

Electronic Supplementary Information

**A 9,9'-bifluorenylidene derivative containing four 1,1-dicyanomethylene-3-indanone end-capped groups as an electron acceptor for organic photovoltaic cells**

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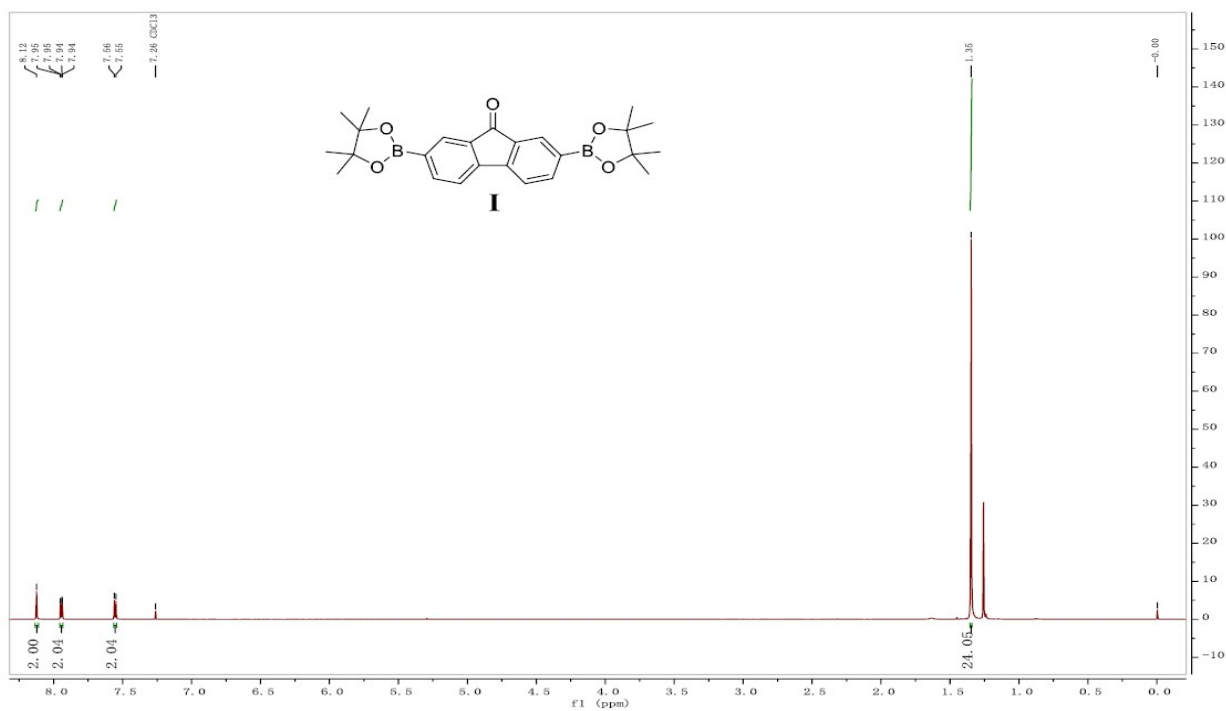


