

Supporting information for

Diels-Alder Reactions between Cyclopentadiene Analogs and Benzoquinone in Water and Application in Synthesis of Polycyclic Cage Compounds

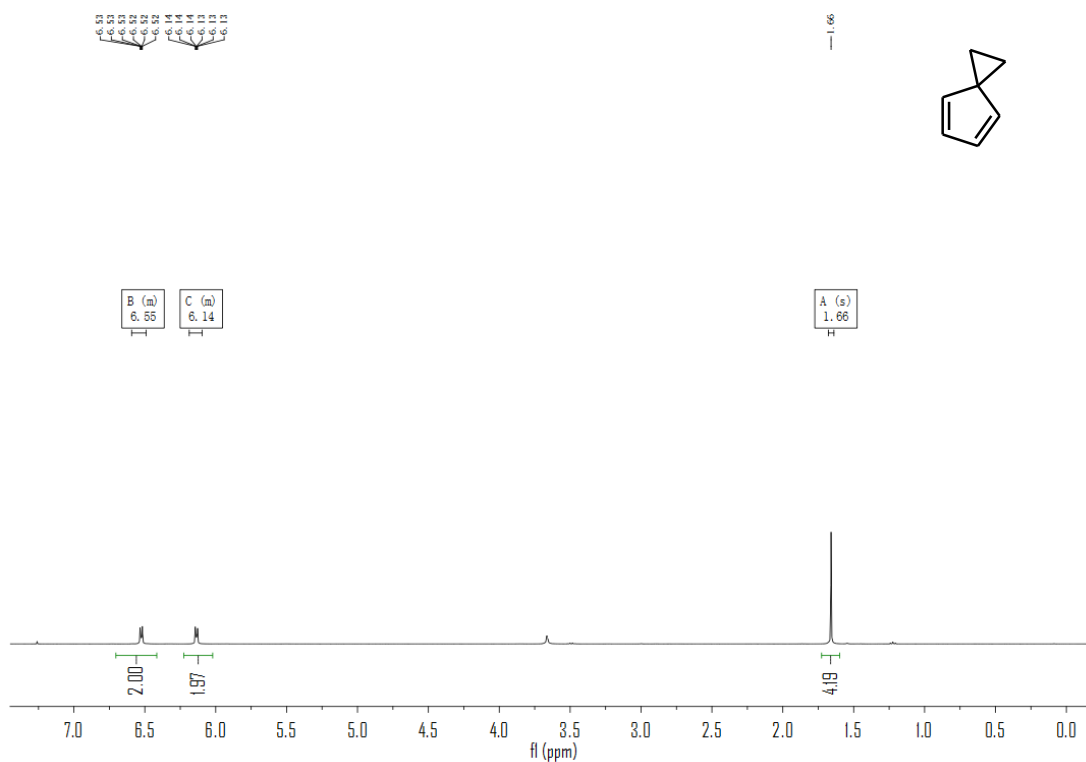
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^a Engineering and Technology Research Institute of Lunan Coal Chemical, Zaozhuang University, Beian Road, Zaozhuang 277160, Shandong Province, China.

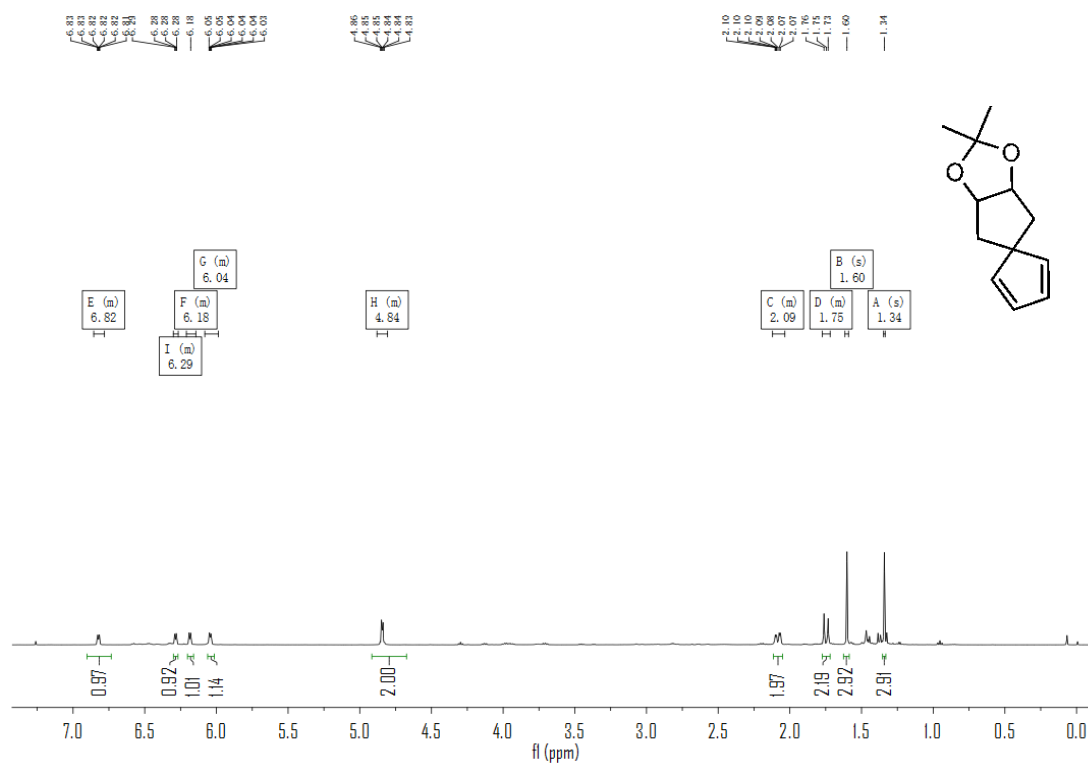
^b College of Chemistry, Chemical Engineering and Materials Science, Zaozhuang University, Beian Road, Zaozhuang 277160, Shandong Province, China.

