

**Supporting Information for**  
**Synthesis, physical properties and self-assembly behavior**  
**of azole-fused pyrene derivatives**

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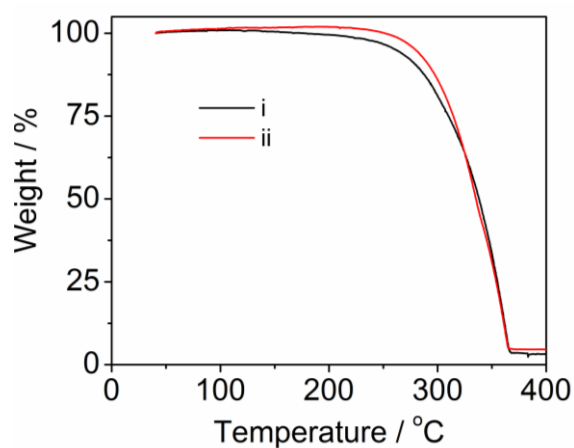
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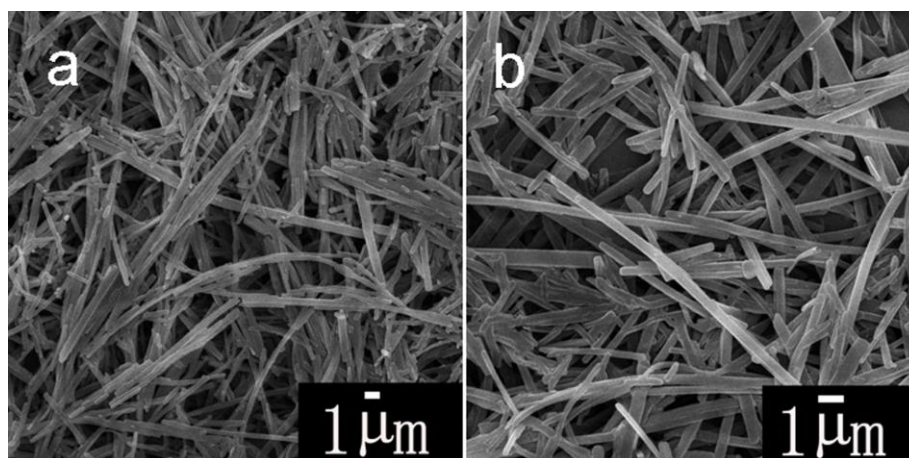
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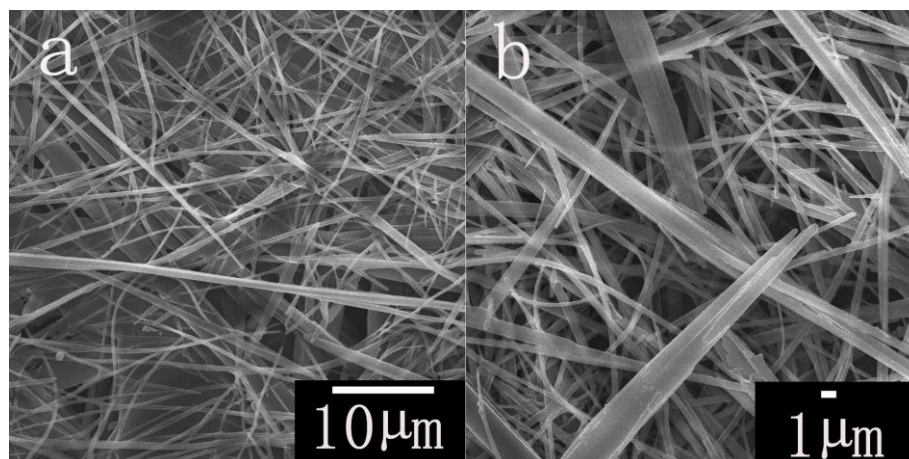
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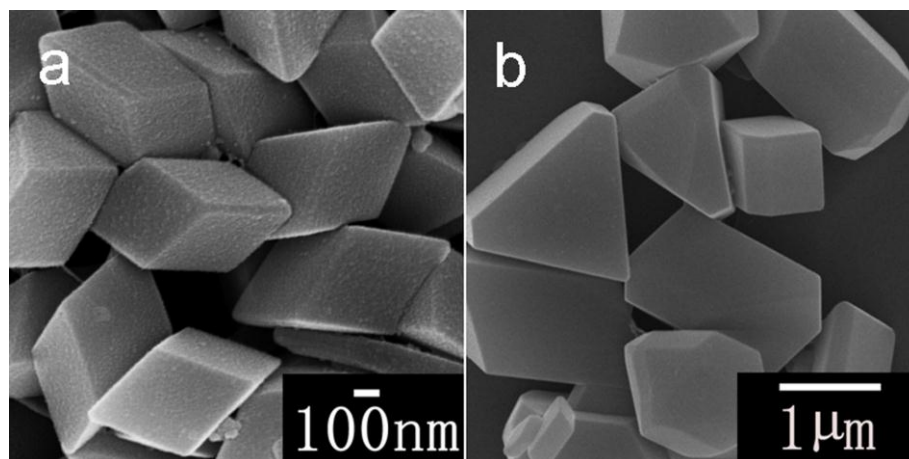
**Figure S1** Thermal gravimetric analysis of **PyS** (i, black line) and **PySe** (ii, red line) with a heating rate of 10 degree/min under nitrogen.