Fig. S1. <sup>1</sup>H NMR spectrum of the compound **I**

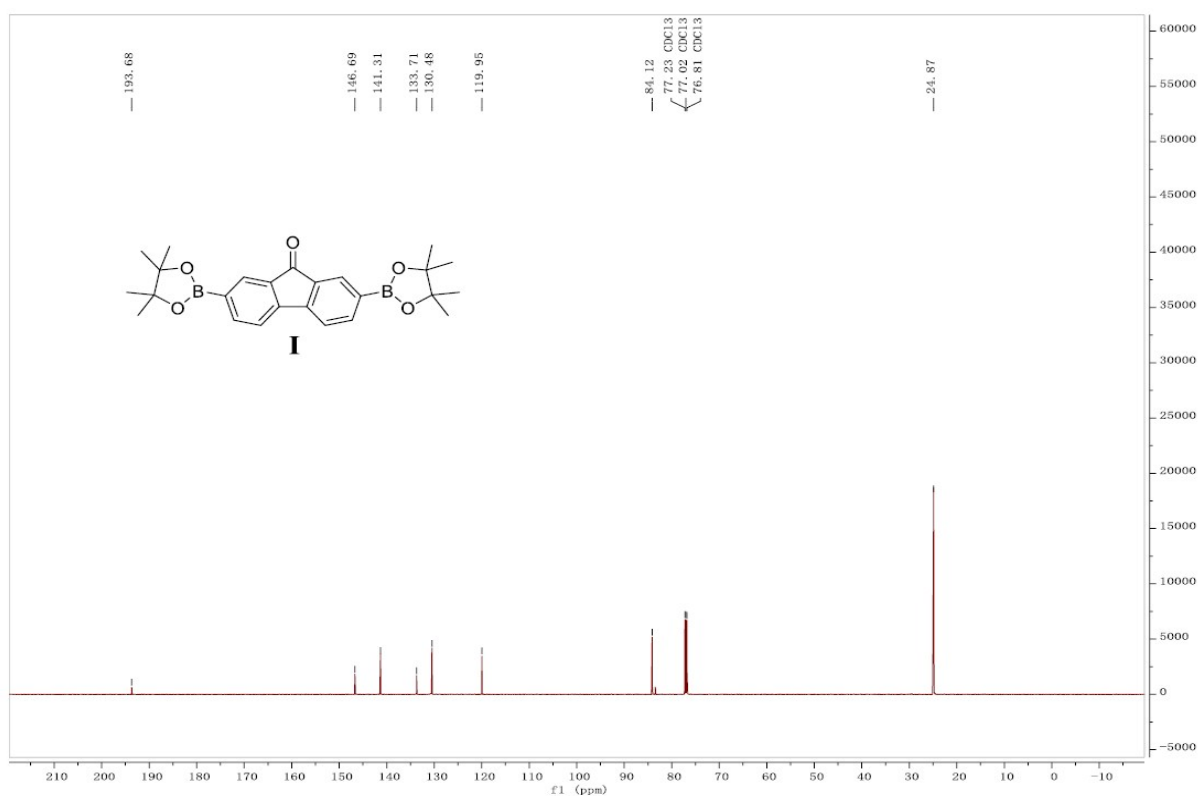


Fig. S2. <sup>13</sup>C NMR spectrum of the compound **I**



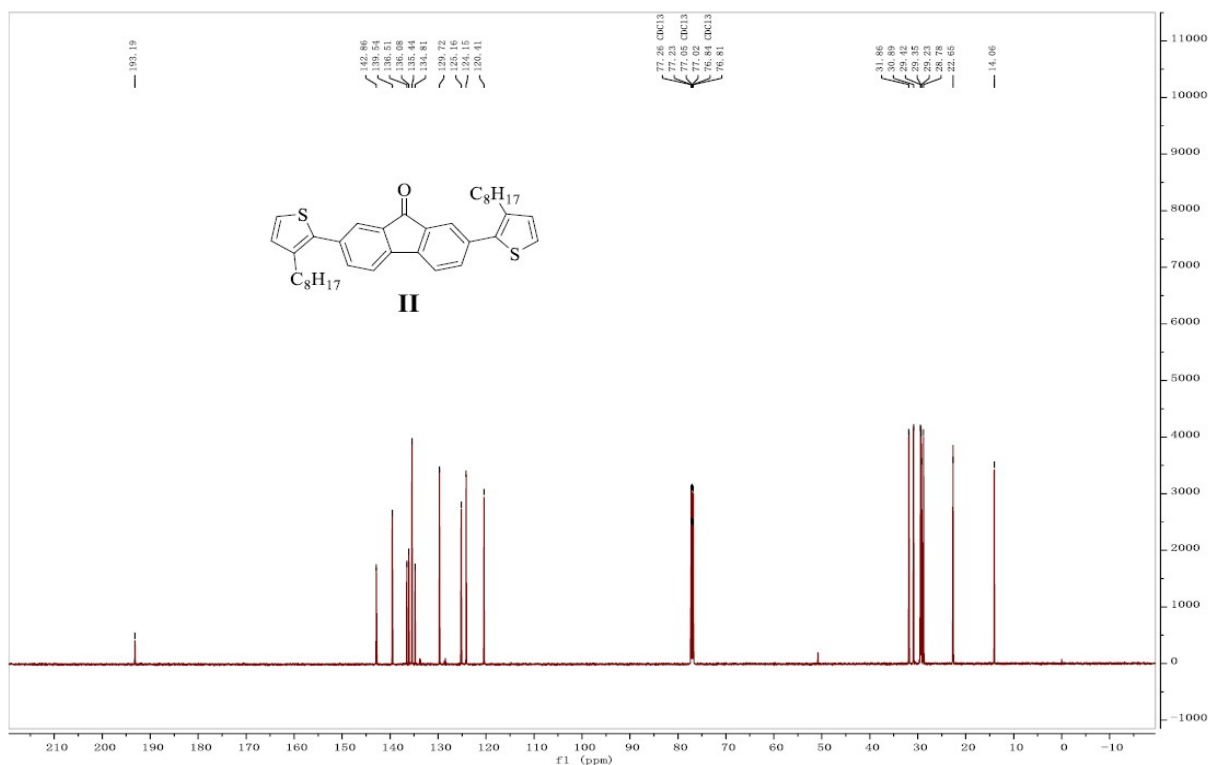
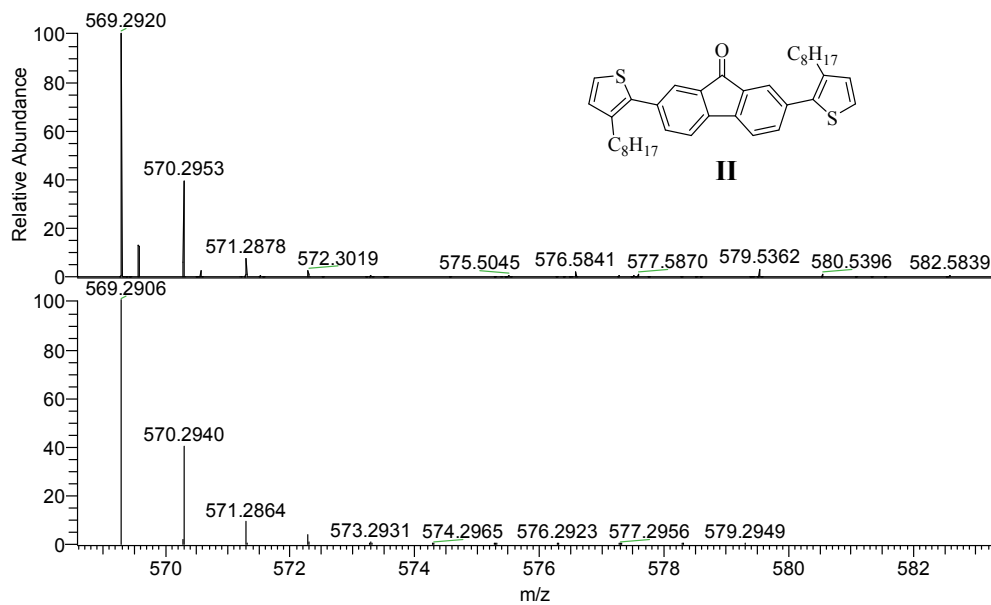


Fig. S5. <sup>13</sup>C NMR spectrum of the compound **II**

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1.75E6  
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02\_190929162910#1  
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FTMS + p ESI Full  
ms [100.00-1000.00]