E-mail: 673230386@qq.com

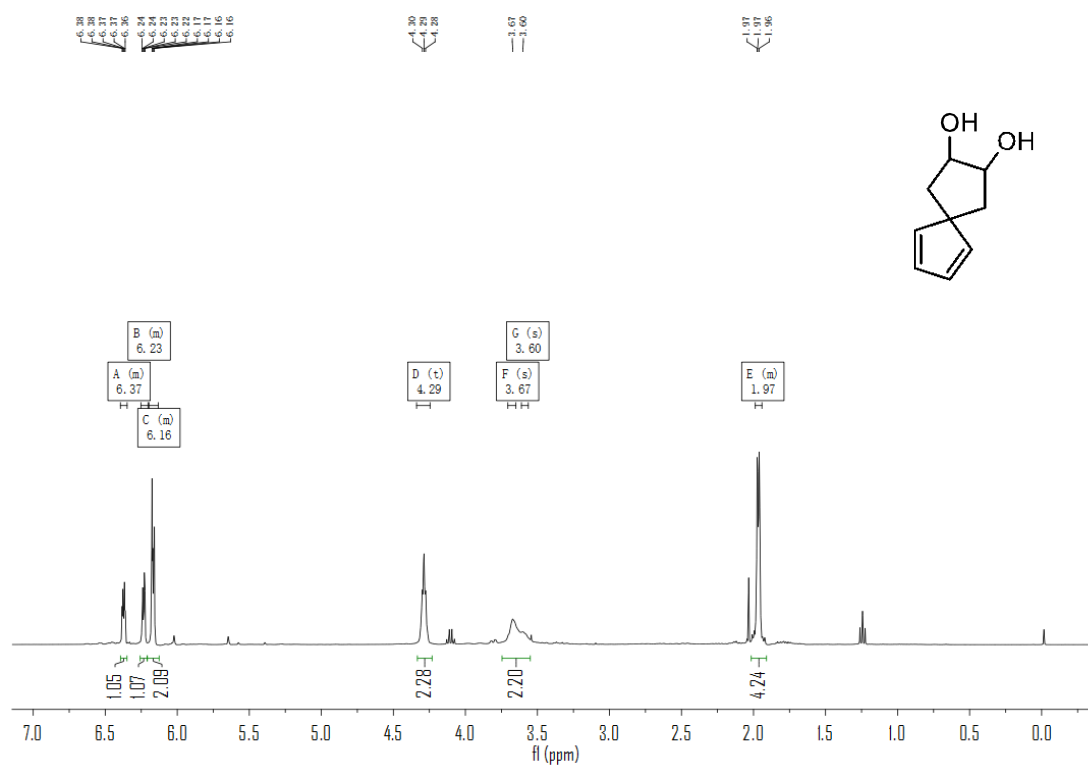
¹H NMR spectra of 2



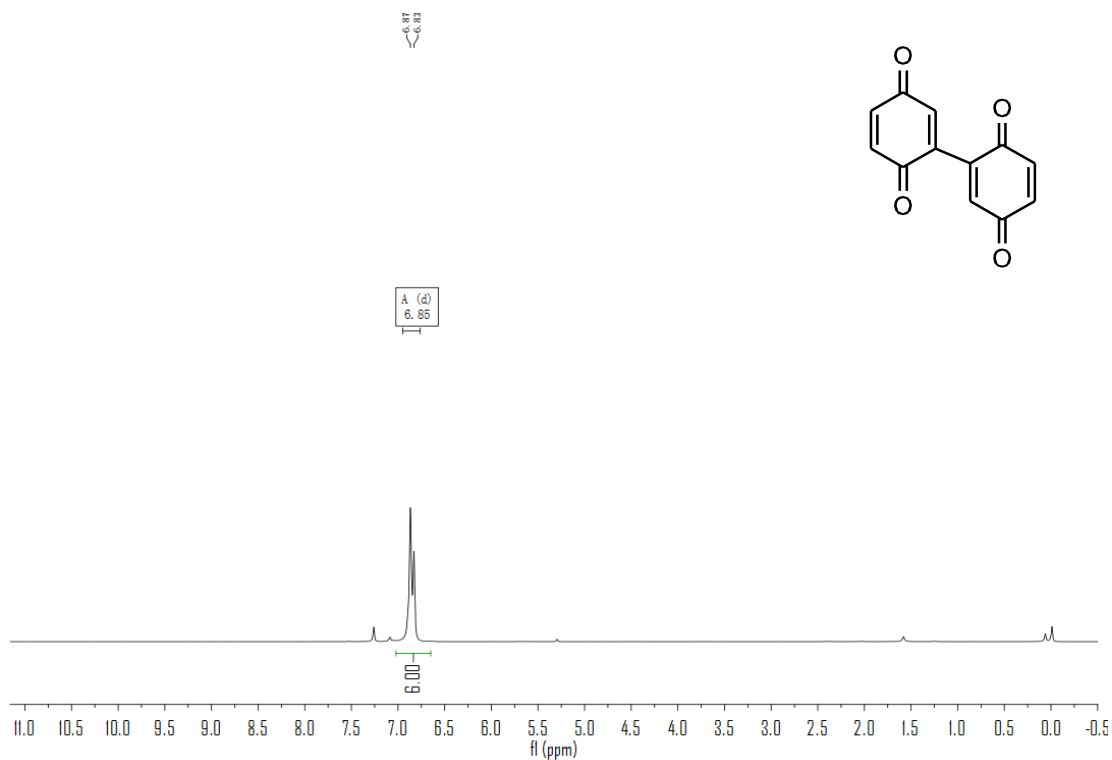
¹H NMR spectra of 4