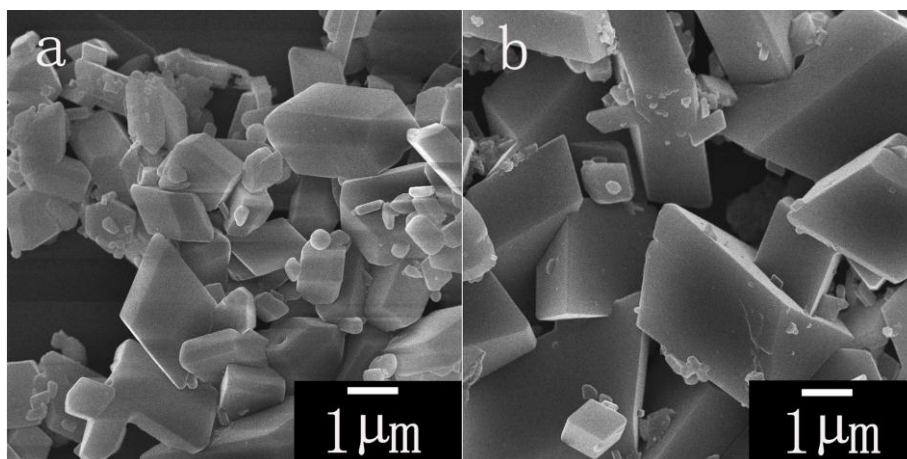
**Figure S2** (a) FESEM image of self-assembled **PyS** nanowires ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:11$ ,  $[c]_{\text{CTAB}} = 0.5$  mg/mL), (b) FESEM image of self-assembled **PyS** nanowires ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:5$ ,  $[c]_{\text{CTAB}} = 0.5$  mg/mL)  $\mu\text{m}$