NL:  
6.01E5  
C<sub>37</sub>H<sub>44</sub>O<sub>2</sub>+H:  
C<sub>37</sub>H<sub>45</sub>O<sub>1</sub>S<sub>2</sub>  
pa Chrg 1

Fig. S6. Mass spectrum of the compound **II**

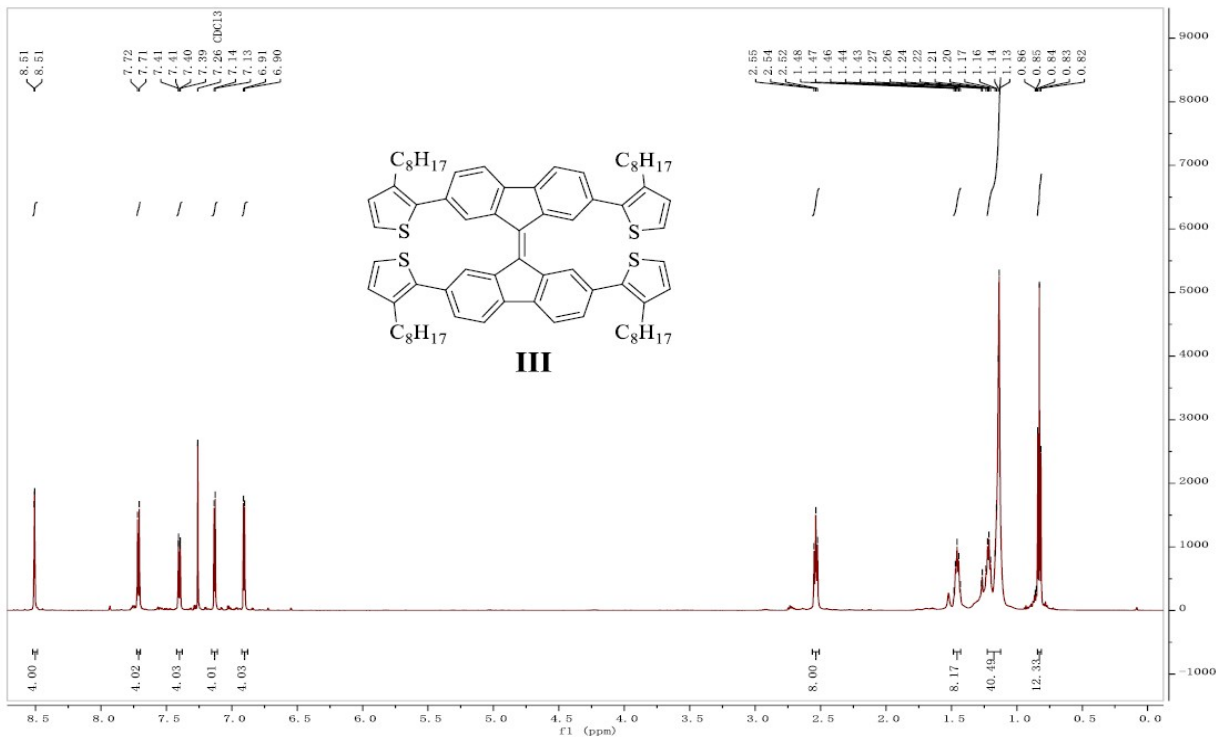


Fig. S7.  $^1H$  NMR spectrum of the compound **III**

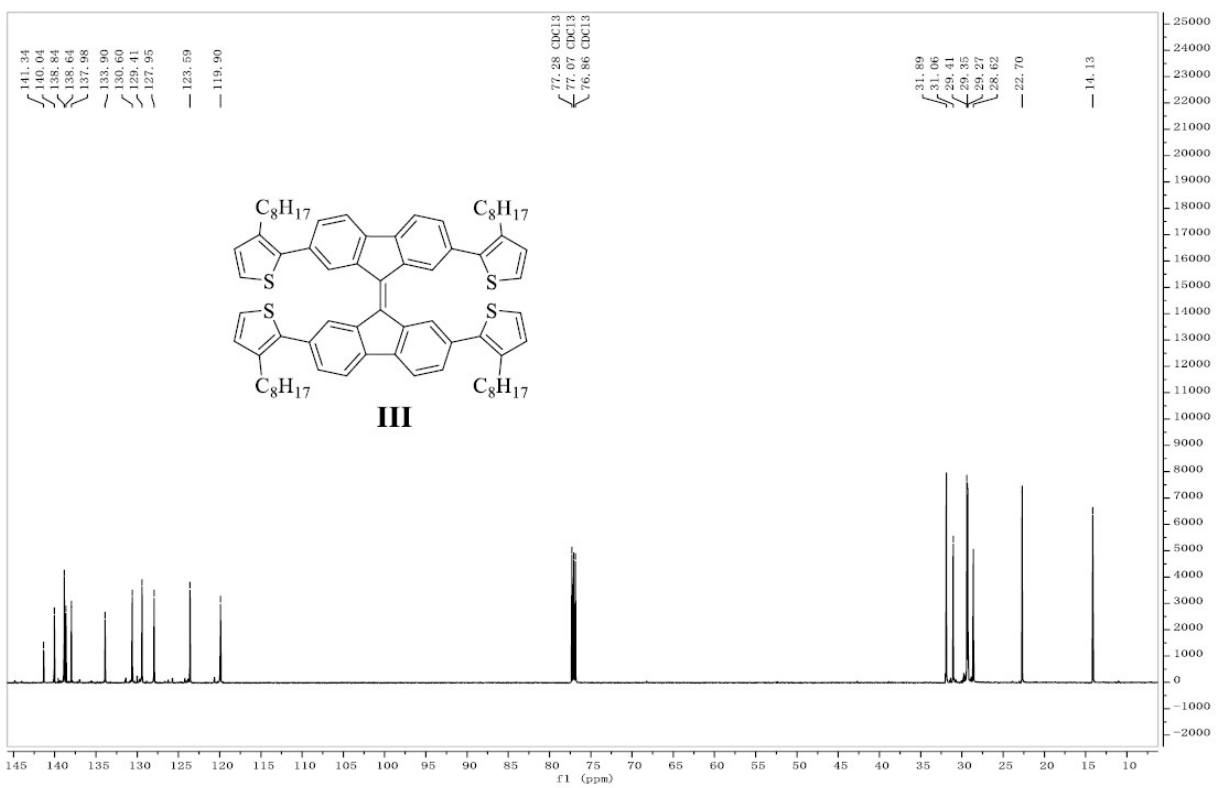


Fig. S8.  $^{13}C$  NMR spectrum of the compound **III**