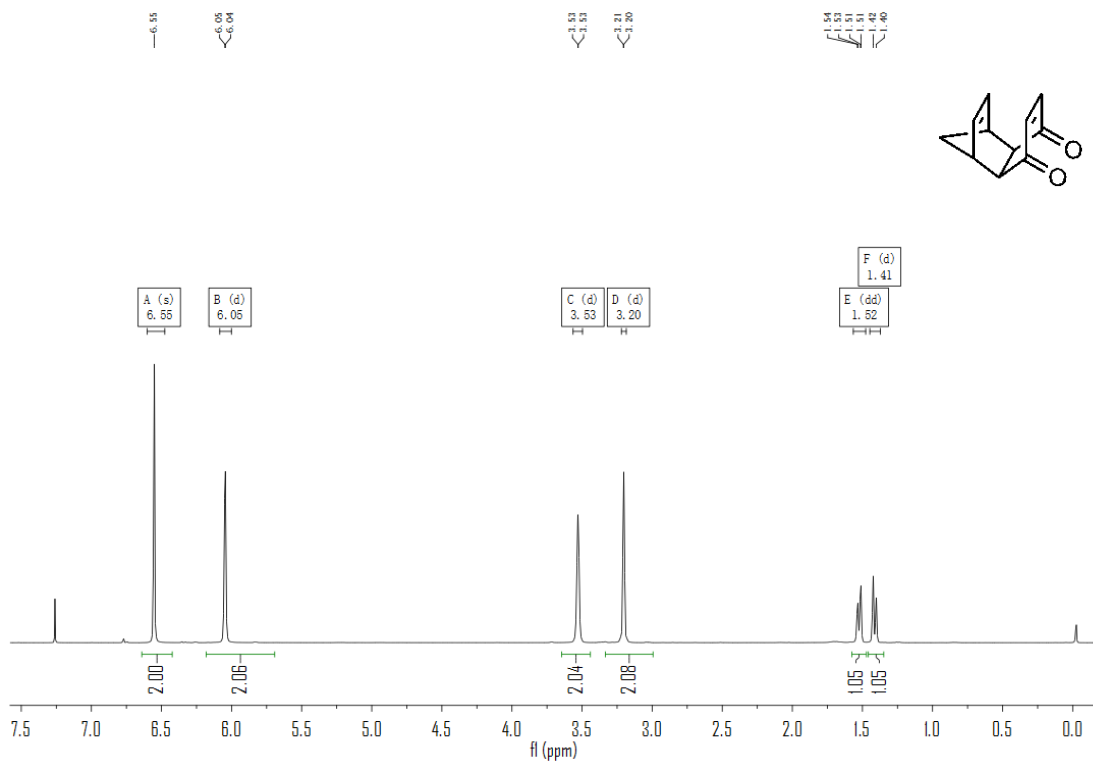
¹H NMR spectra of 5



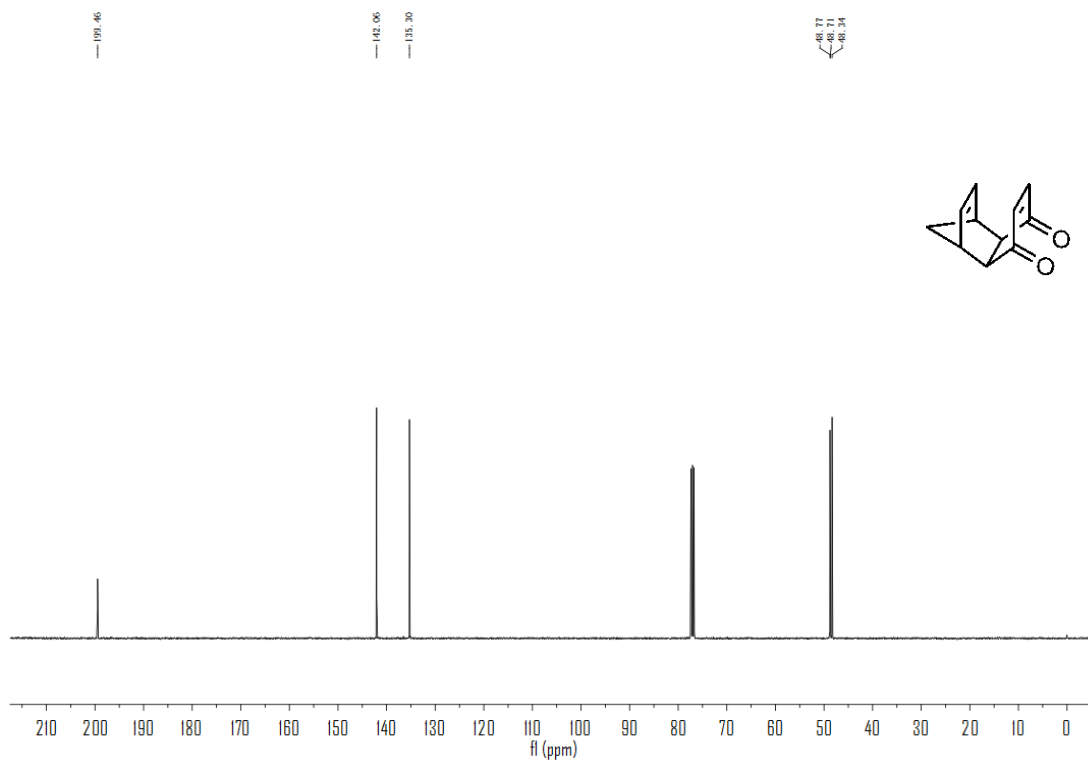
^1H NMR spectra of 2,2'-bi(p-benzoquinone)