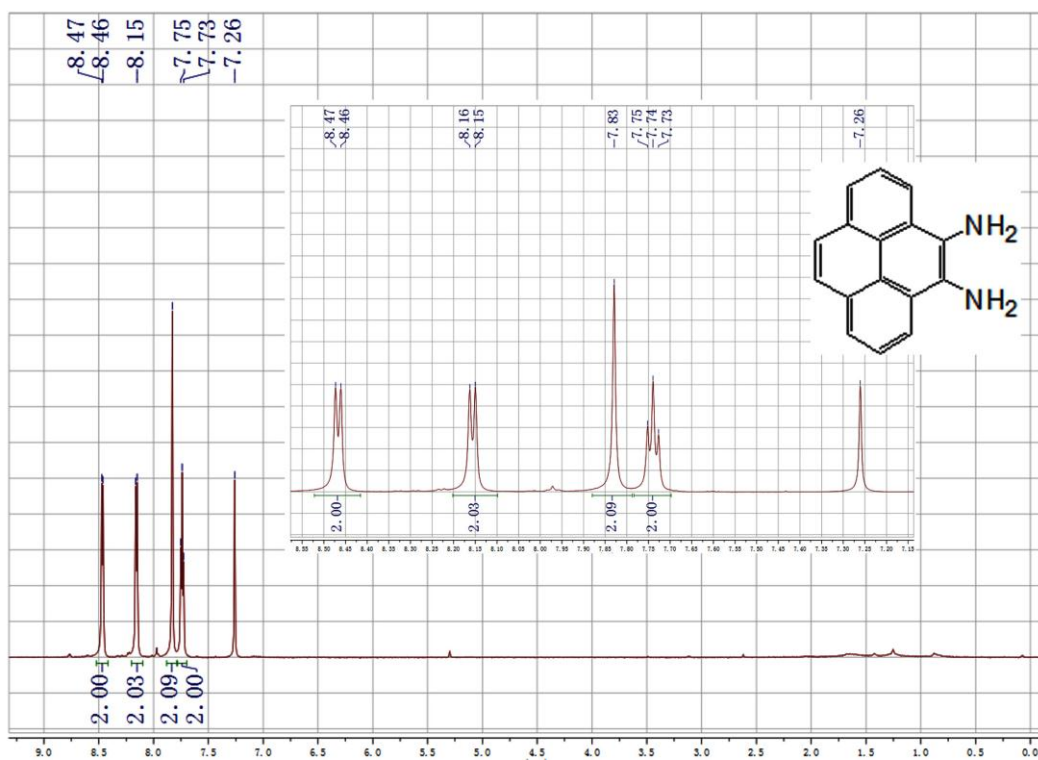
**Figure S3** FESEM image of self-assembled **PyS** wires (a) ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:11$ ,  $[c]_{\text{CTAB}} = 0.1$  mg/mL), (b) ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:11$ ,  $[c]_{\text{CTAB}} = 0.05$  mg/mL).



**Figure S4** (a) FESEM image of self-assembled **PySe** quadrangulars ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:7$ )  
(b) FESEM image of self-assembled **PySe** microstructures ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:5$ )



**Figure S5** FESEM image of self-assembled PySe structures (a) ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:11$ ,  $[c]_{\text{CTAB}} = 0.1$  mg/mL), (b) ( $V_{\text{THF}}:V_{\text{CTAB}} = 1:11$ ,  $[c]_{\text{CTAB}} = 0.05$  mg/mL).