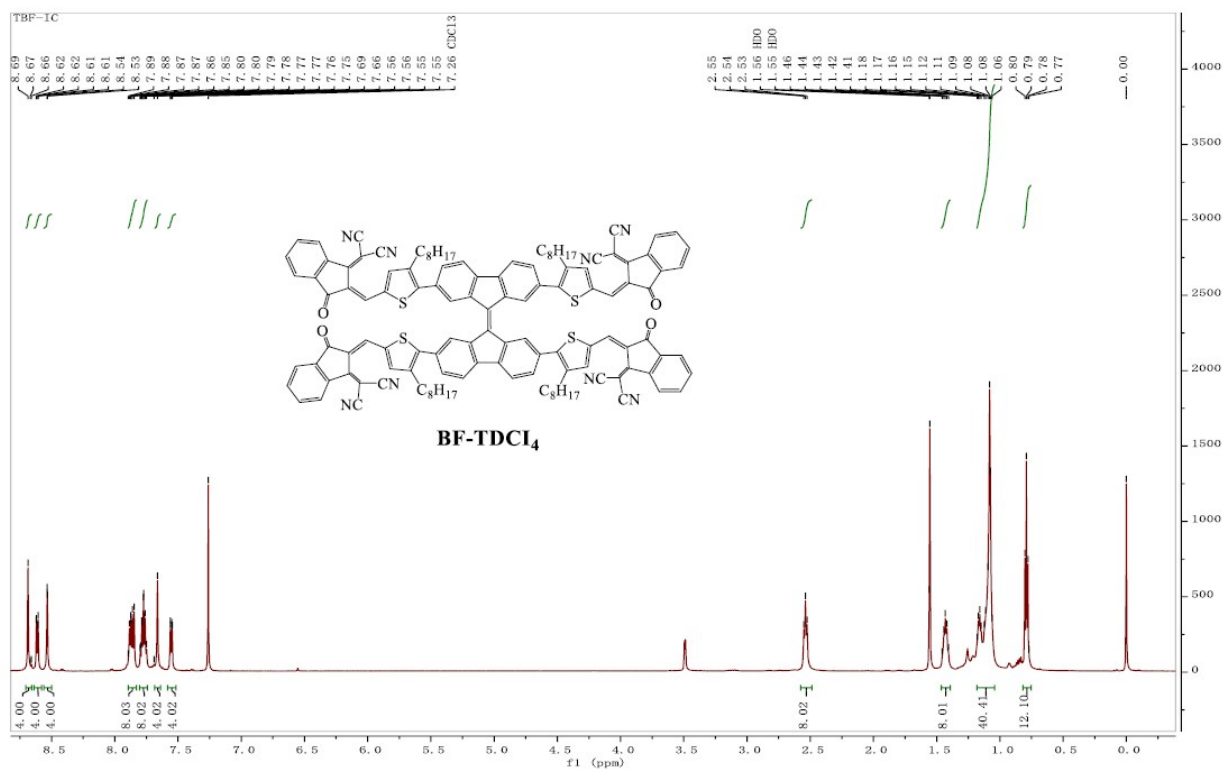


Fig. S13. <sup>1</sup>H NMR spectrum of the compound **BF-TDCI<sub>4</sub>**

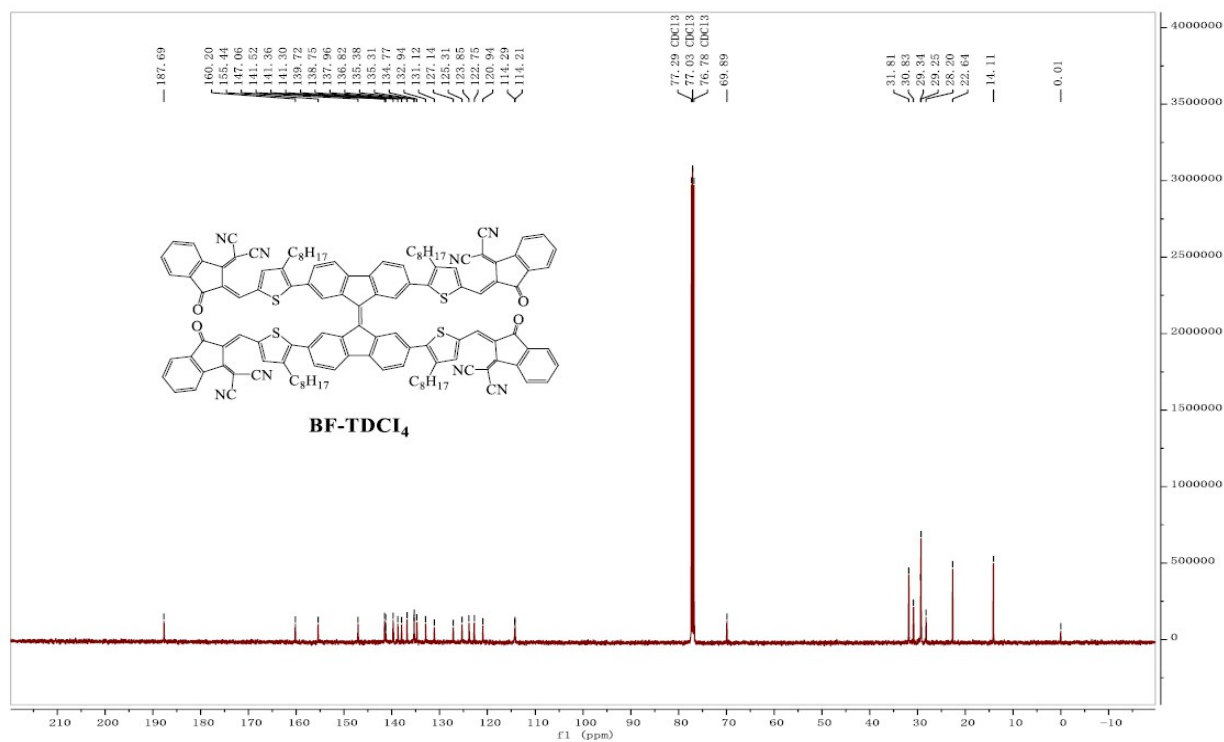