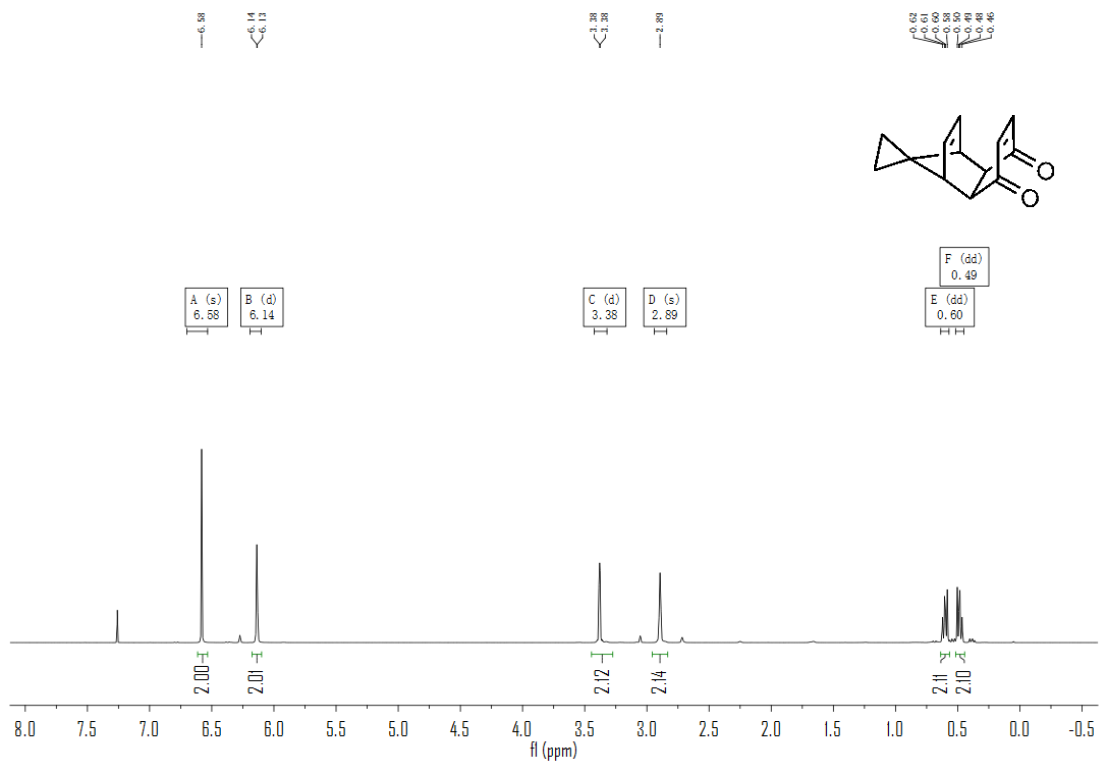
^1H NMR spectra of 6



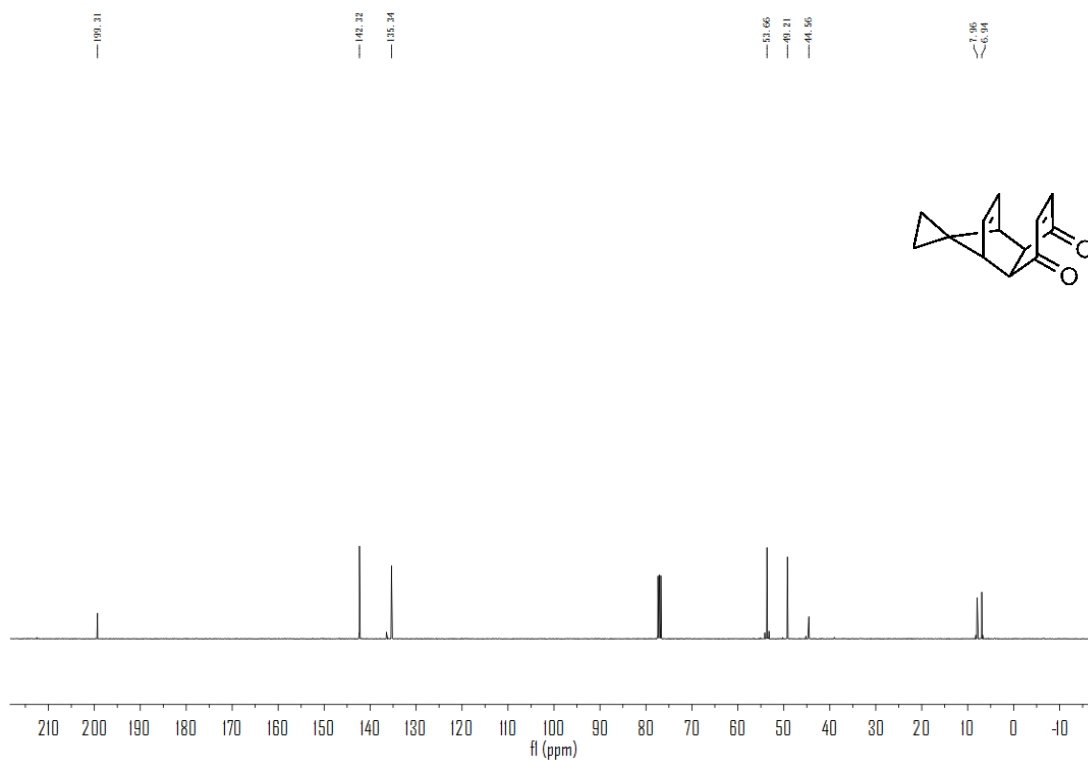
¹³C NMR spectra of 6