**Figure S6**  $^1\text{H}$  NMR spectrum of compound 3

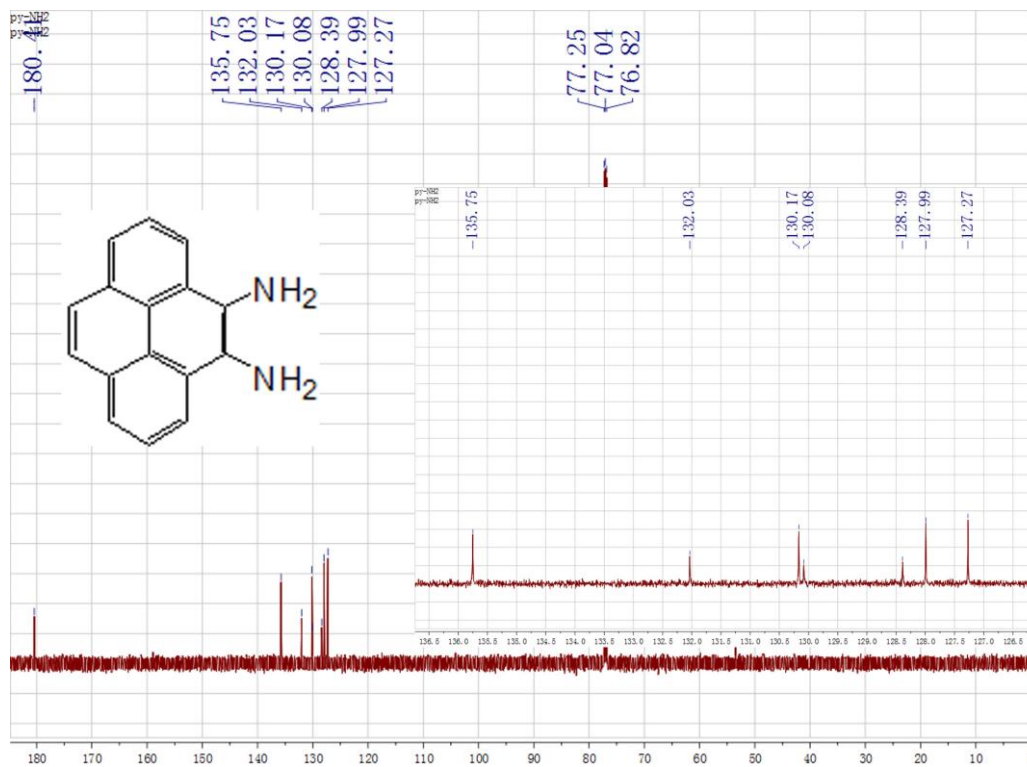


Figure S7 <sup>13</sup>C NMR spectrum of compound 3

