

Supporting information

Visible-light-induced C(sp³)-H bromination of 4-methylthiophene derivatives with HBr/H₂O₂

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1. Photoreaction Setup

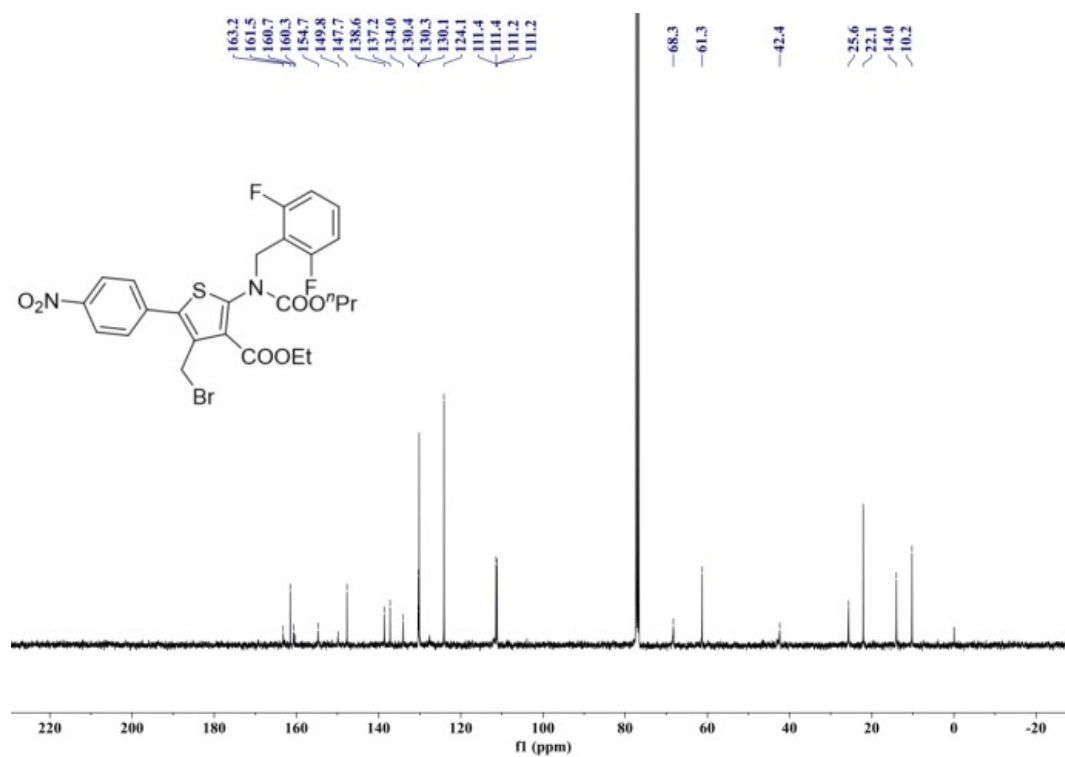
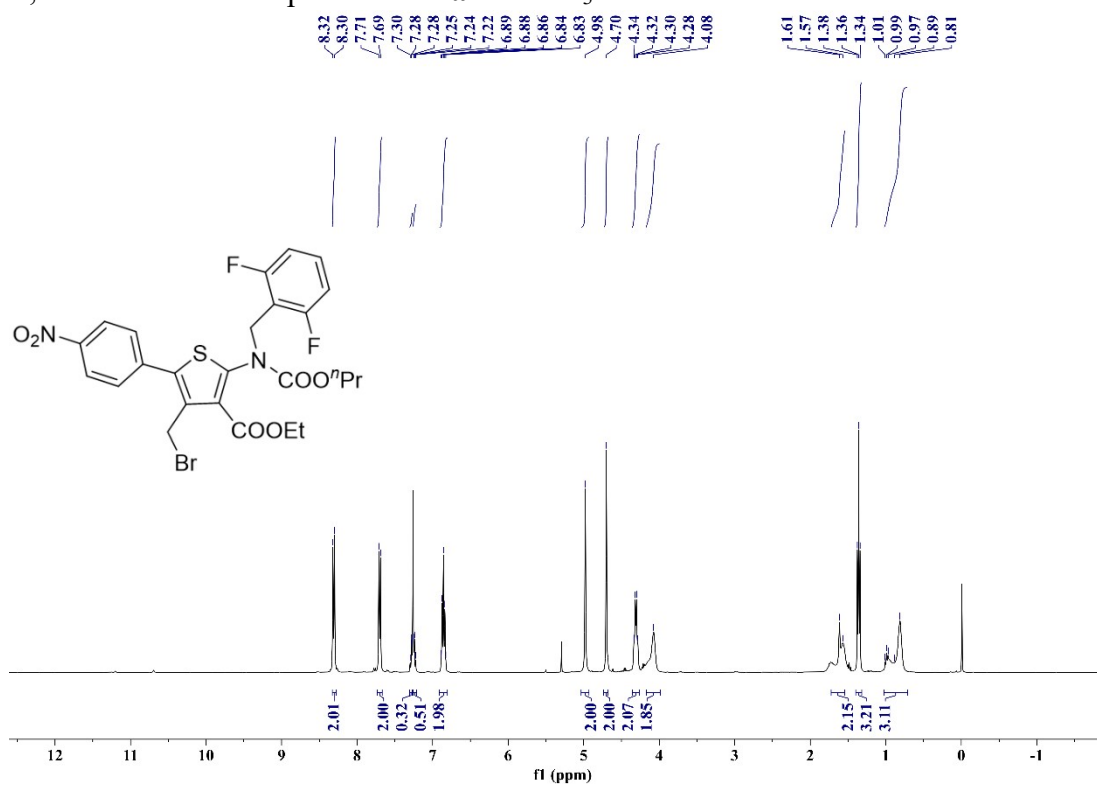
Reactions were irradiated using a photo-reactor (Manufacturer: Xuzhou Fancai, Model: KL-647, $\lambda_{\text{max}} = 438 \text{ nm}$) shown in Figure S1. In order to keep the reaction temperature at room temperature, a simple cooling fan was installed above the reaction vessel. Borosilicate glass vessel was used for the reaction without any filter. Reaction vessel is secured by a three-claw clamp to keep a constant distance of 4 cm between the reaction vessel and the light source.

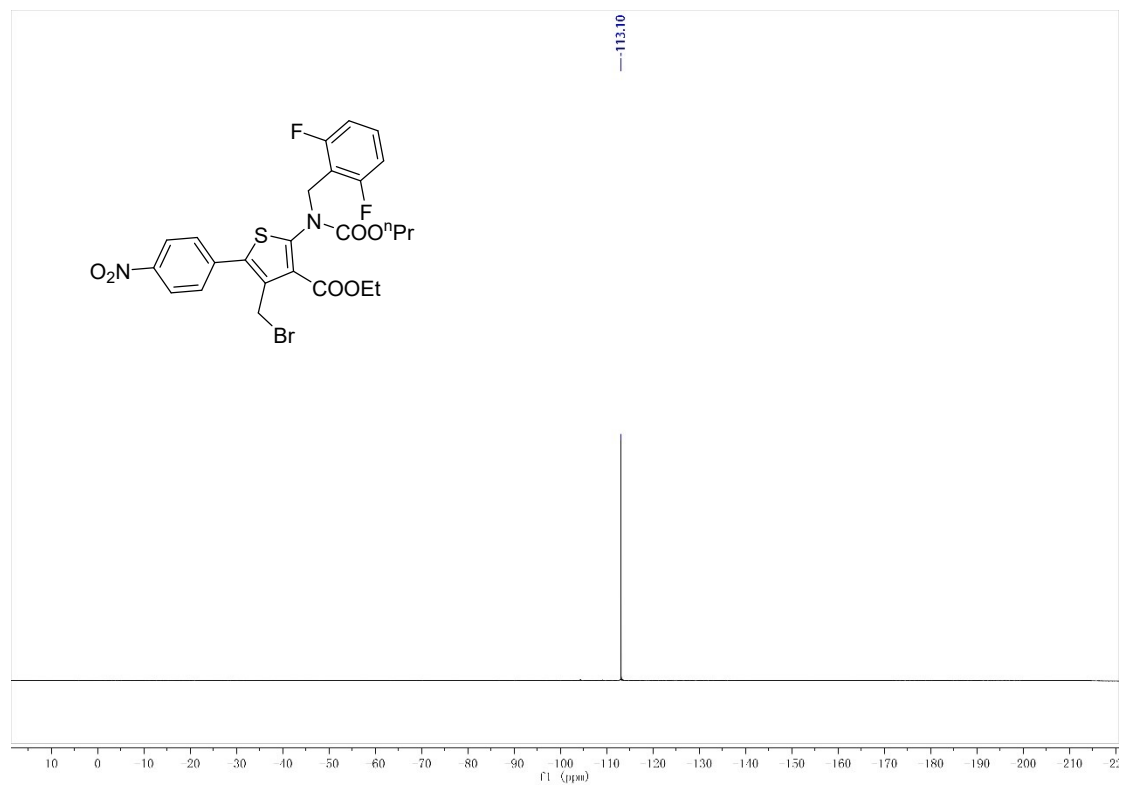


Figure S1. Photo-reactor (photographed by author Wenbo Song)

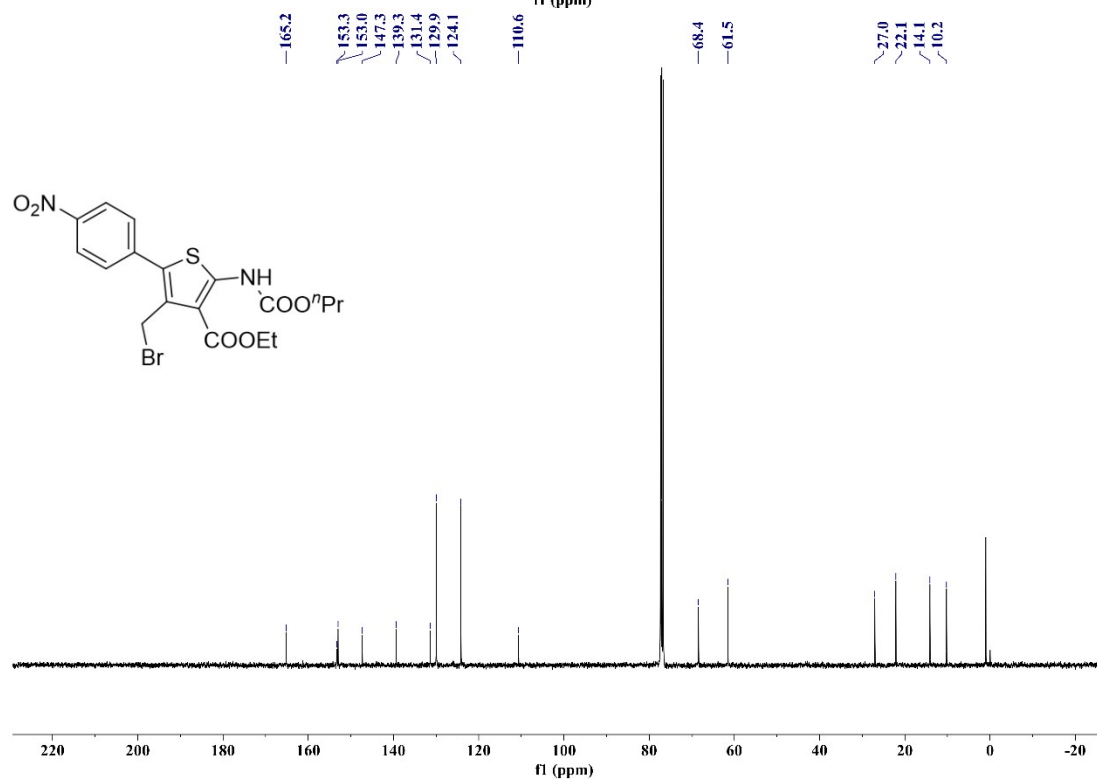
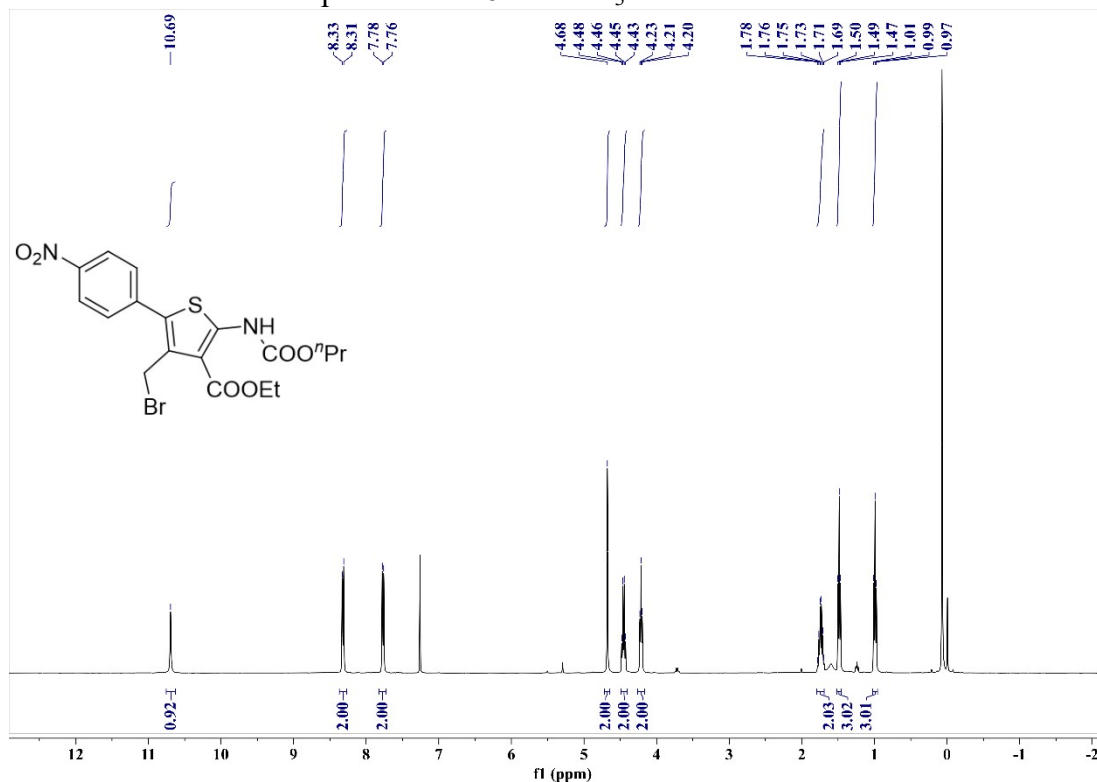
2.NMR Charts