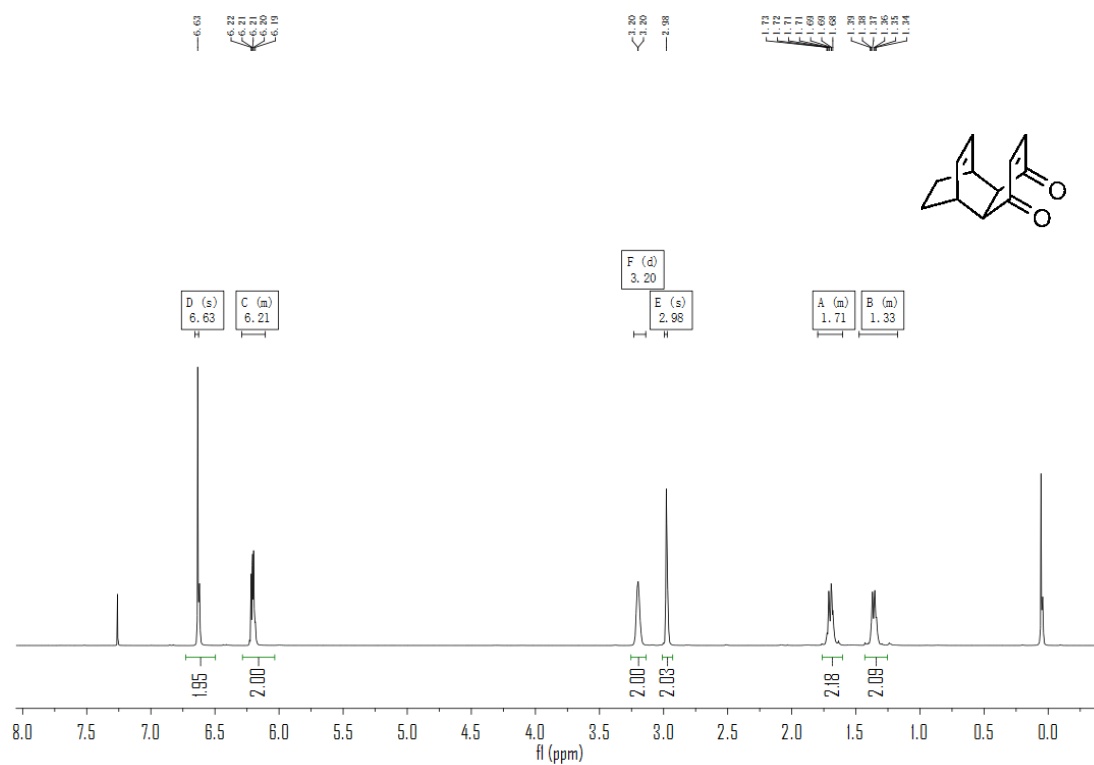
¹H NMR spectra of 7



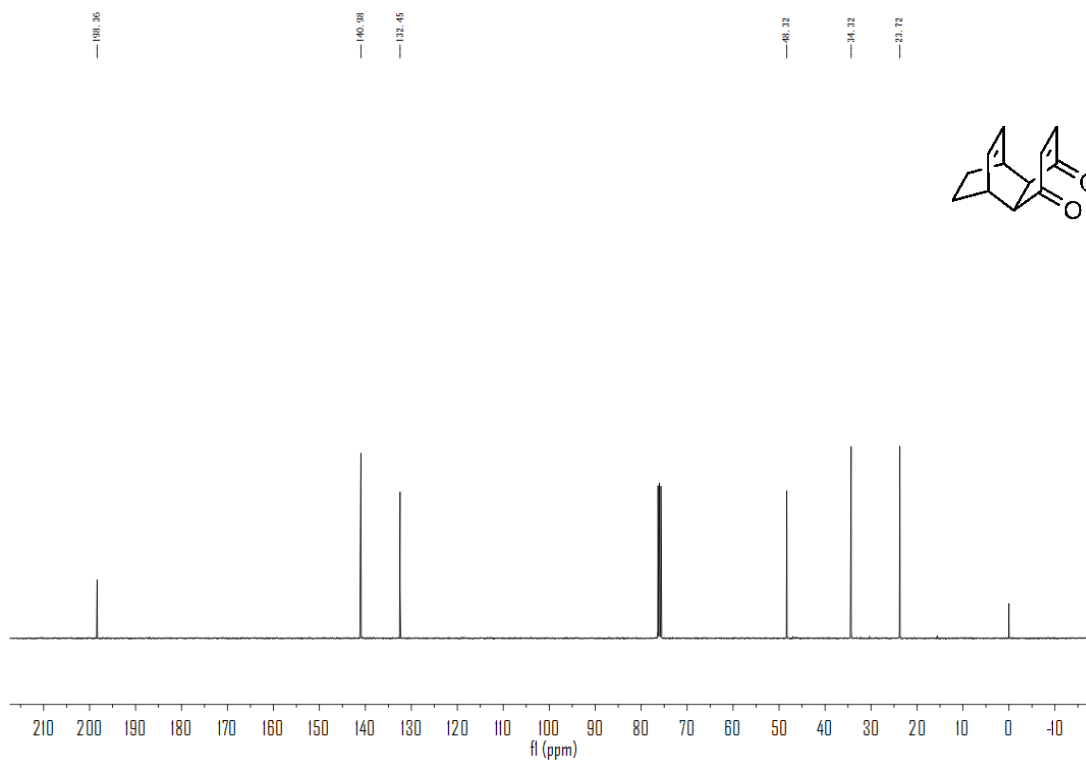
¹³C NMR spectra of 7



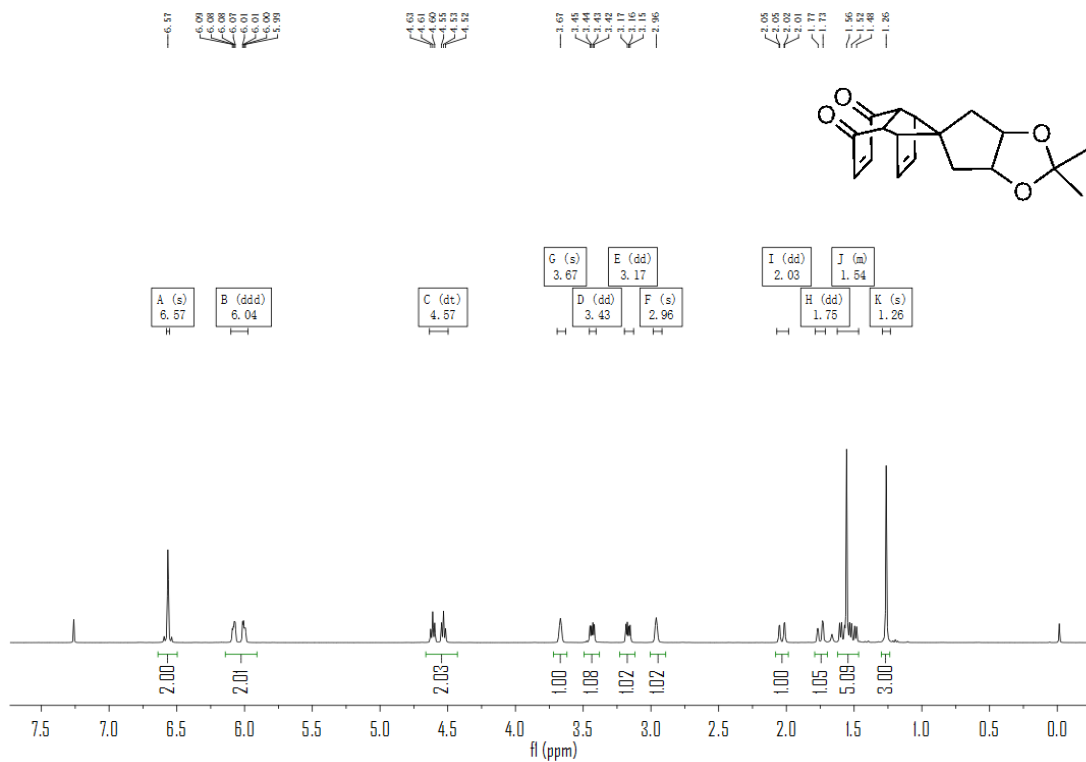