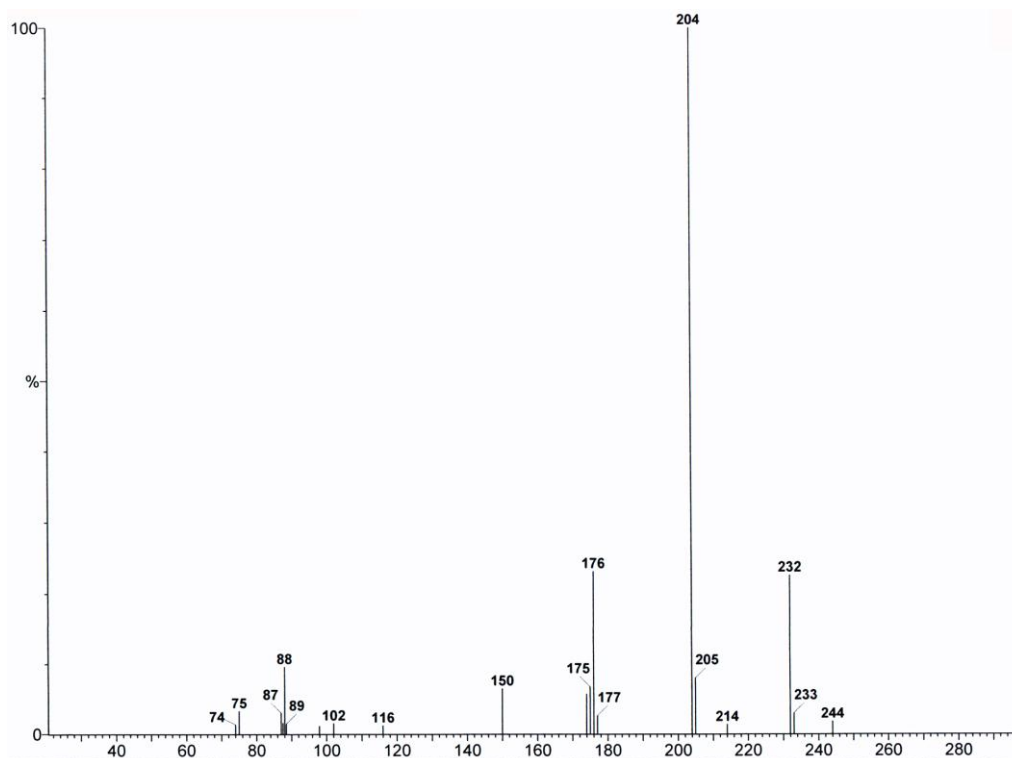


Figure S8 EI spectrum of compound 3

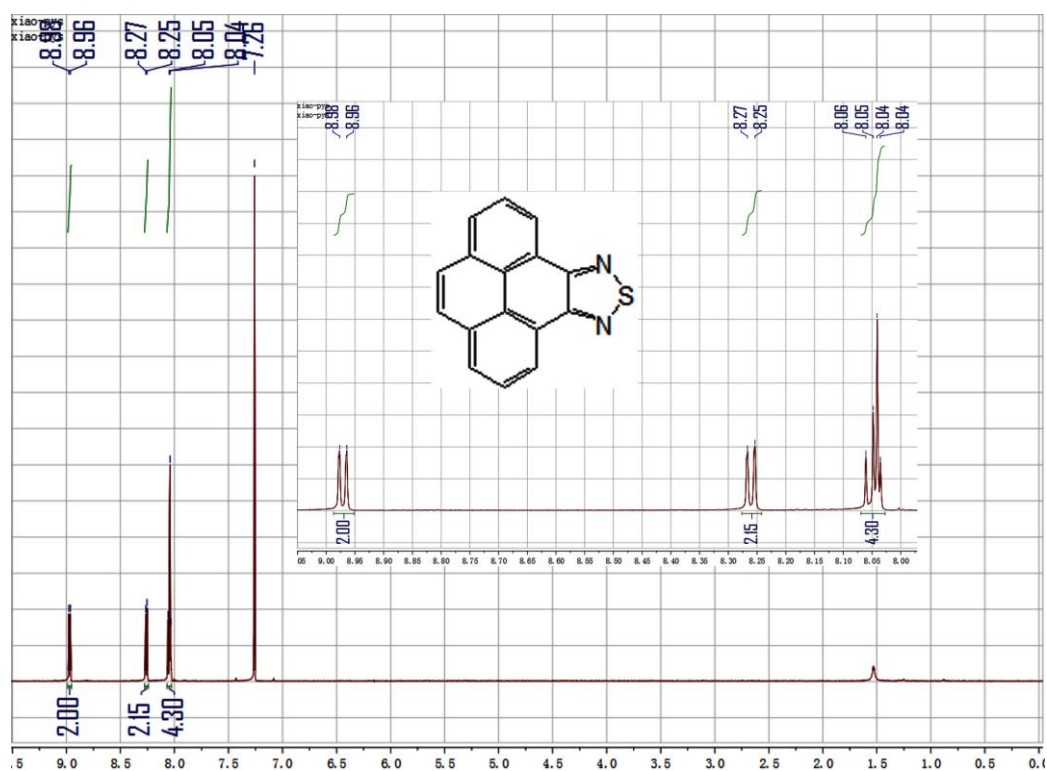


Figure S9 <sup>1</sup>H NMR spectrum of compound PyS