^1H , ^{13}C and ^{19}F NMR Spectrum of **2a** in CDCl_3

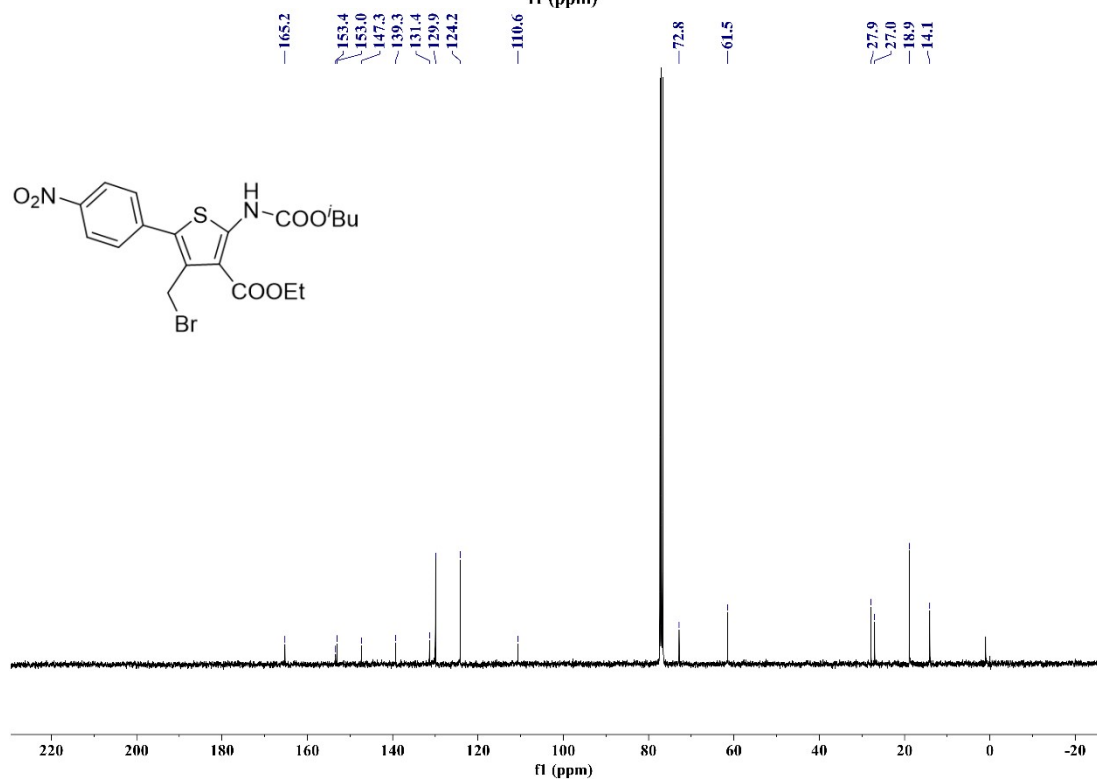
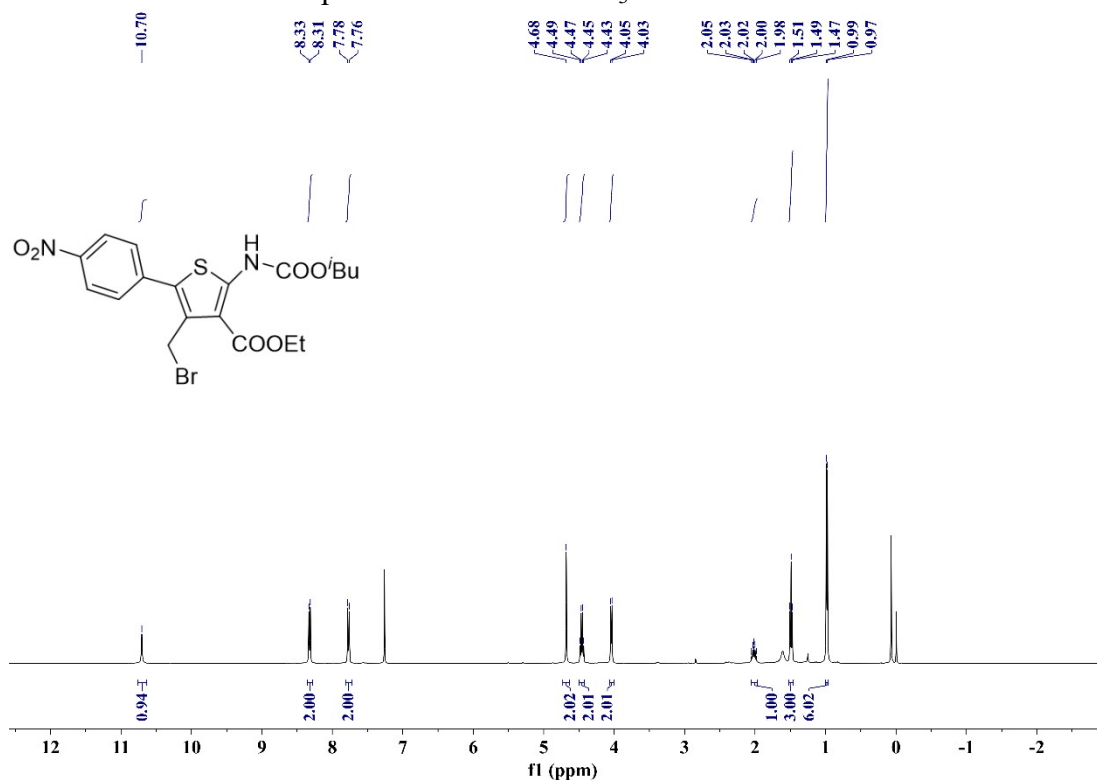




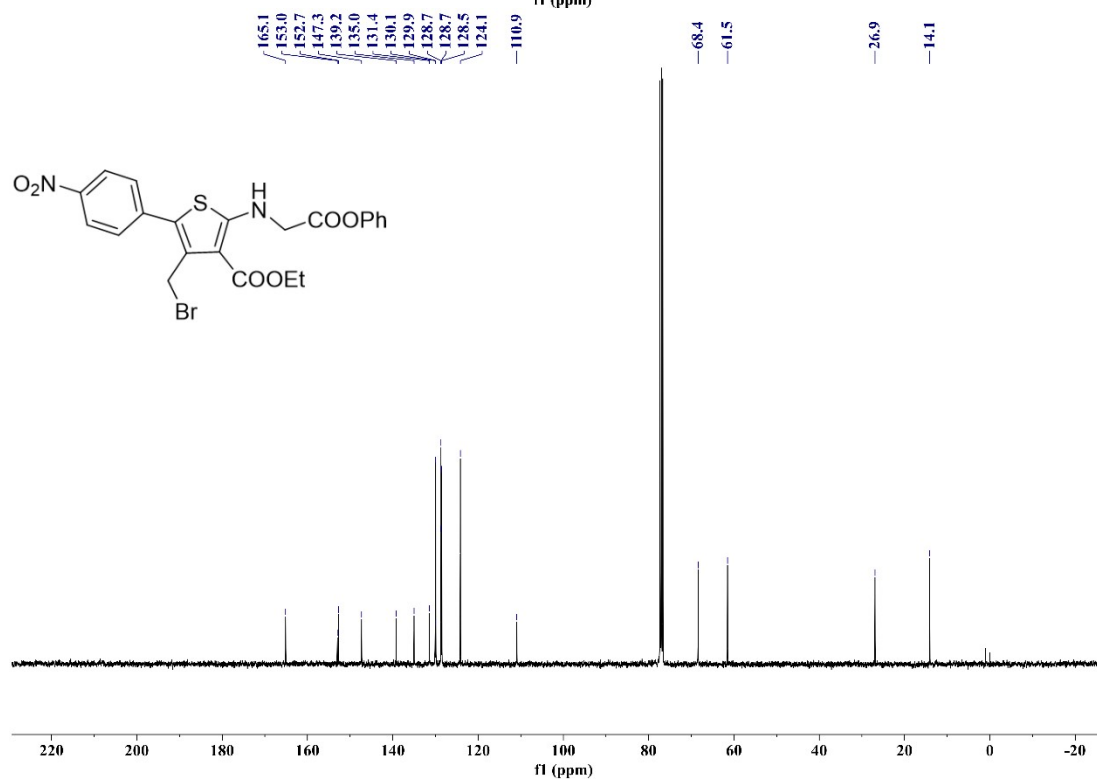
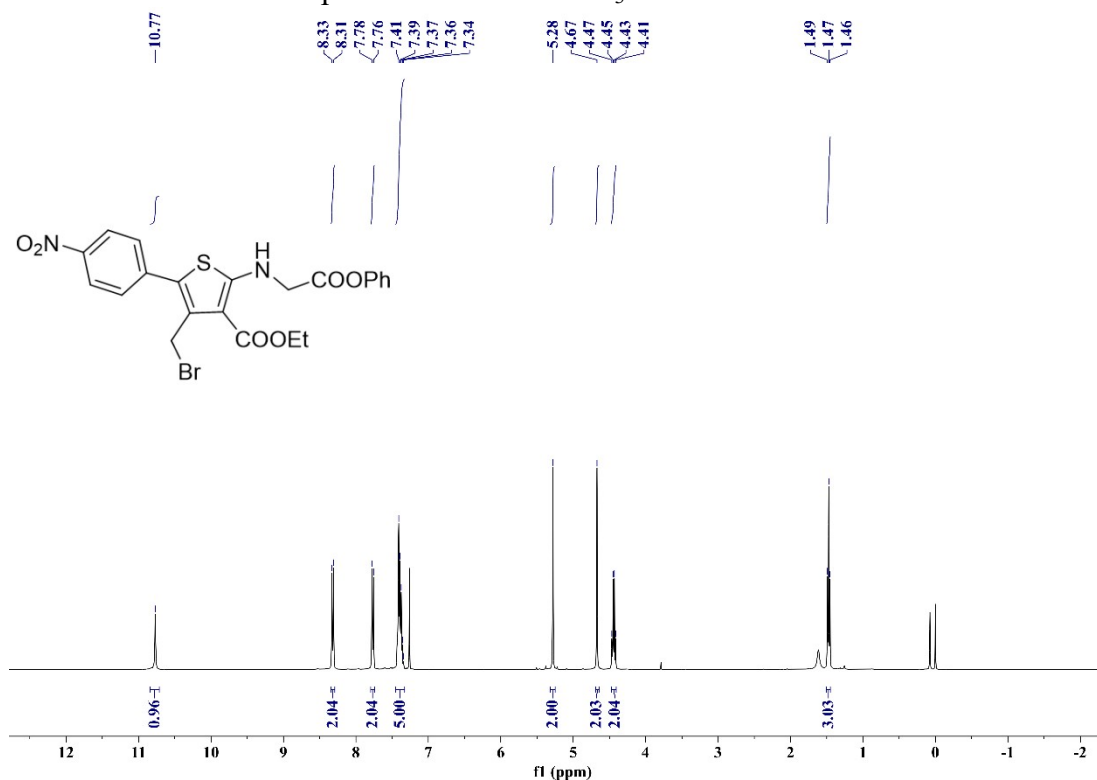
¹H NMR and ¹³C NMR Spectrum of **2c** in CDCl₃



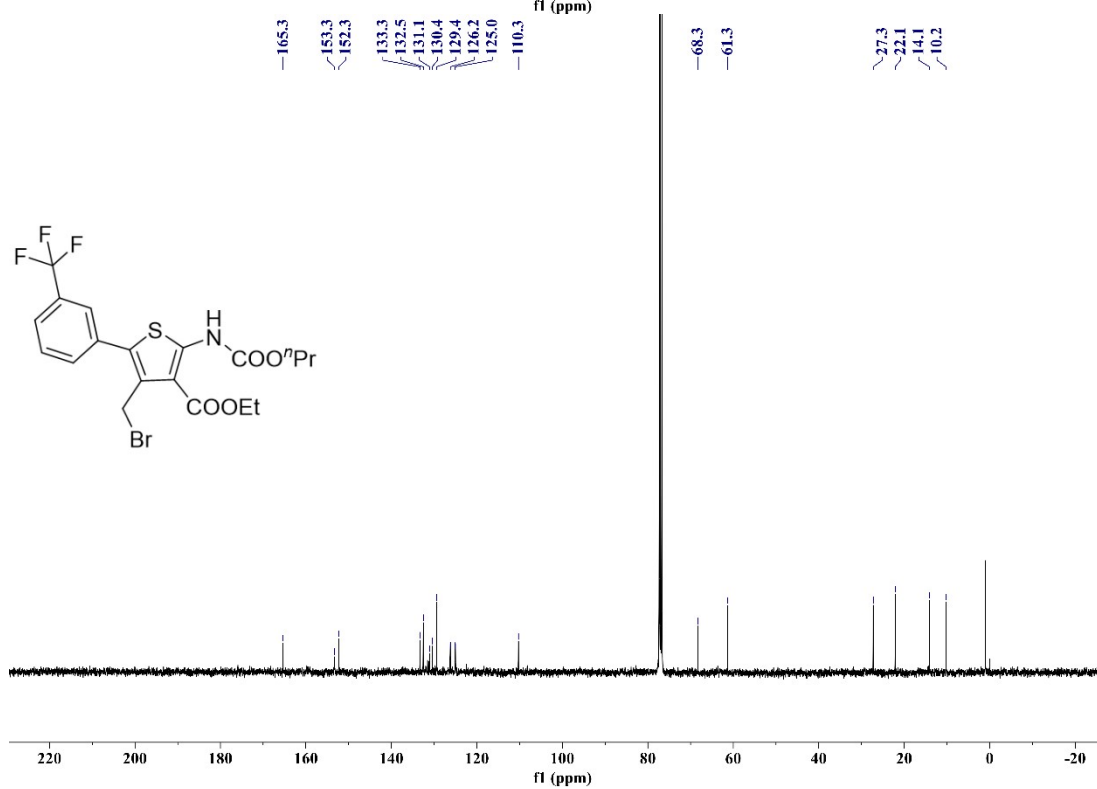
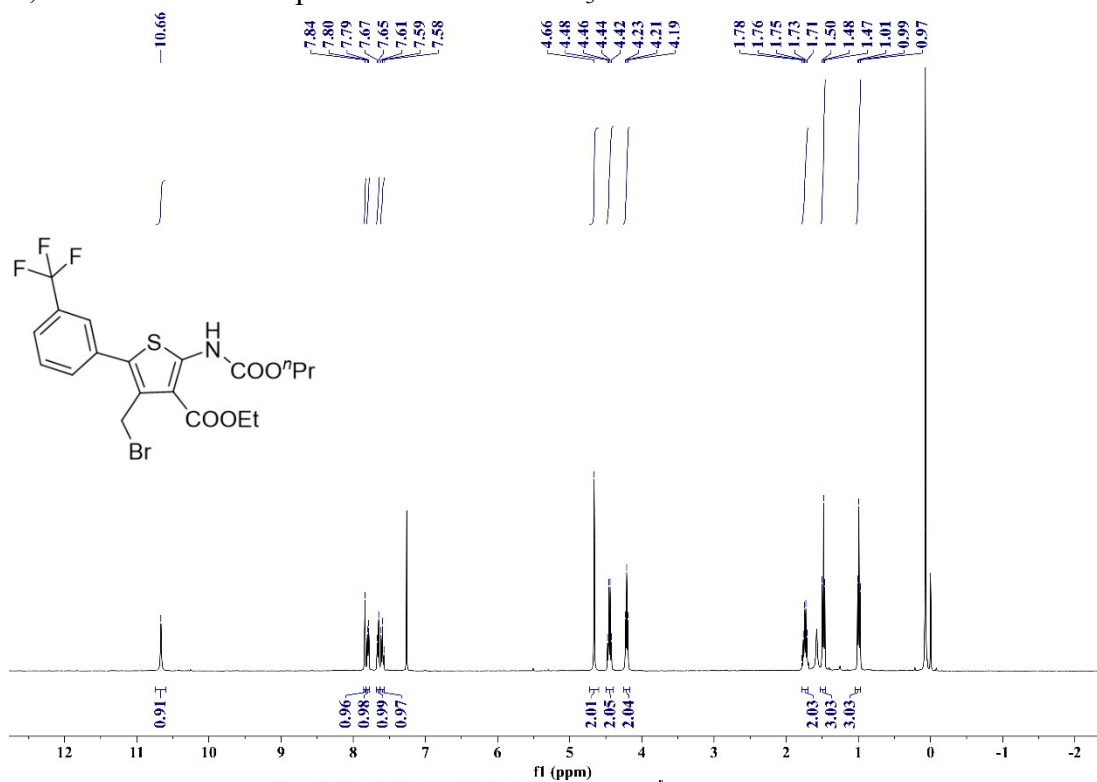
^1H NMR and ^{13}C NMR Spectrum of **2d** in CDCl_3