¹H NMR spectra of 8



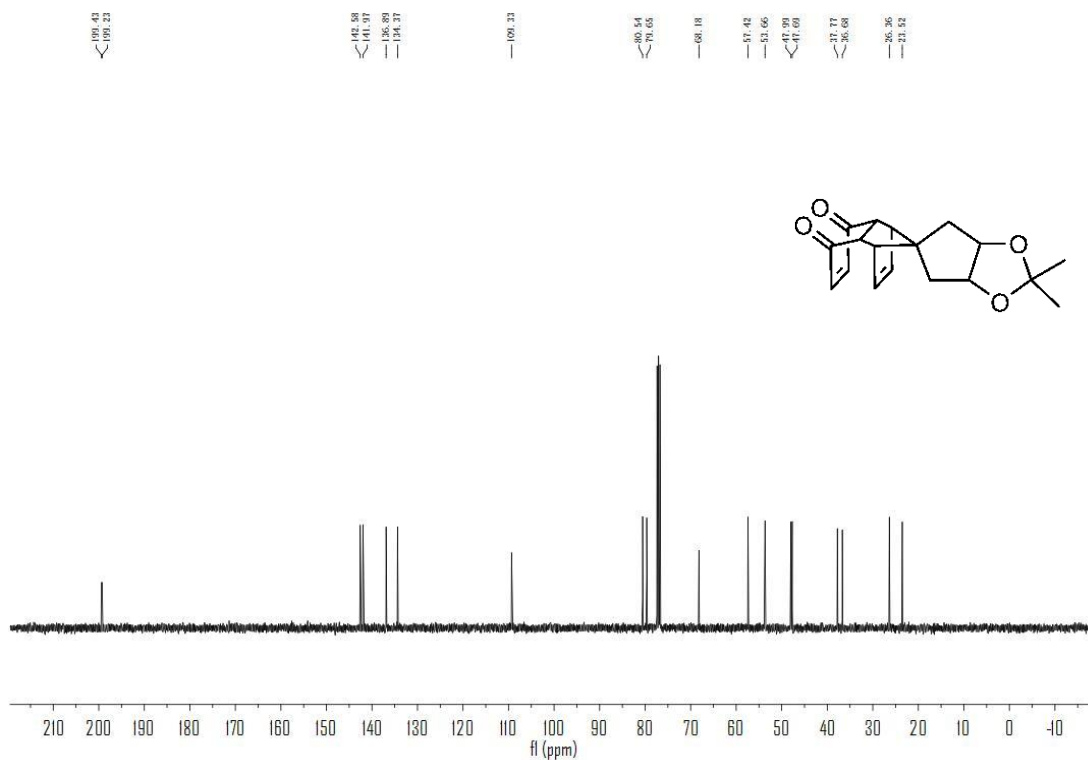
¹³C NMR spectra of 8



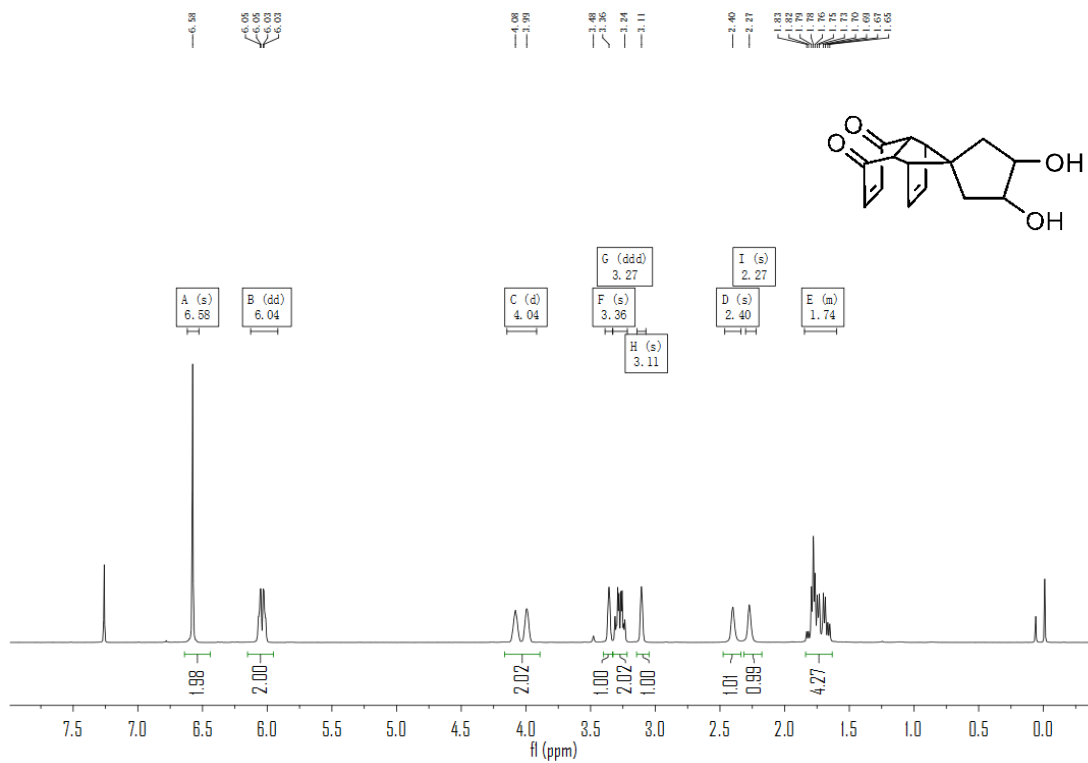