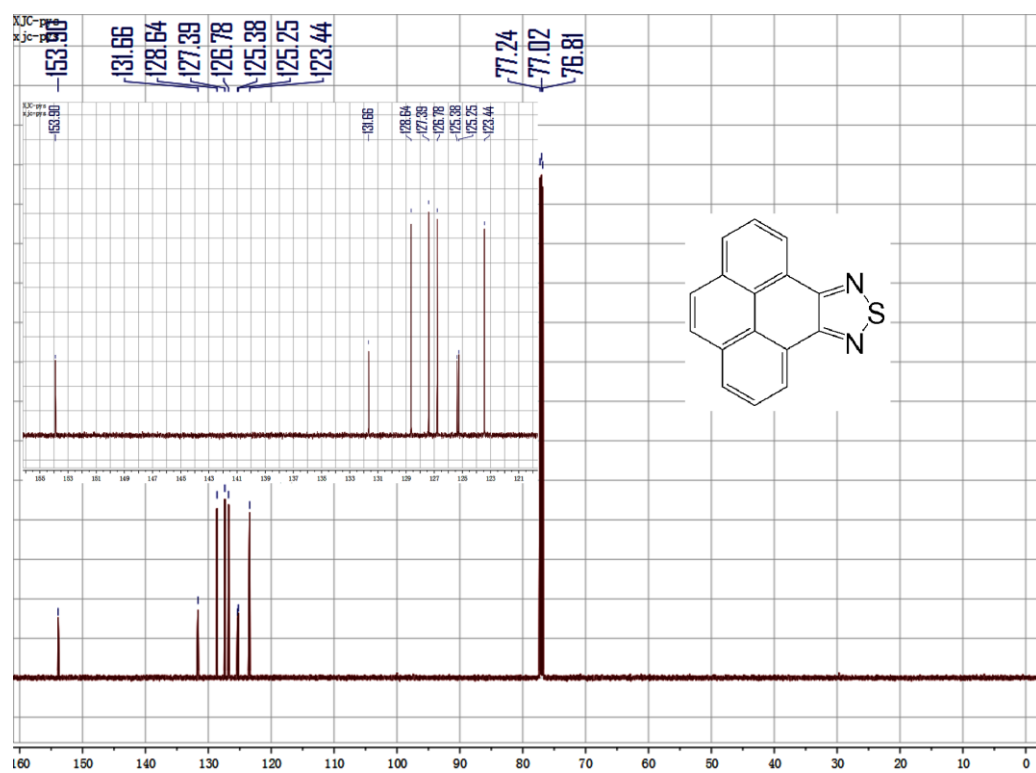


Figure S10 <sup>13</sup>C NMR spectrum of compound PyS



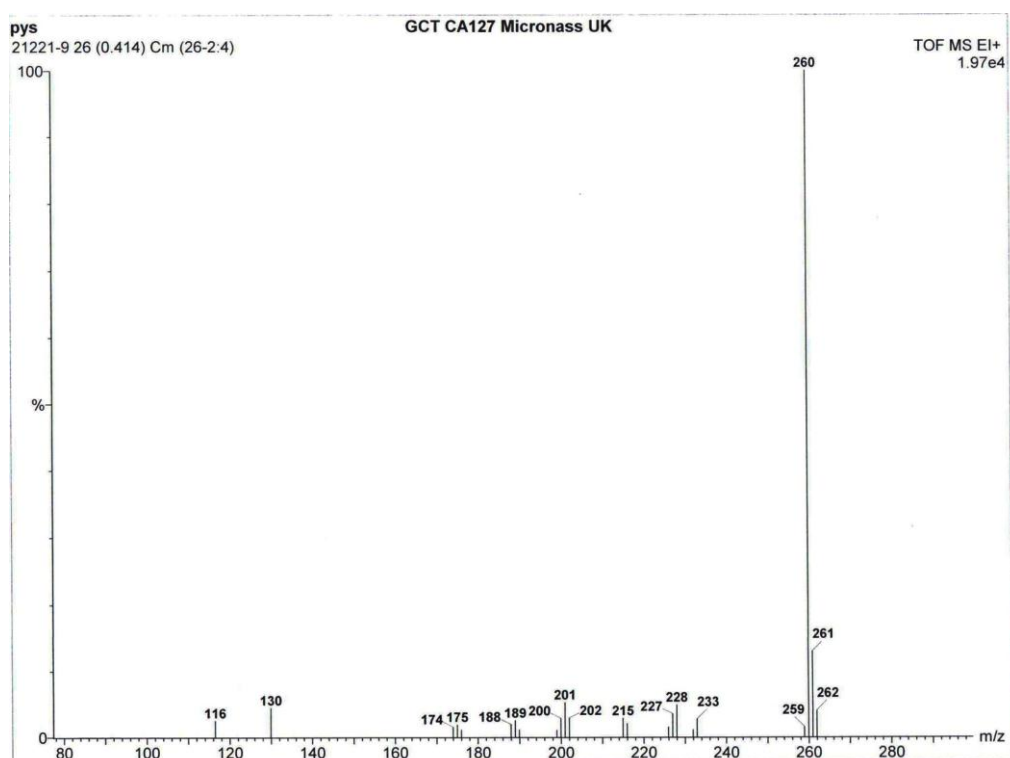