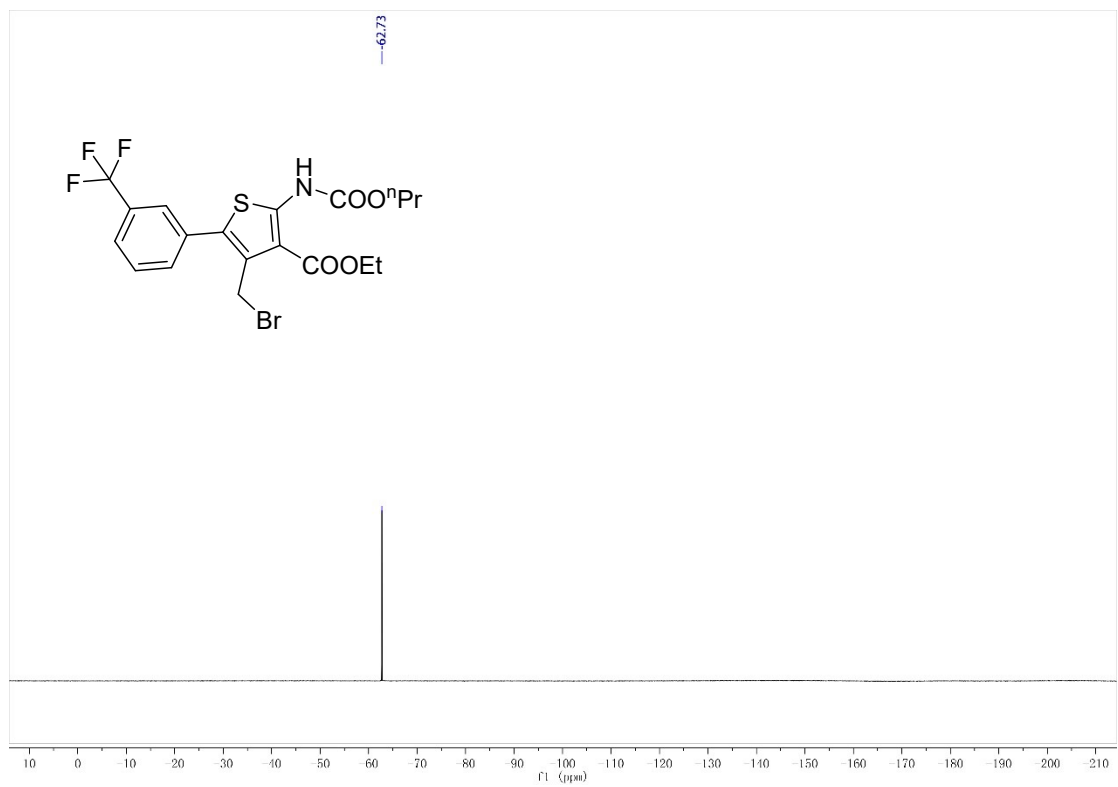


¹H NMR and ¹³C NMR Spectrum of **2e** in CDCl₃

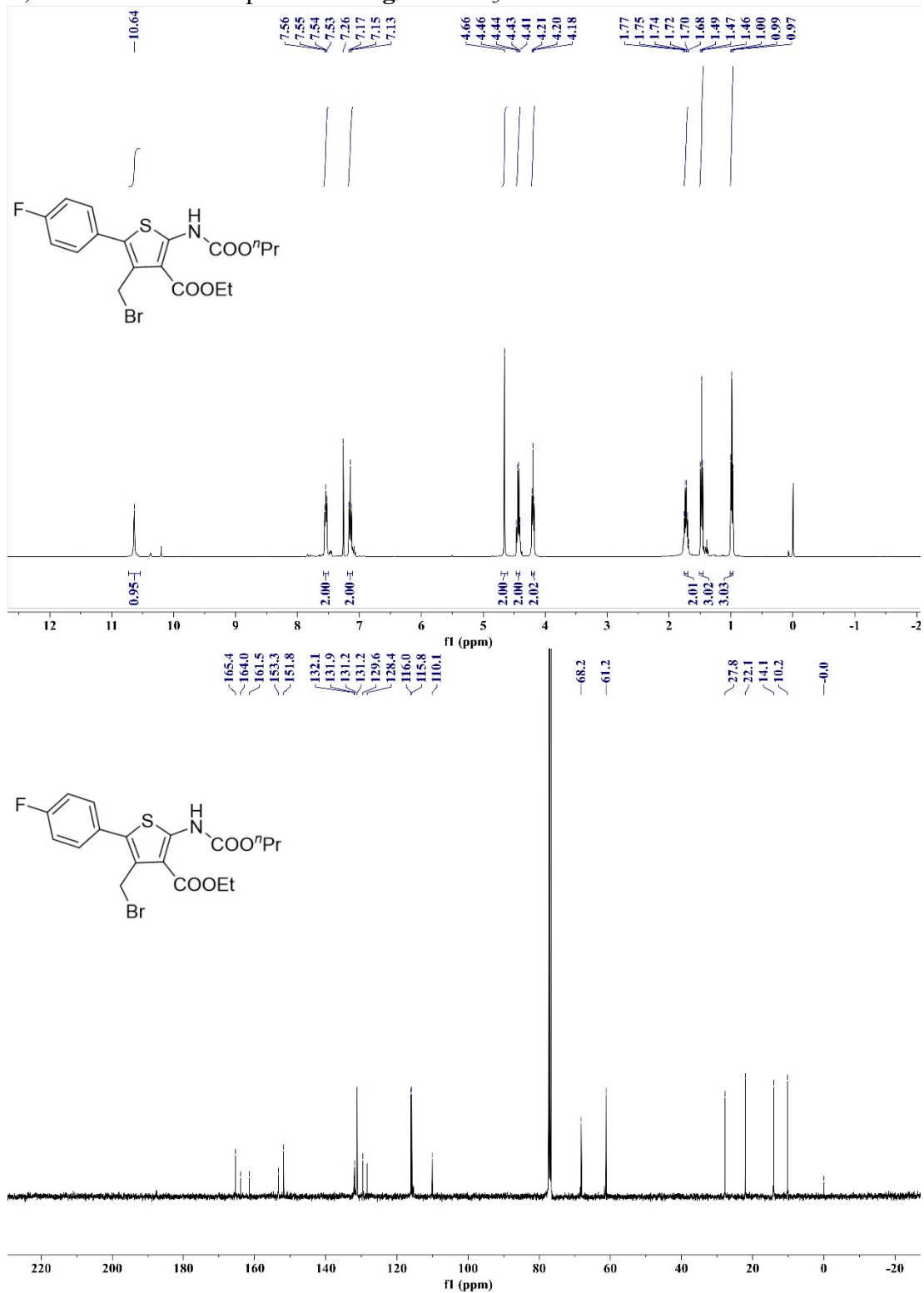


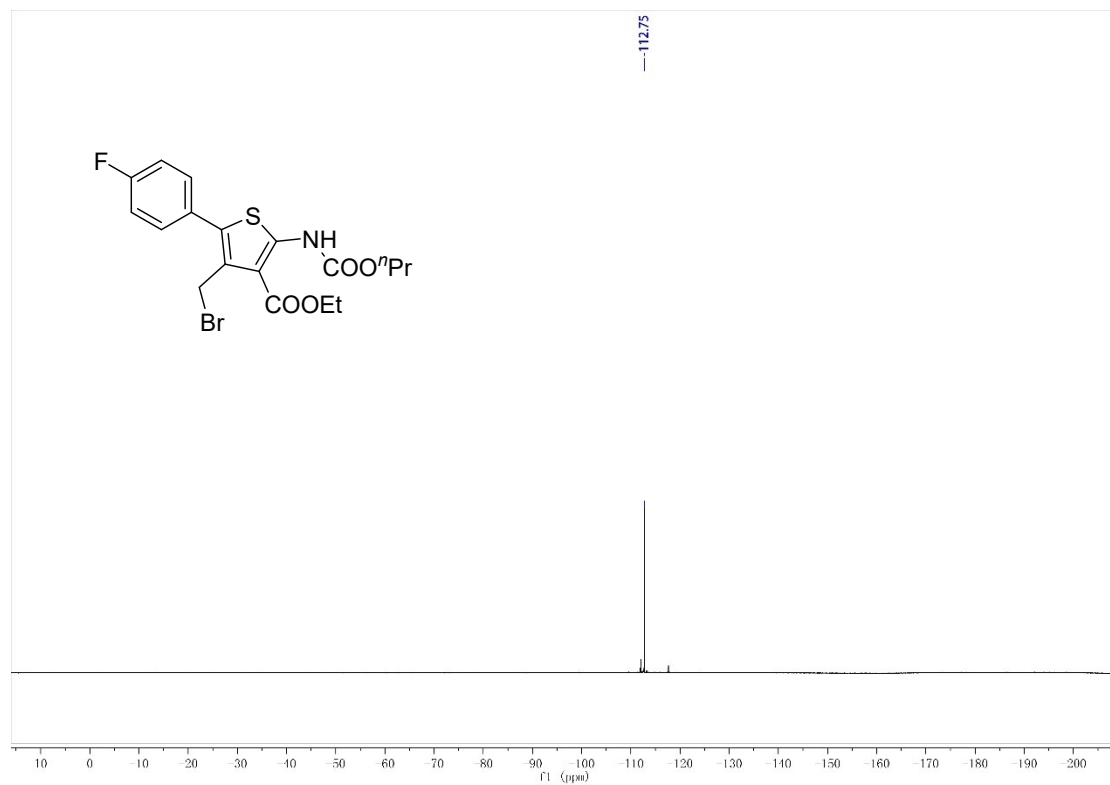
^1H , ^{13}C and ^{19}F NMR Spectrum of **2f** in CDCl_3



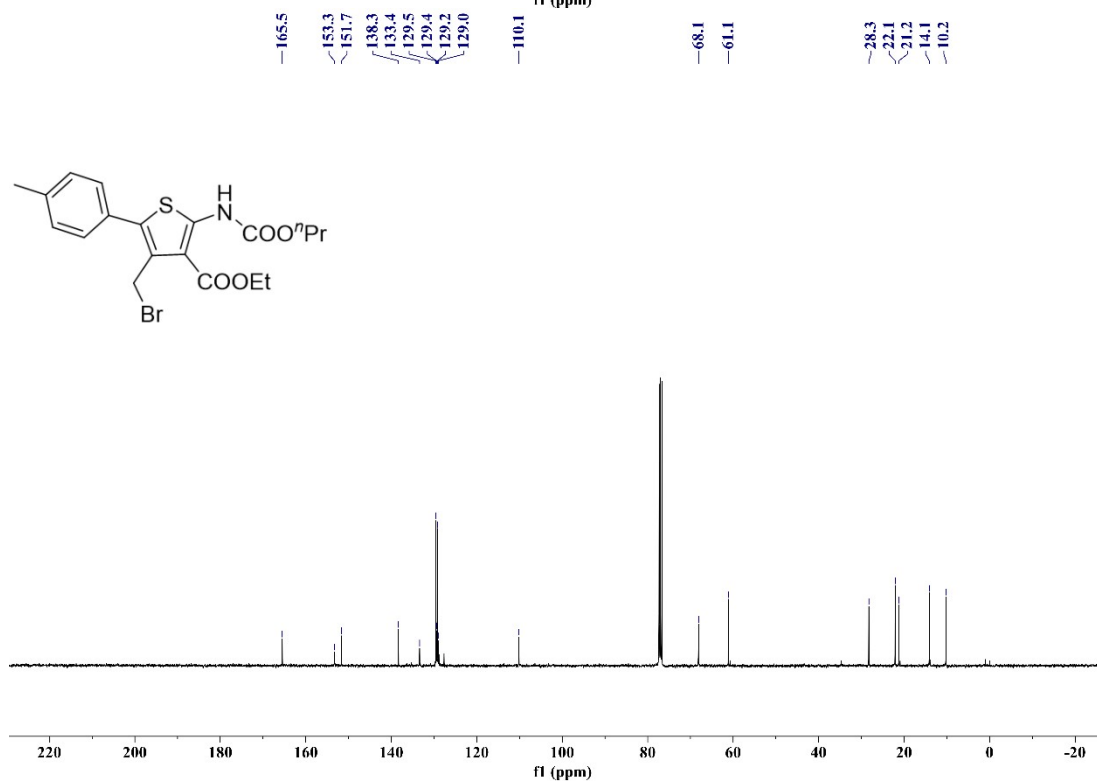
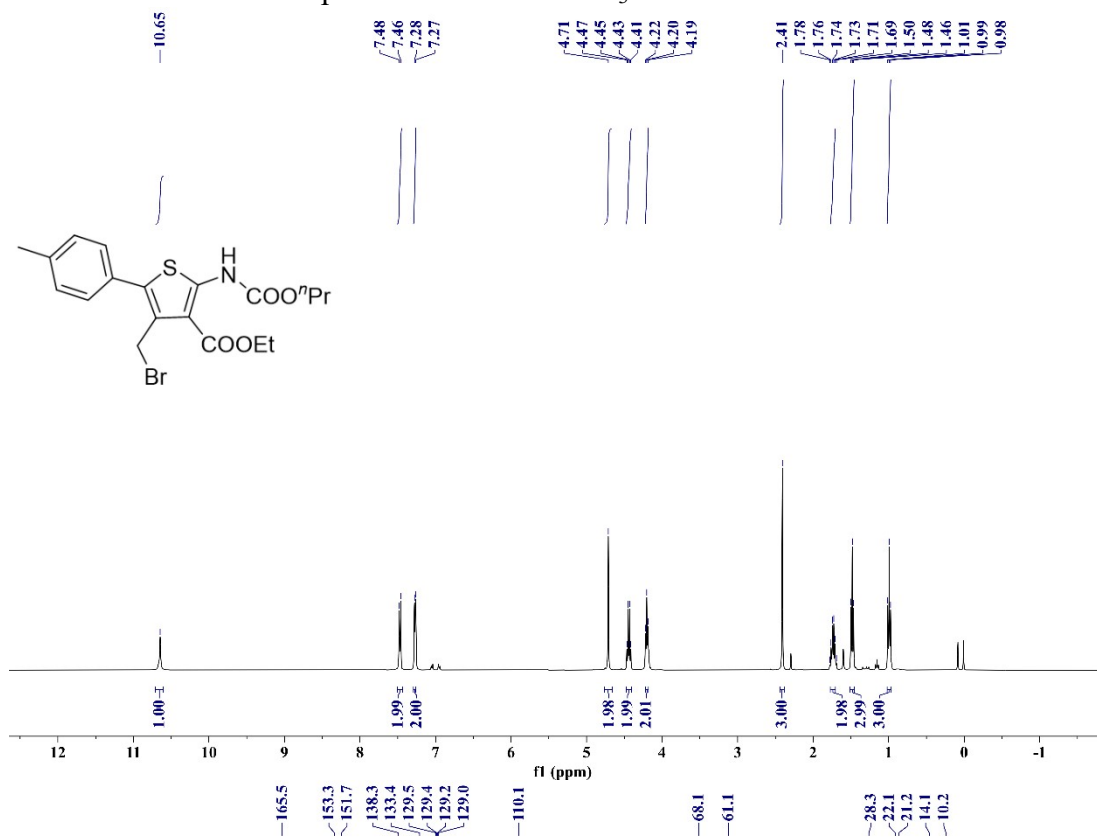


