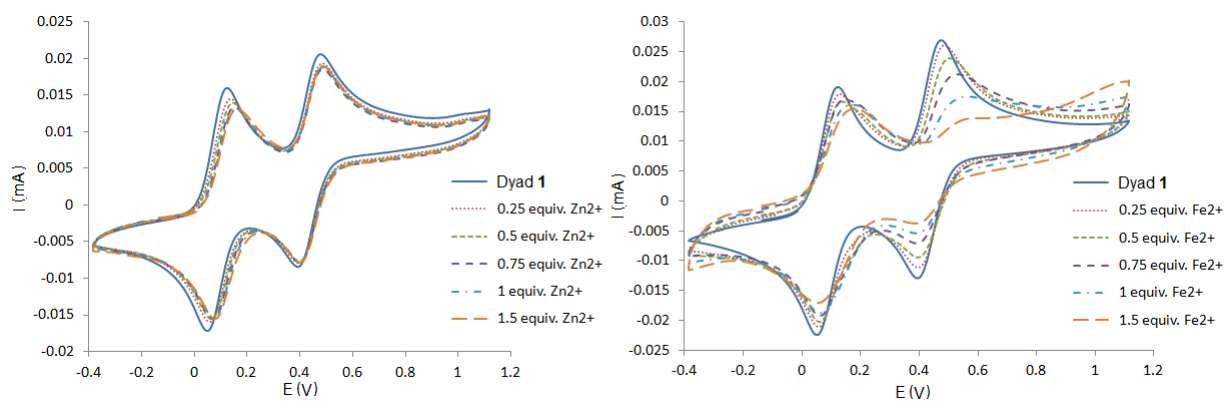


Fig. S11. CV spectra of dyad **1** ($C_0 = 10^{-3}$ mol.L $^{-1}$ in CH_2Cl_2/CH_3CN (1/1 v/v)) in presence of $Zn(ClO_4)_2$ (left spectrum) or $Fe(ClO_4)_2$ (right spectrum), scan rate = 100 mV.s $^{-1}$, Bu_4NPF_6 (10^{-1} mol.L $^{-1}$), Ag/AgCl, vs Fc/Fc $^{+}$.