Figure S11 EI spectrum of compound PyS

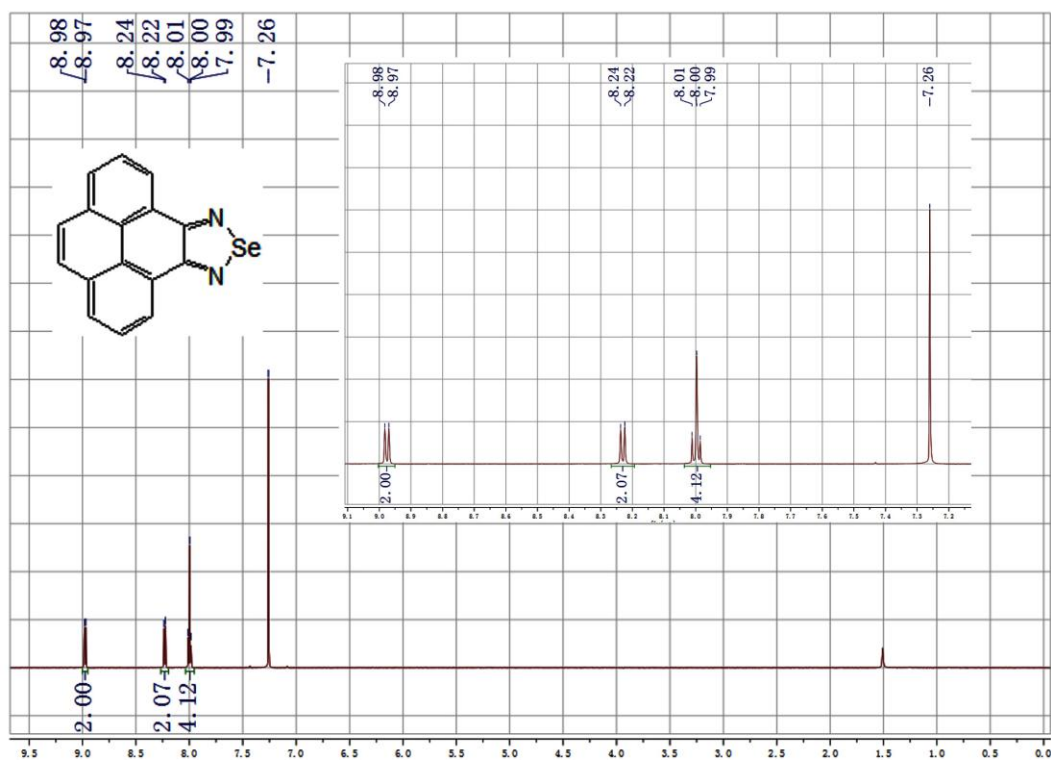


Figure S12 <sup>1</sup>H NMR spectrum of compound PySe

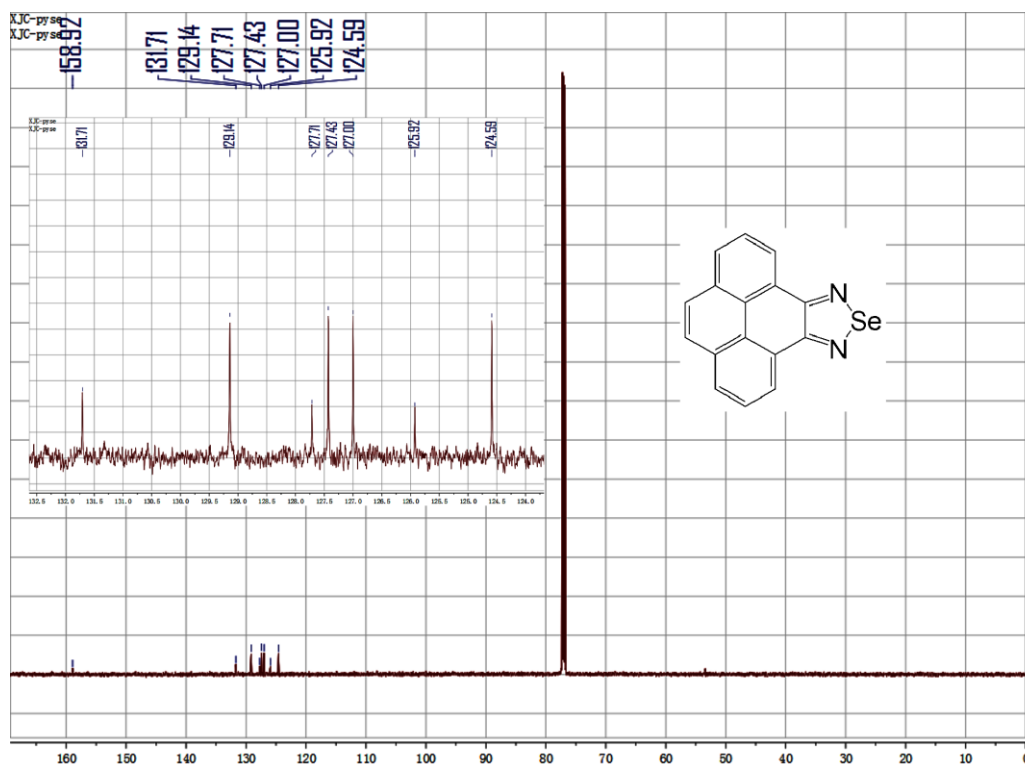