^1H , ^{13}C and ^{19}F NMR Spectrum of **2g** in CDCl_3

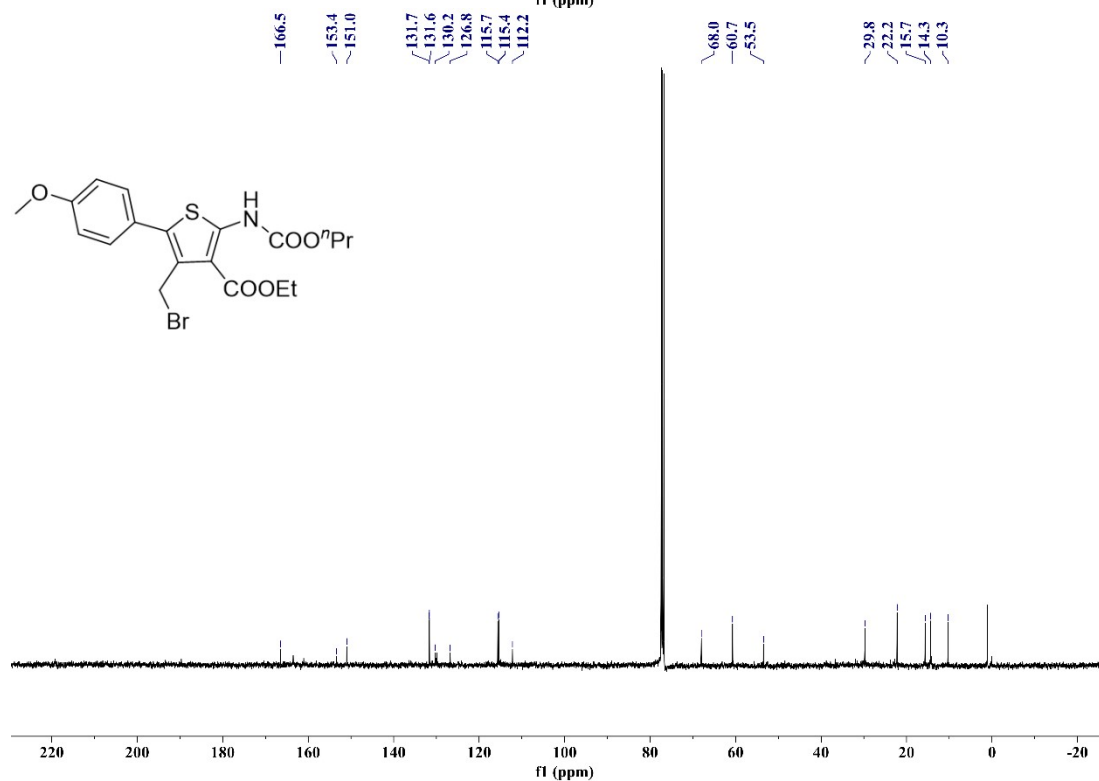
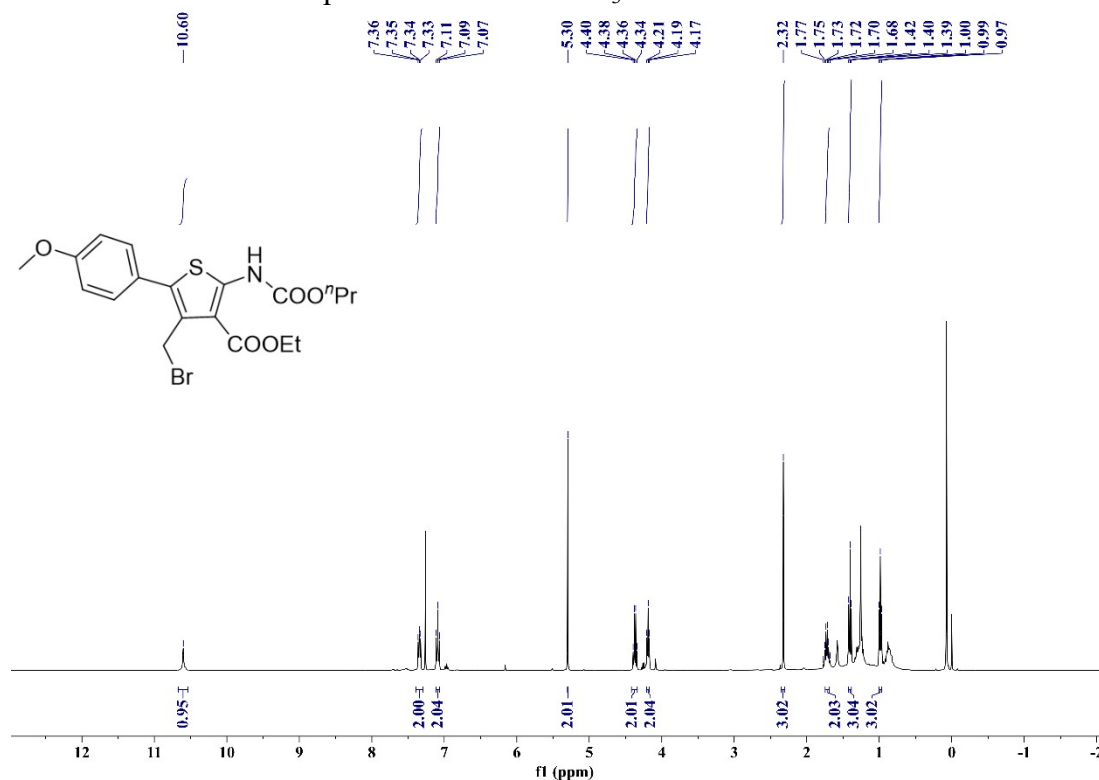




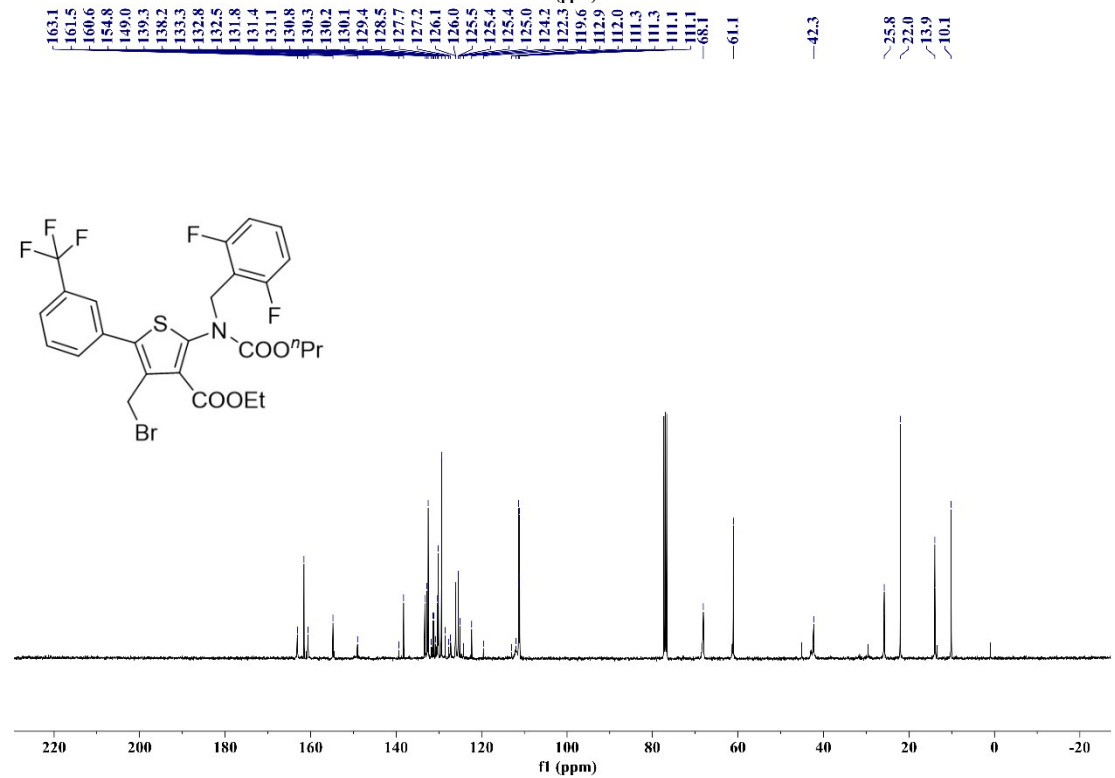
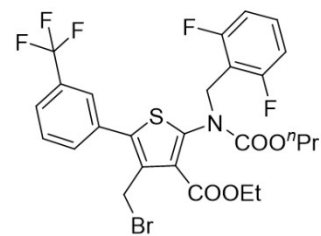
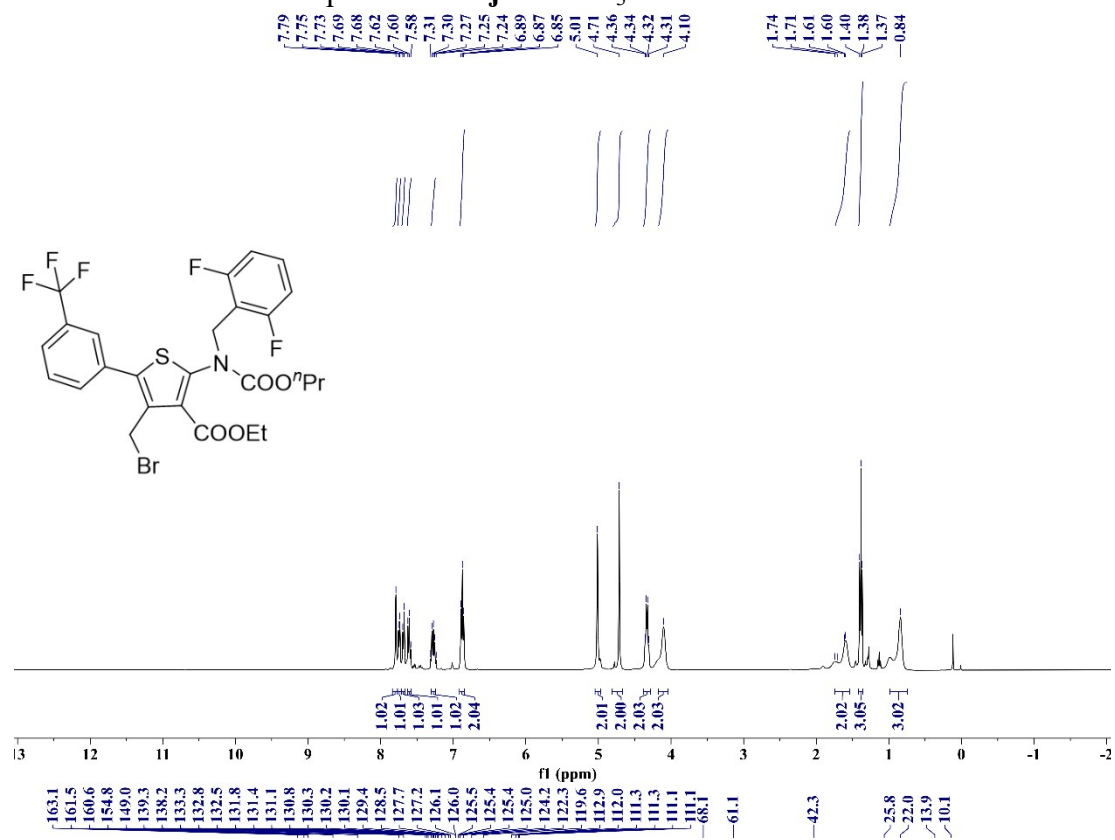
^1H NMR and ^{13}C NMR Spectrum of **2h** in CDCl_3

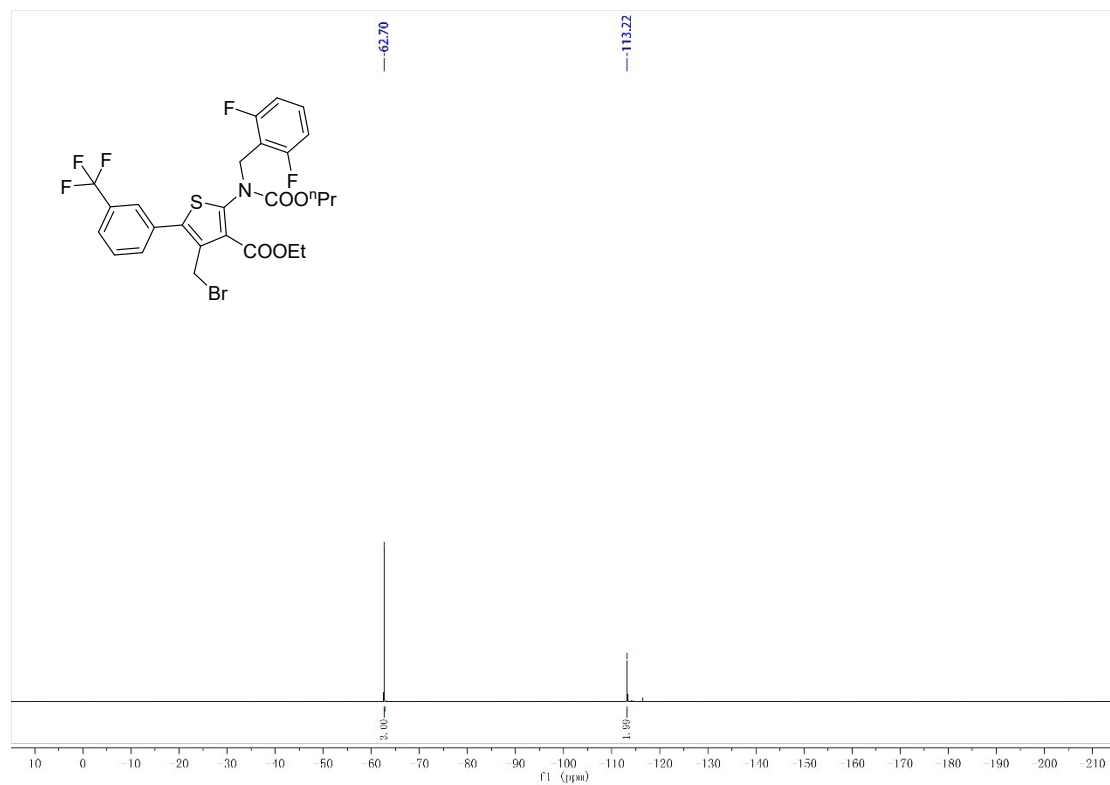


^1H NMR and ^{13}C NMR Spectrum of **2i** in CDCl_3

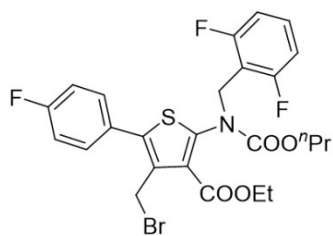
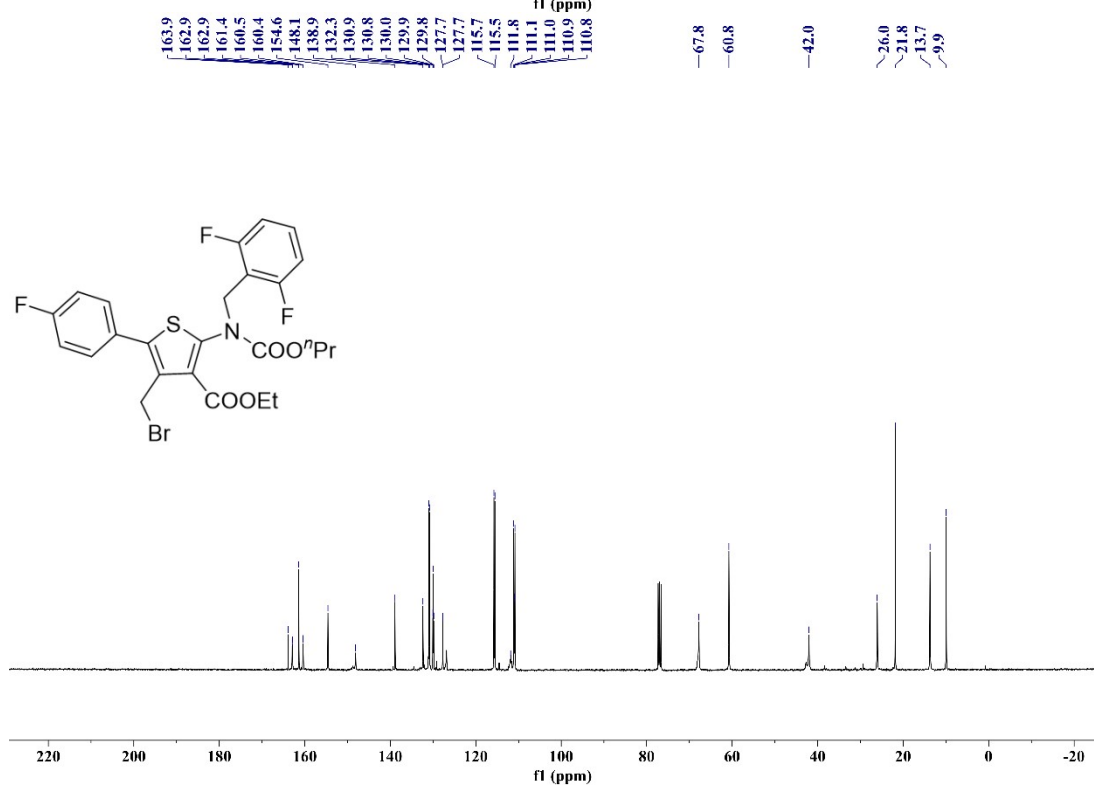
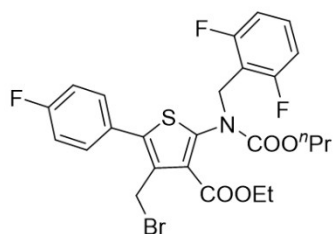
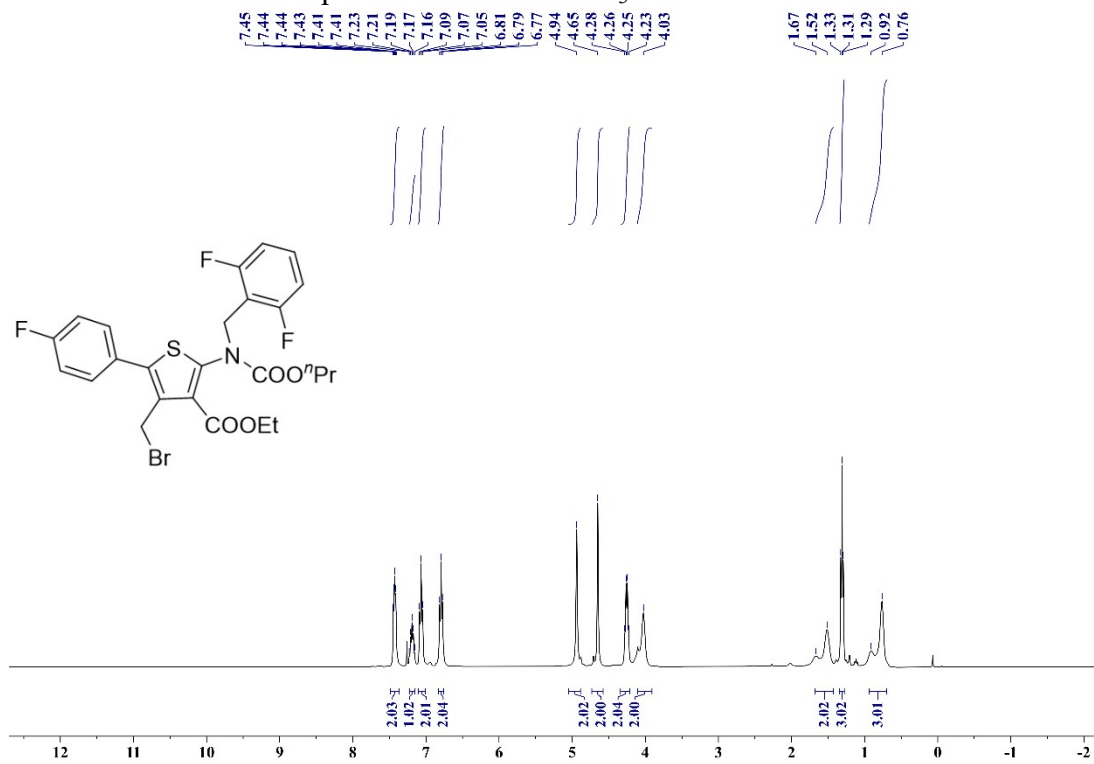