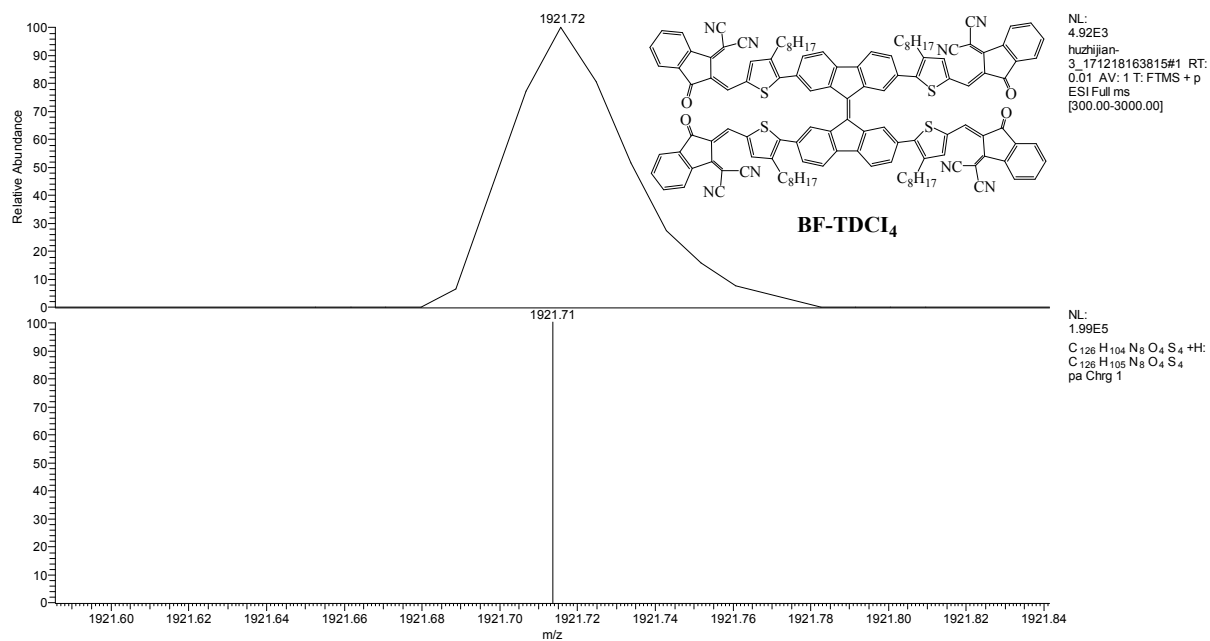


Fig. S14. <sup>13</sup>C NMR spectrum of the compound **BF-TDCI<sub>4</sub>**



Fig. S15. Mass spectrum of the compound **BF-TDCl<sub>4</sub>**