ELECTRONIC SUPPLEMENTARY INFORMATION

N-Amidothiourea Based PET Chemosensors for Anions

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Figure S1. Portion of 2D COSY spectrum of N-acetamidothiourea and summary of COSY observed in CD$_3$CN. This spectrum was taken as a reference for assigning –NH NMR signals of I-3.
**Figure S2.** Job plot for binding of 2 with AcO\(^-\) in MeCN. The fluorescence intensity is the difference of fluorescence intensity of AcO\(^-\)/2 mixture and that of 2. Total concentration of AcO\(^-\) and 2 is 8.55 \(\times\) 10\(^{-6}\) mol L\(^{-1}\).

**Figure S3.** Stern-Volmer plots for quenching of sensors 1-3 fluorescence by AcO\(^-\), F\(^-\) and H\(_2\)PO\(_4\)\(^-\), respectively, in MeCN.
$N$-(1-Pyrenebutanamide)-$N'-(p$-tolyl)thiourea (1): $^1$H NMR (400 MHz, DMSO-$d_6$).

$N$-(1-Pyrenebutanamide)-$N'-(p$-tolyl)thiourea (1): $^{13}$C NMR (100 MHz, DMSO-$d_6$).
$N$-(1-Pyrenebutanamide)-$N'$-phenylthiourea (2): $^1$H NMR (400 MHz, DMSO-$d_6$).

$N$-(1-Pyrenebutanamide)-$N'$-phenylthiourea (2): $^{13}$C NMR (100 MHz, DMSO-$d_6$).
\[ \text{N-(1-Pyrenebutanamide)-N’-(m-trifluoromethylphenyl)thiourea (3):} \ \text{^1H NMR (400 MHz, DMSO-}d_6) \].

\[ \text{N-(1-Pyrenebutanamide)-N’-(m-trifluoromethylphenyl)thiourea (3):} \ \text{^13C NMR (100 MHz, DMSO-}d_6) \].

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