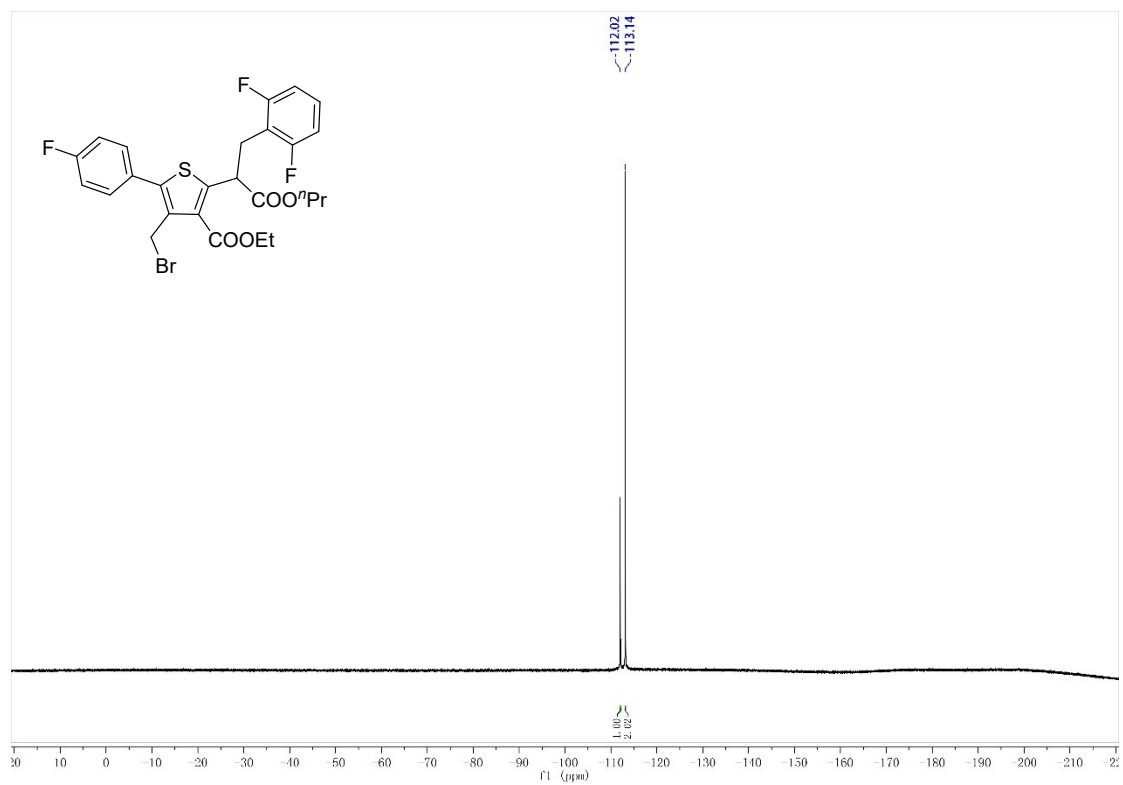
¹H NMR and ¹³C NMR Spectrum of **2j** in CDCl₃



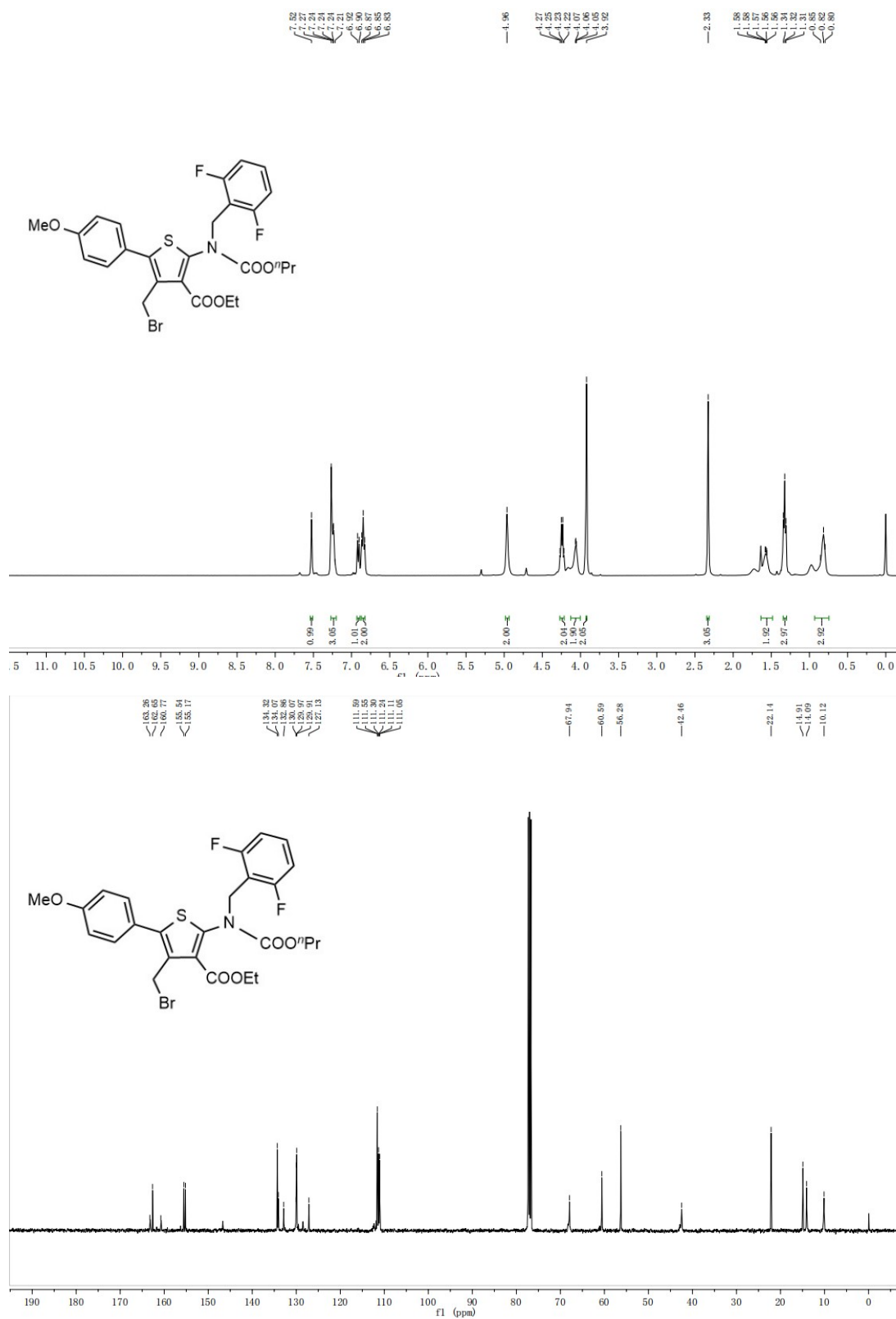


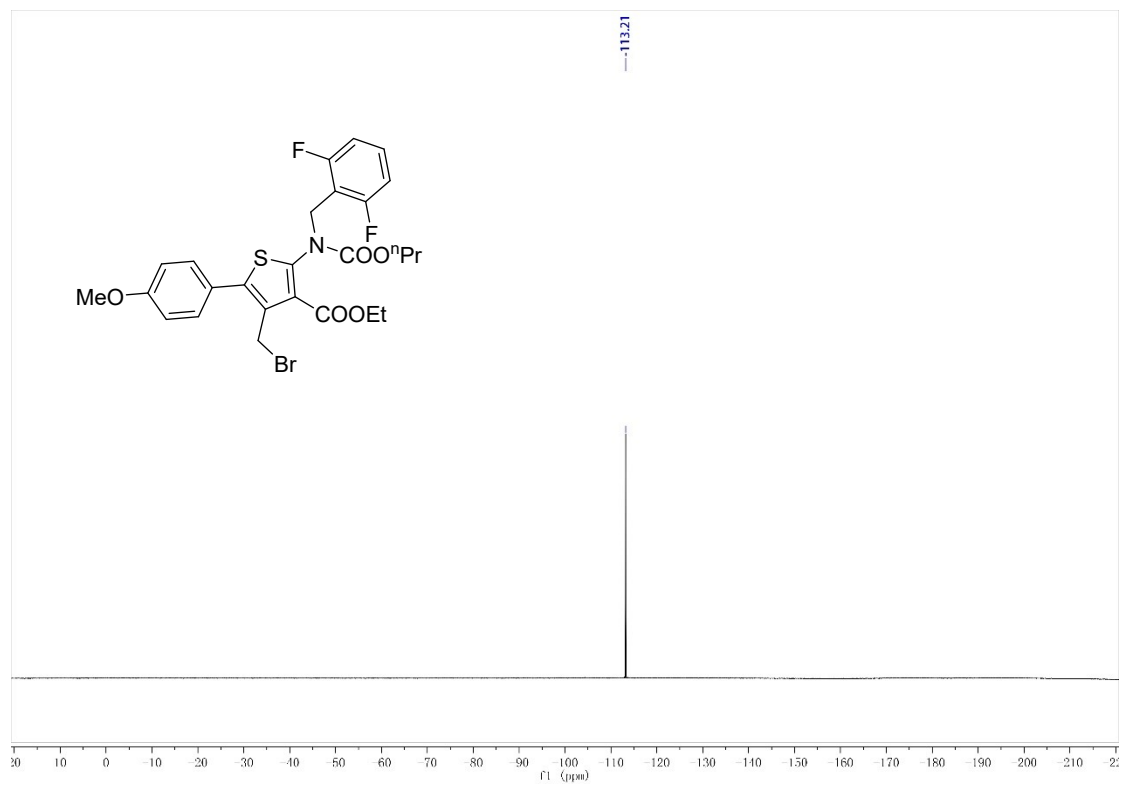
¹H NMR and ¹³C NMR Spectrum of **2k** in CDCl₃



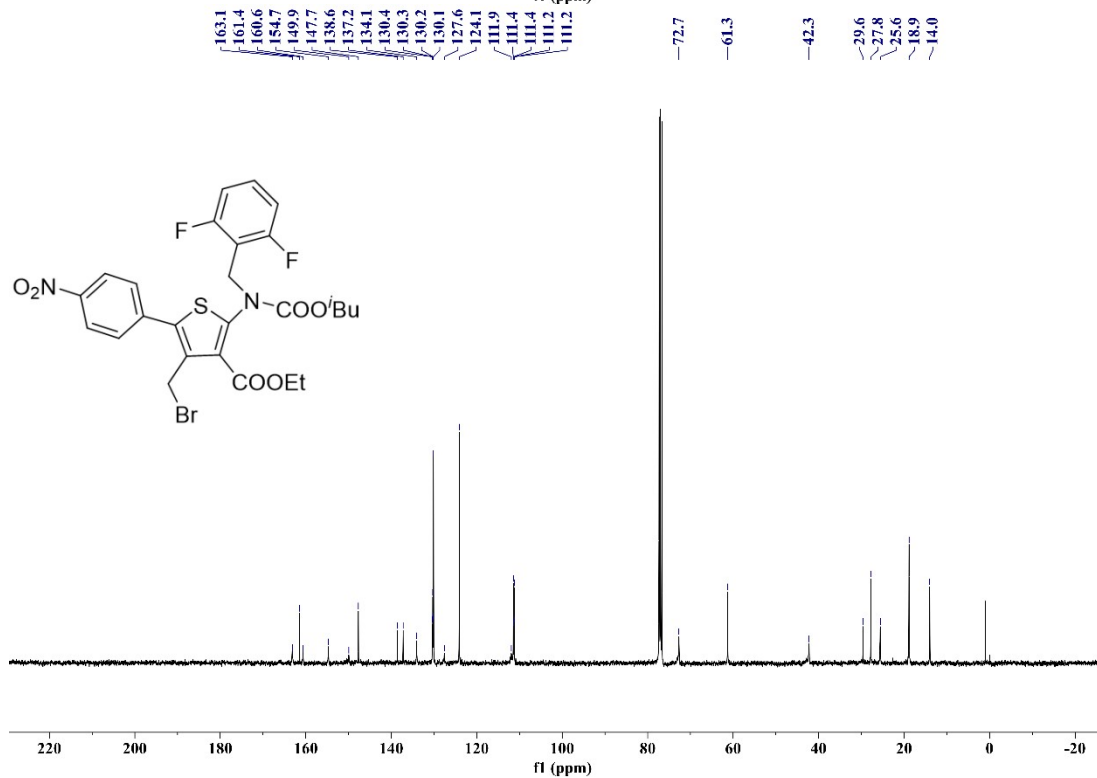
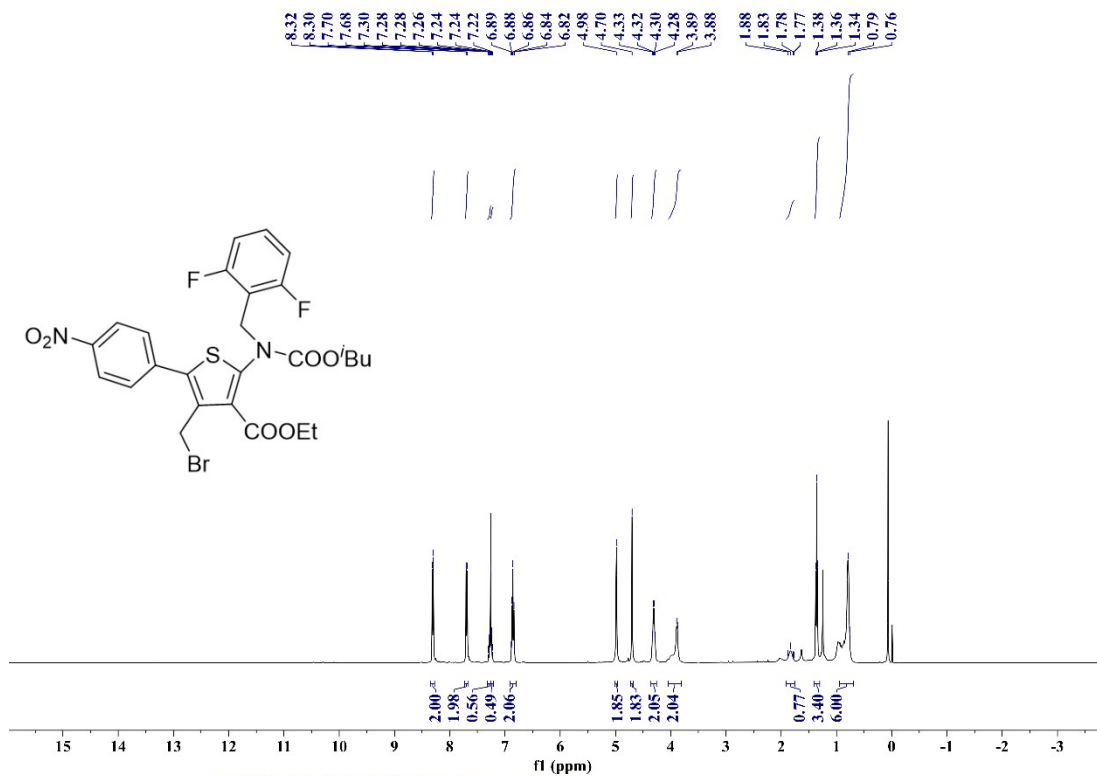