¹H NMR spectra of 9



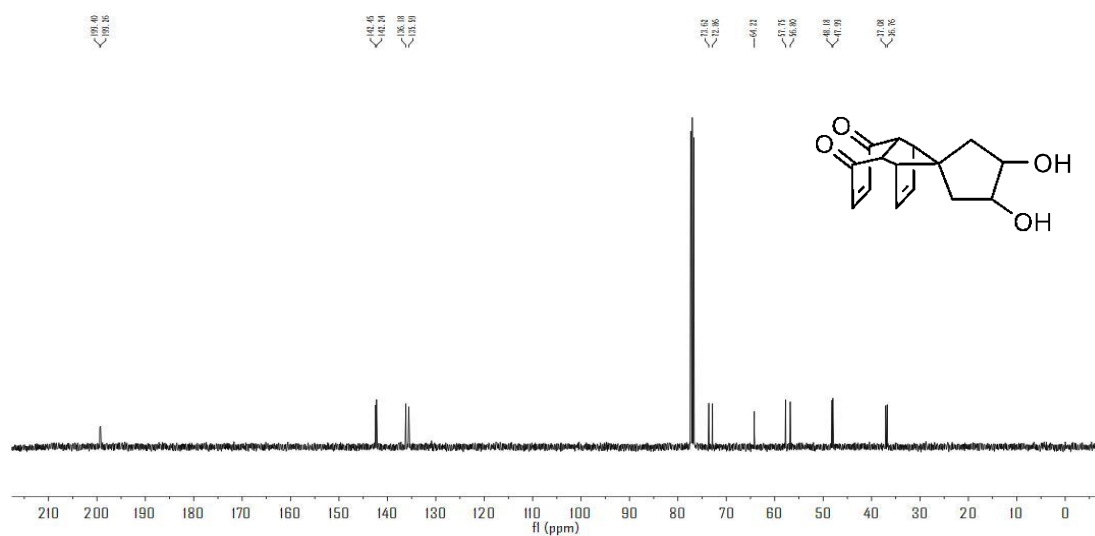
¹³C NMR spectra of 9



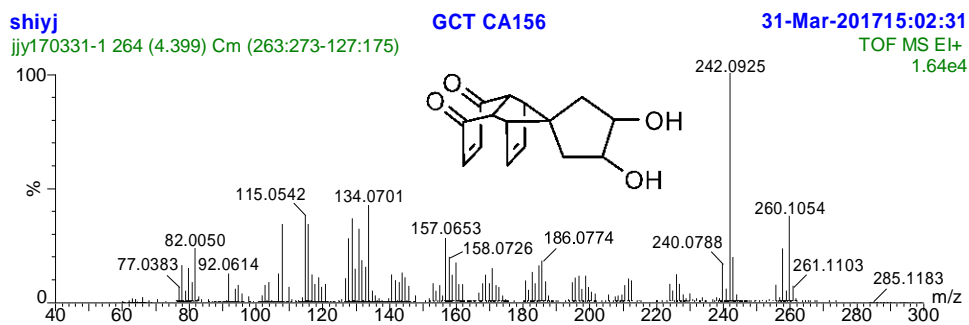