Figure S13  $^{13}\text{C}$  NMR spectrum of compound PySe

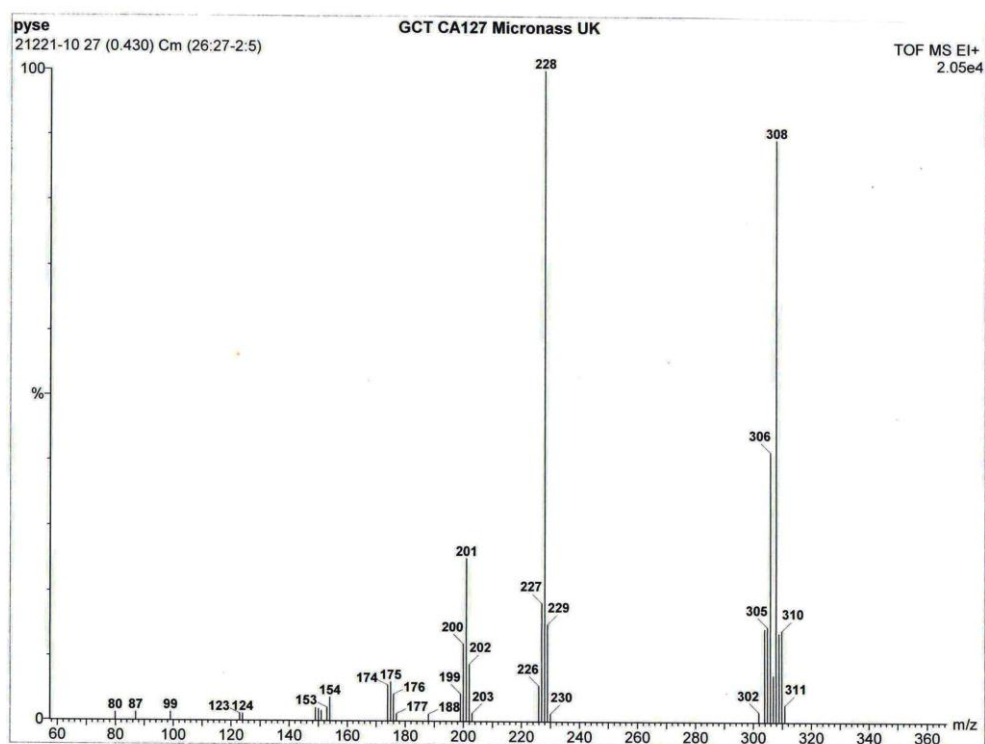


Figure S14 EI spectrum of compound PySe