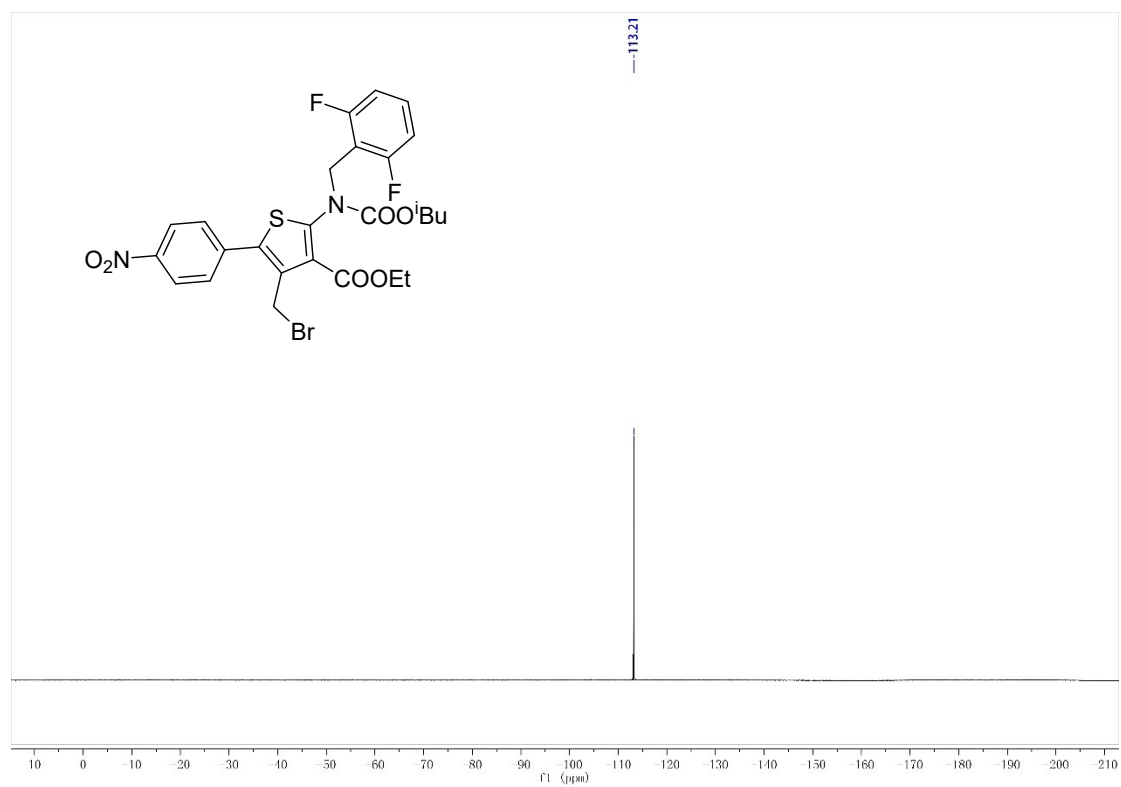
^1H , ^{13}C and ^{19}F NMR Spectrum of **21** in CDCl_3



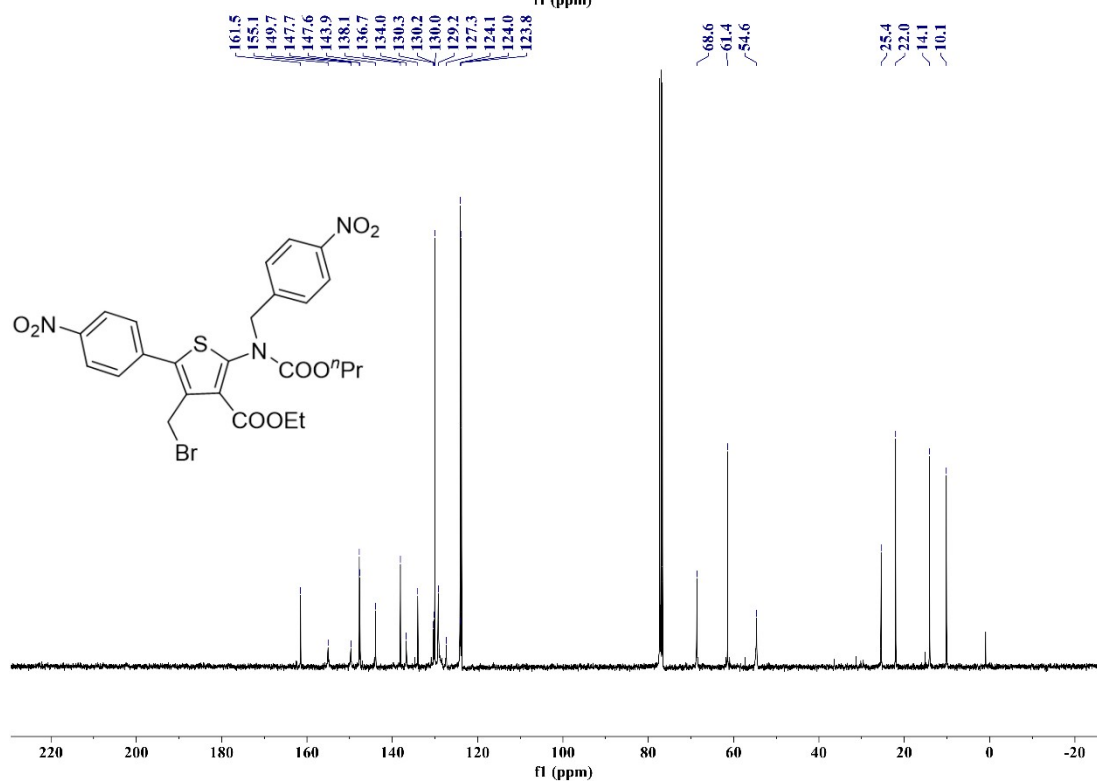
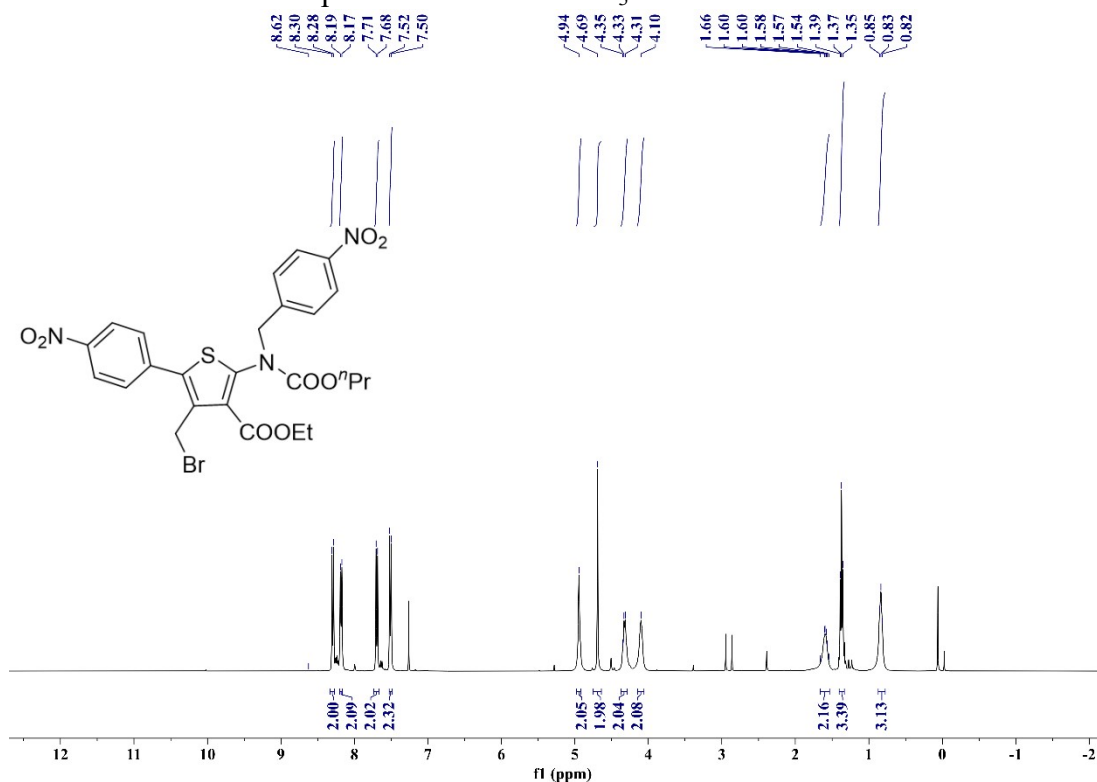


¹H NMR and ¹³C NMR Spectrum of **2m** in CDCl₃

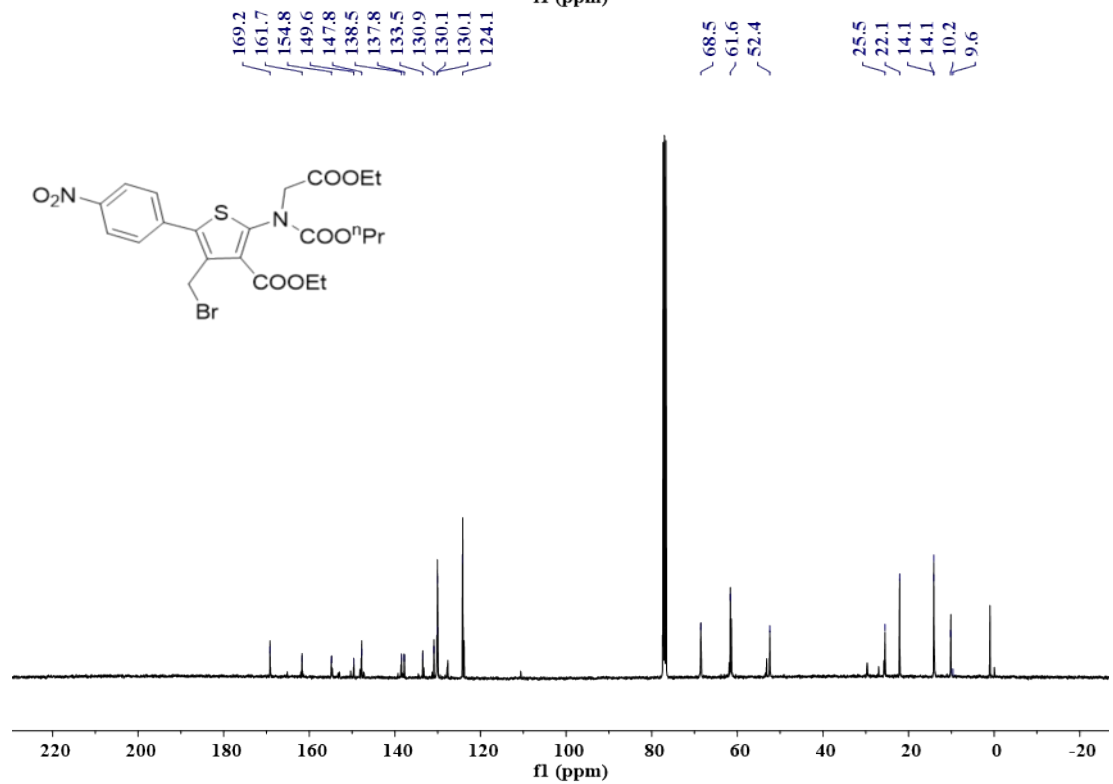
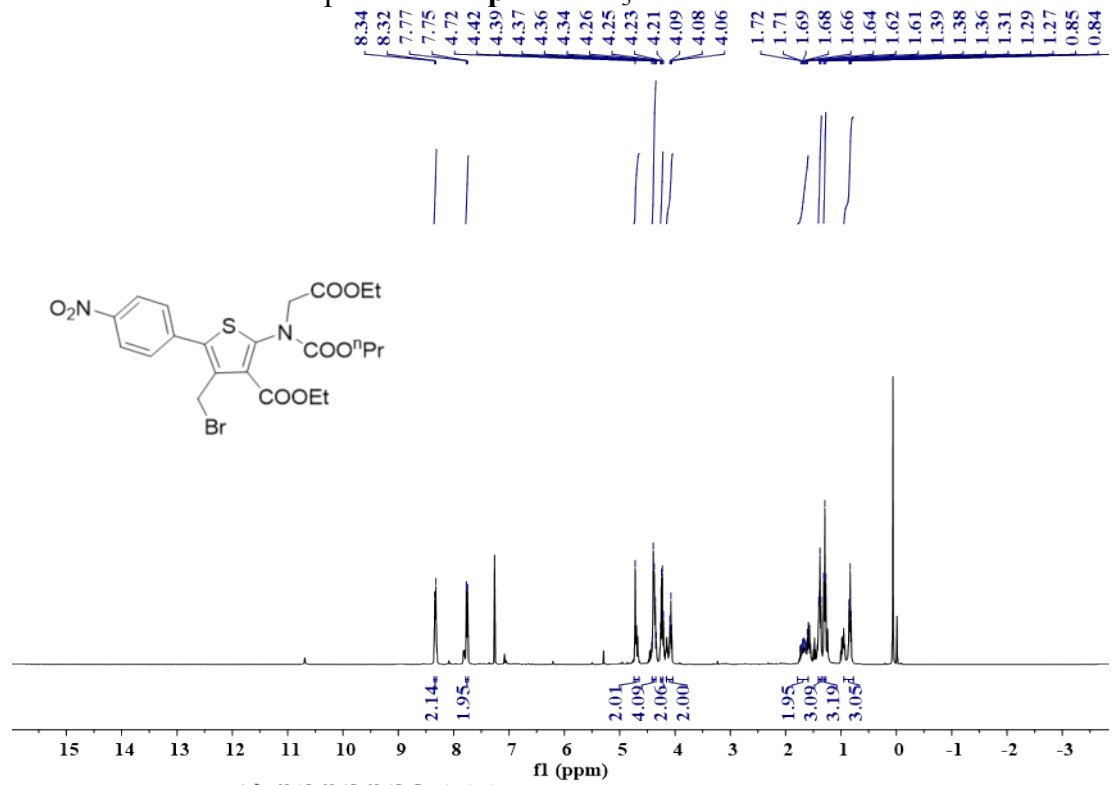




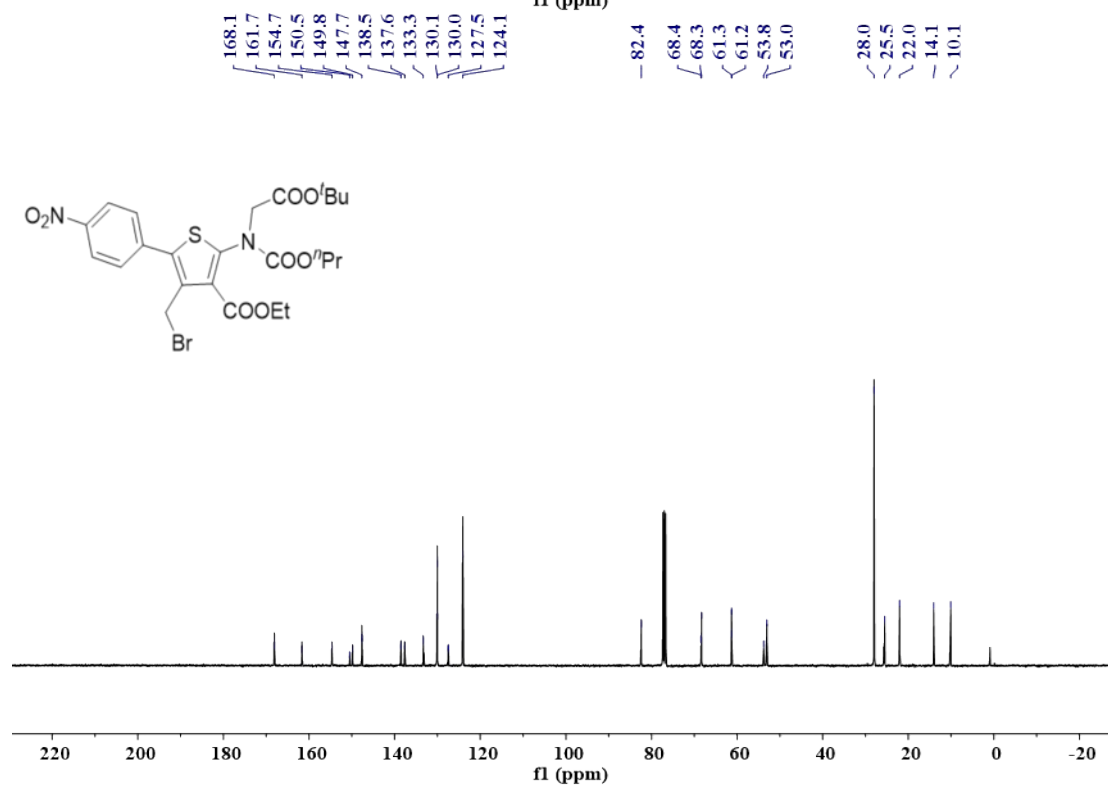
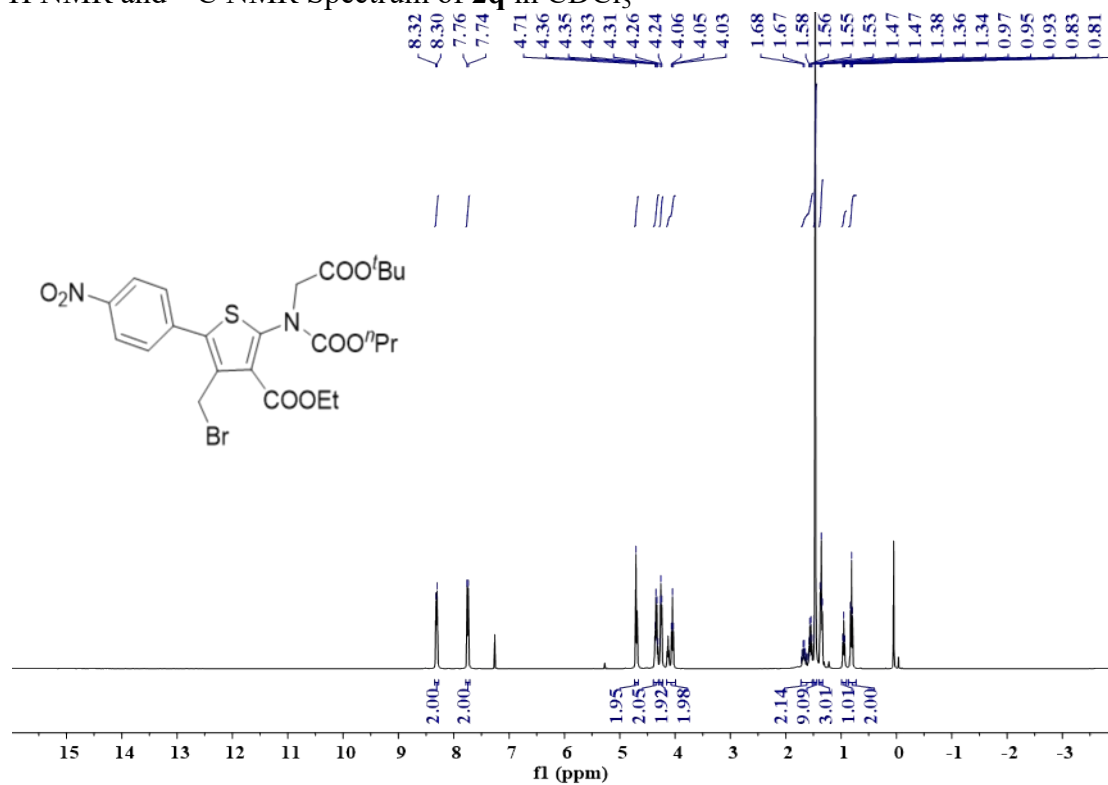
¹H NMR and ¹³C NMR Spectrum of **2n** in CDCl₃



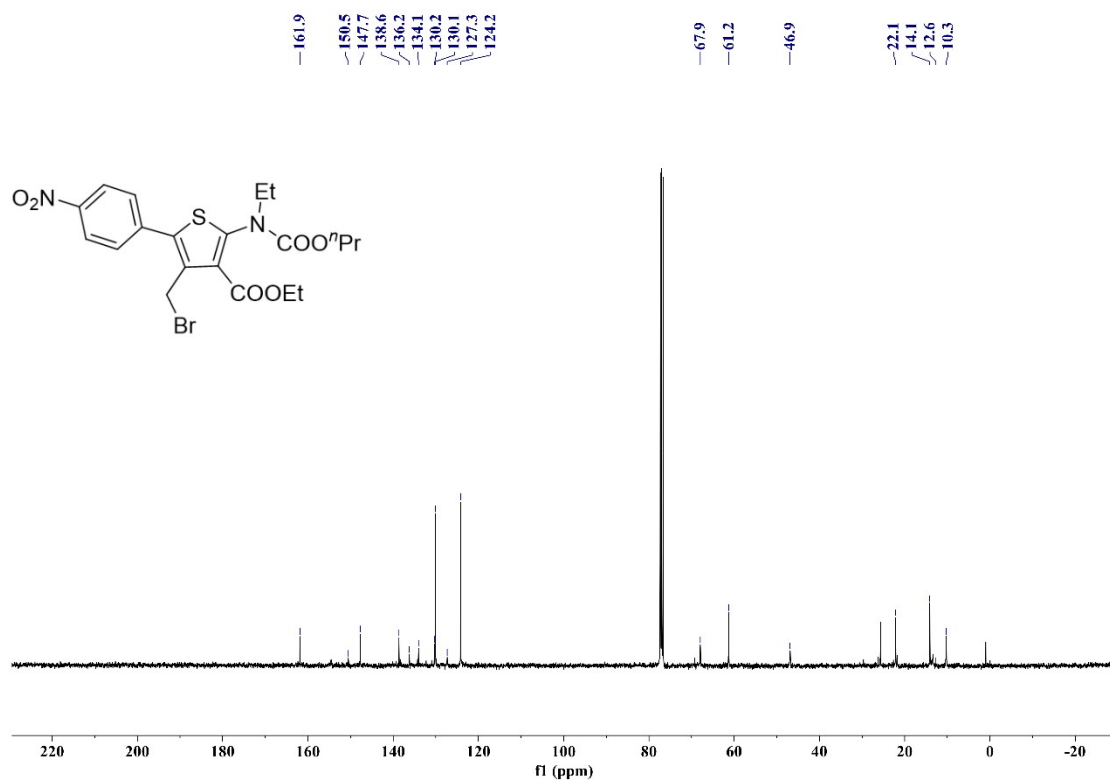
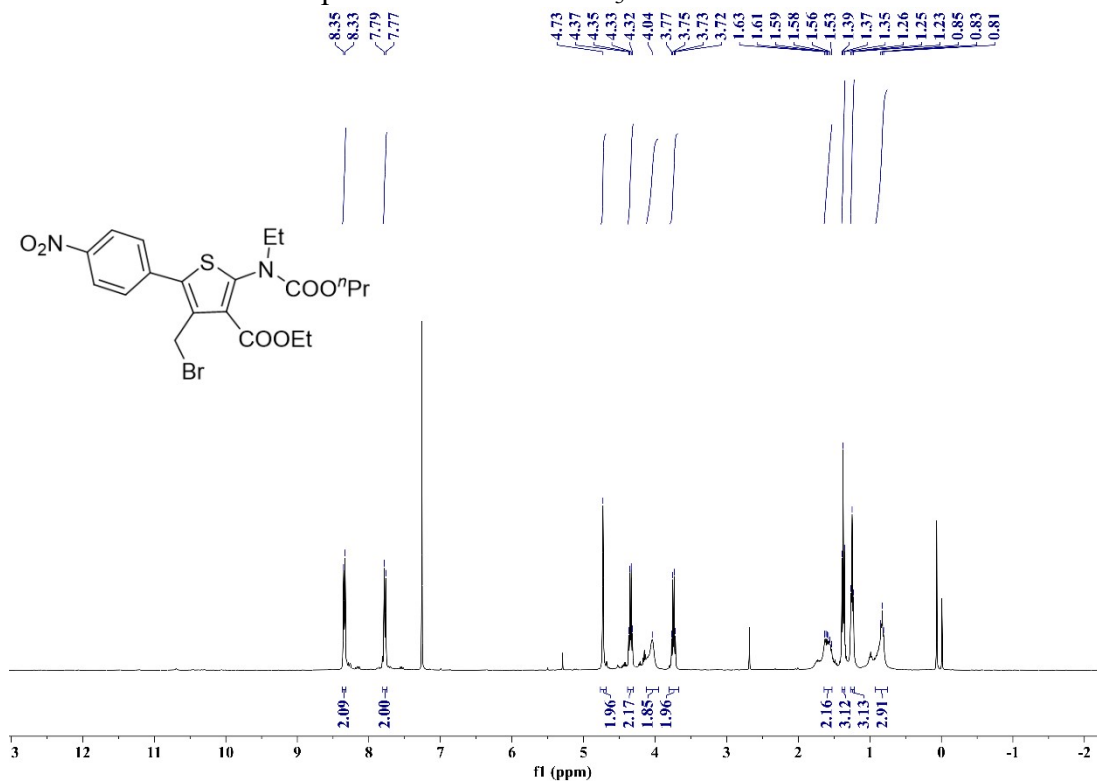
¹H NMR and ¹³C NMR Spectrum of **2p** in CDCl₃



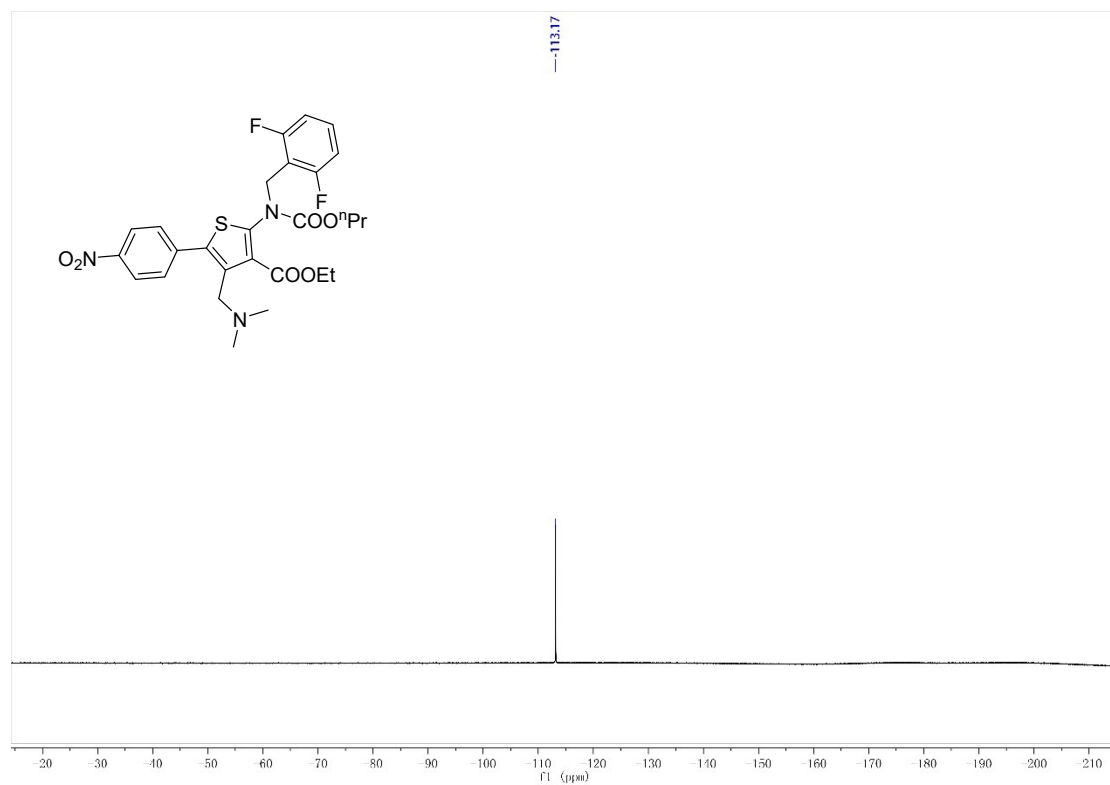
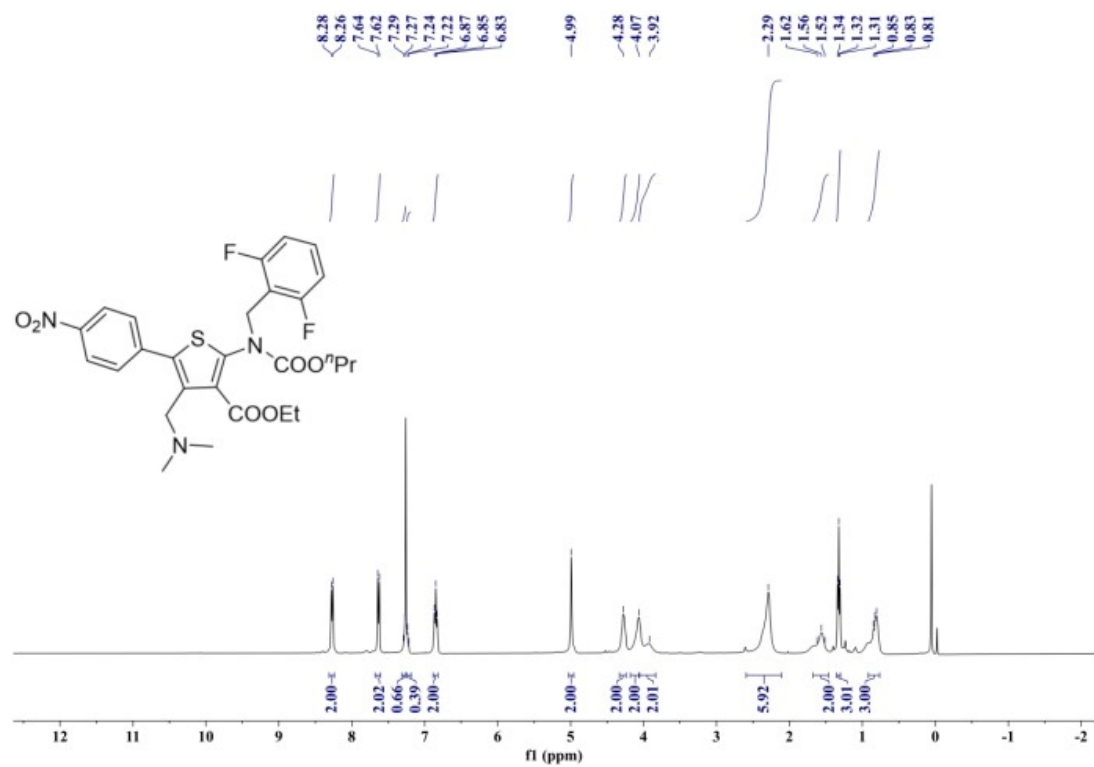
^1H NMR and ^{13}C NMR Spectrum of **2q** in CDCl_3



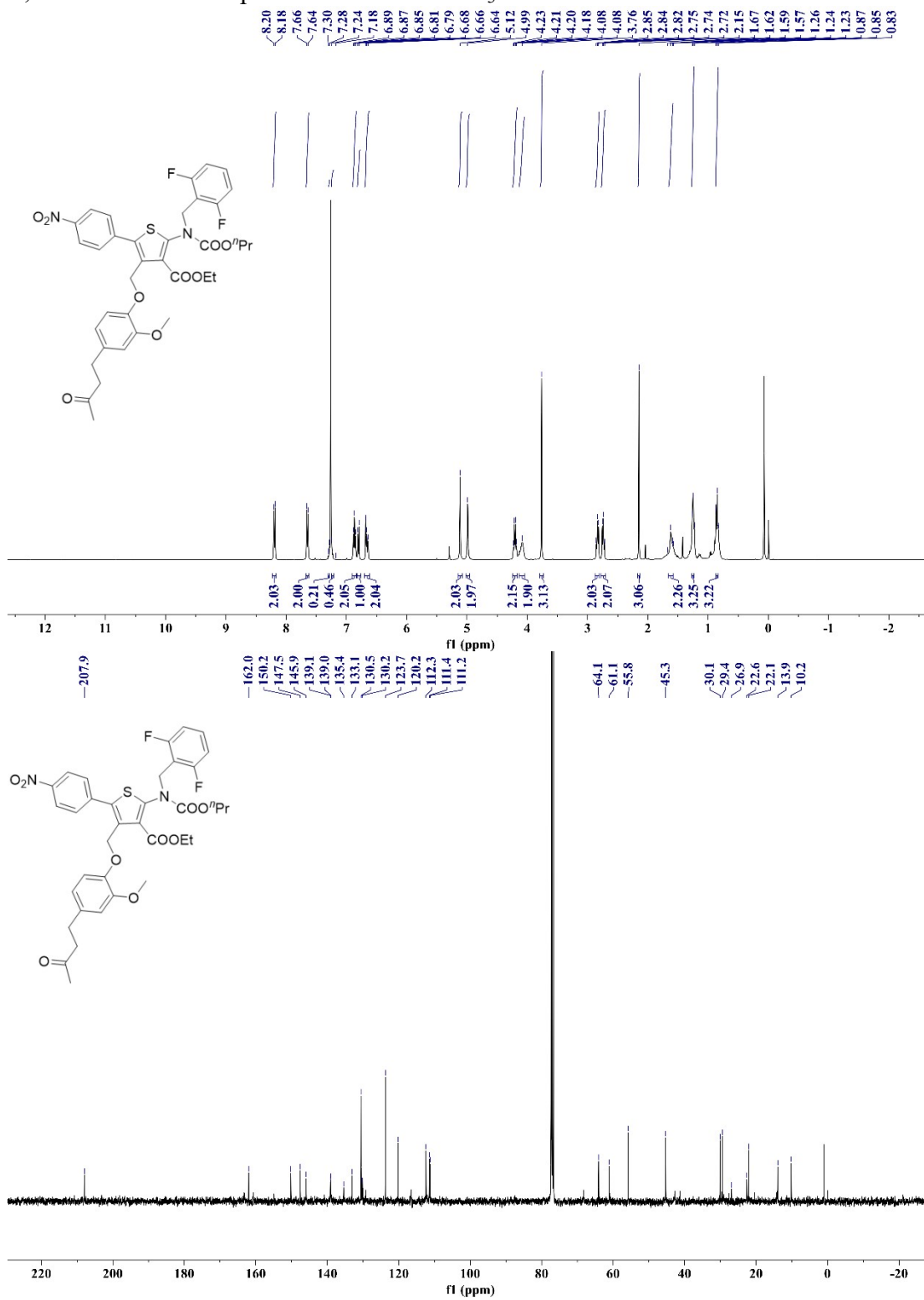
¹H NMR and ¹³C NMR Spectrum of **2r** in CDCl₃

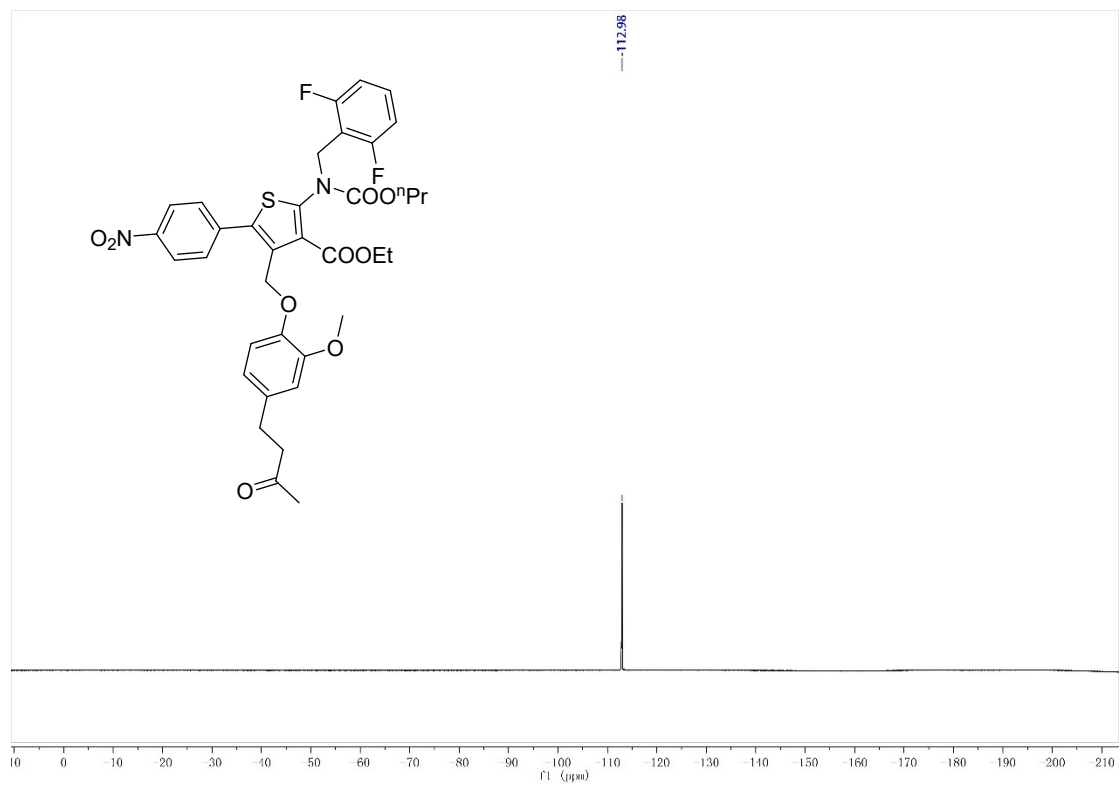


^1H and ^{19}F NMR Spectrum of **3a** in CDCl_3

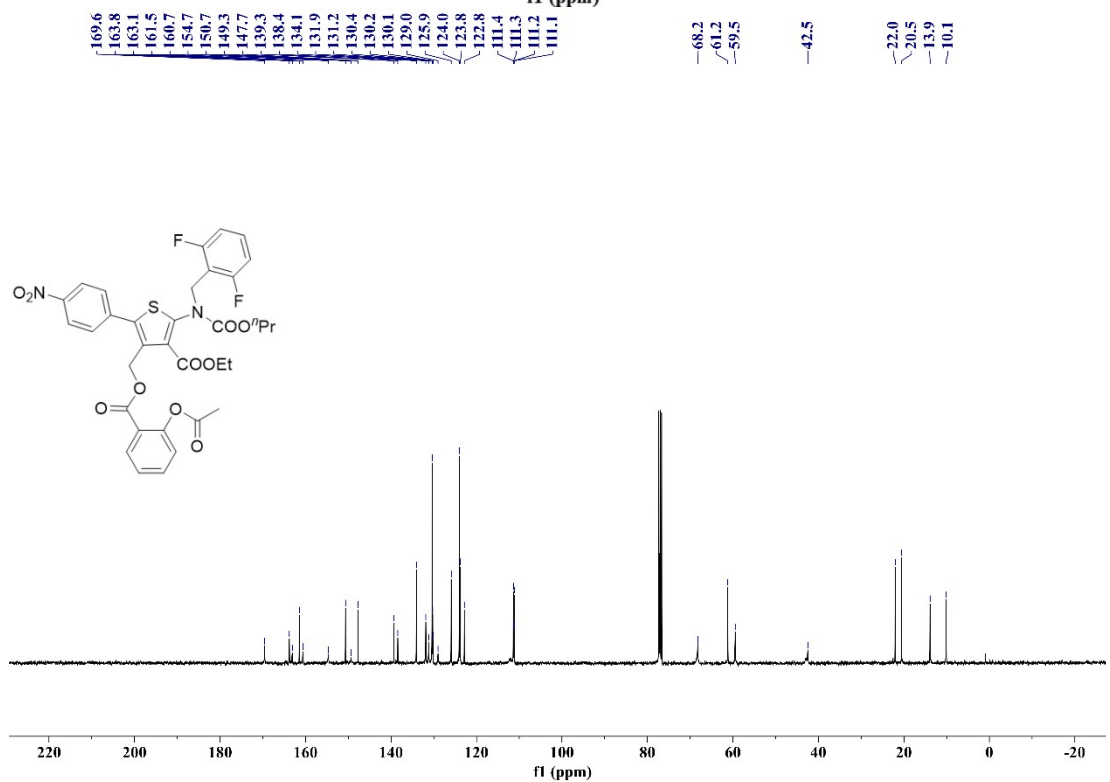
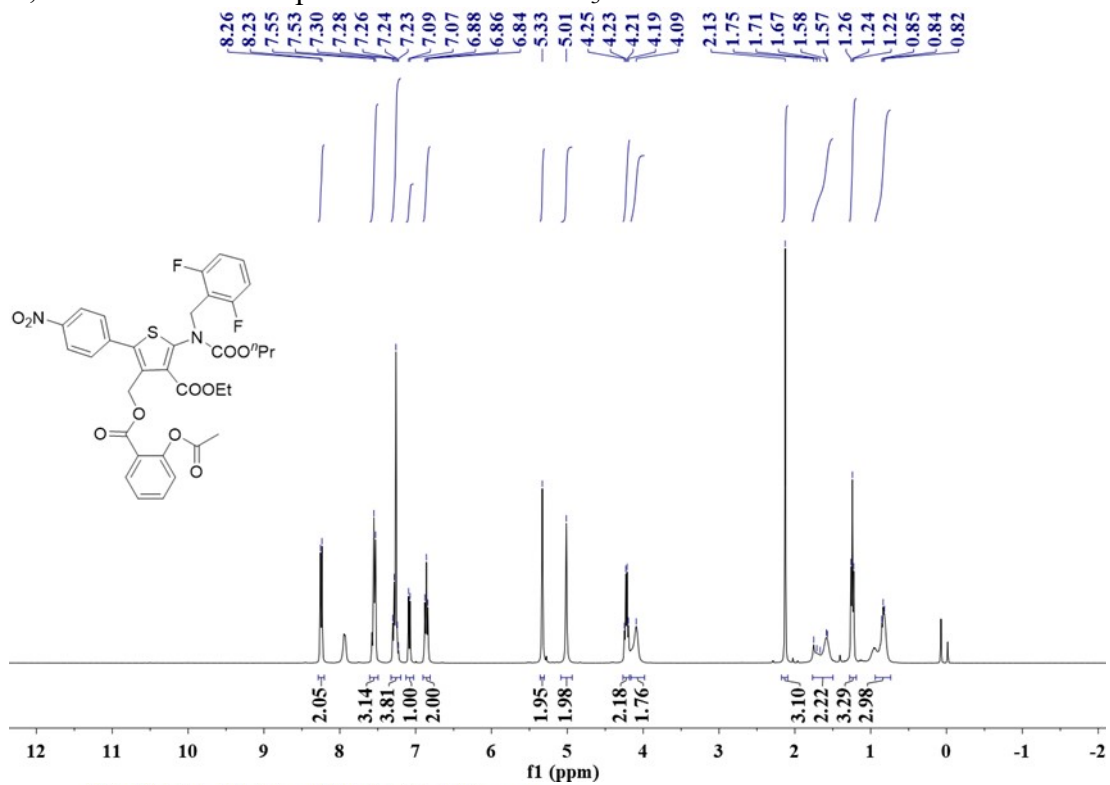


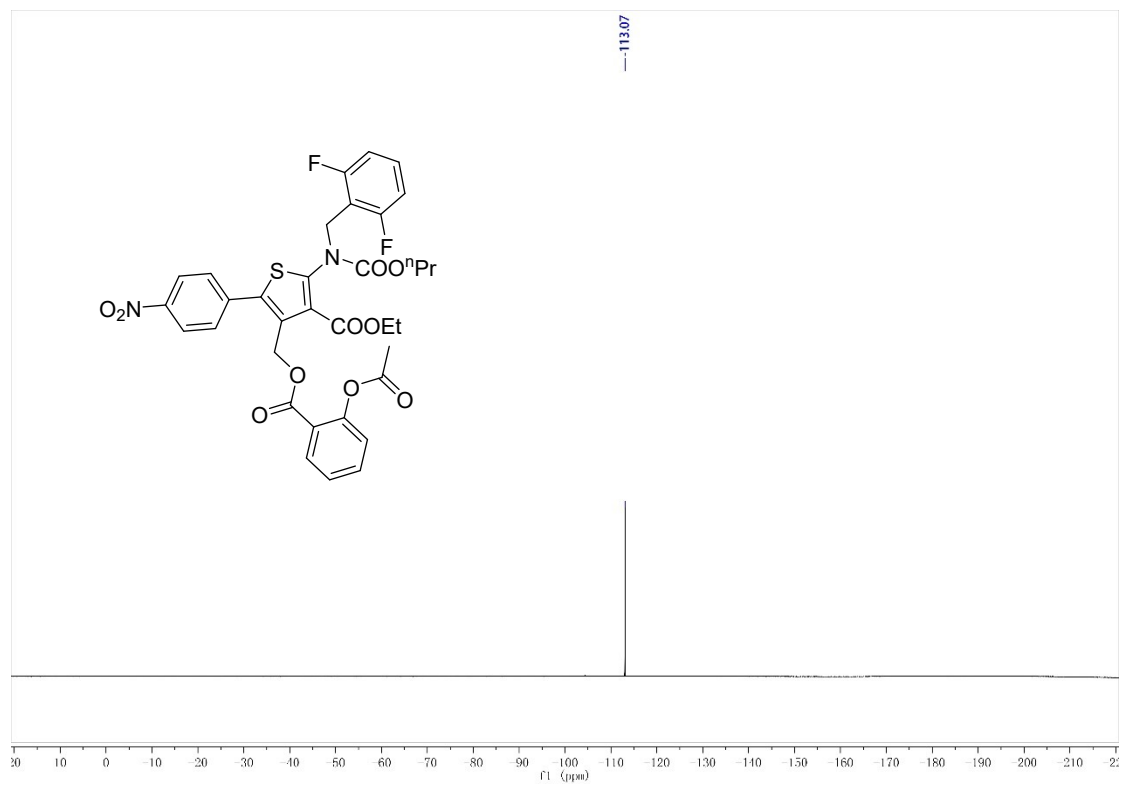
^1H , ^{13}C and ^{19}F NMR Spectrum of **4a** in CDCl_3





^1H , ^{13}C and ^{19}F NMR Spectrum of **5a** in CDCl_3





^1H , ^{13}C and ^{19}F NMR Spectrum of **6a** in CDCl_3