¹H NMR spectra of 10



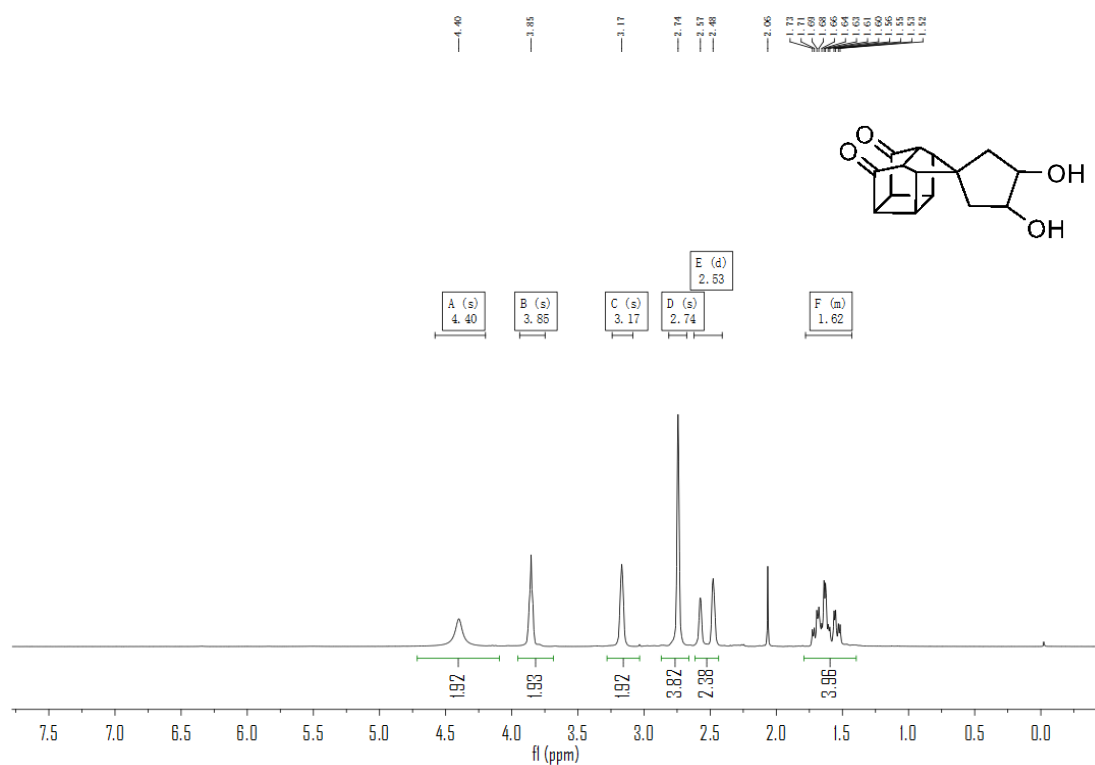
¹³C NMR spectra of 10



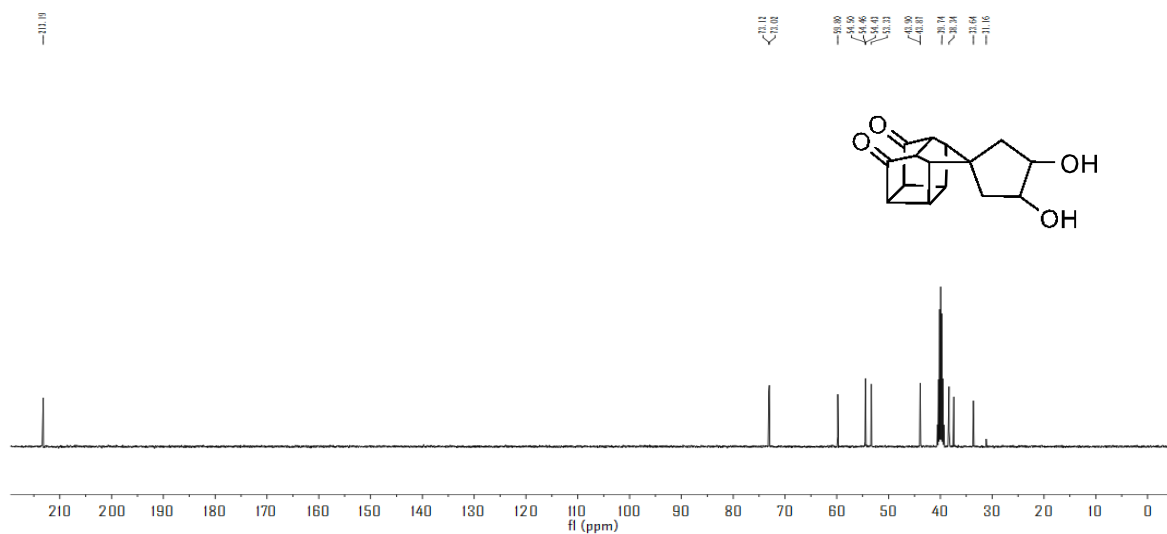
MS of 10



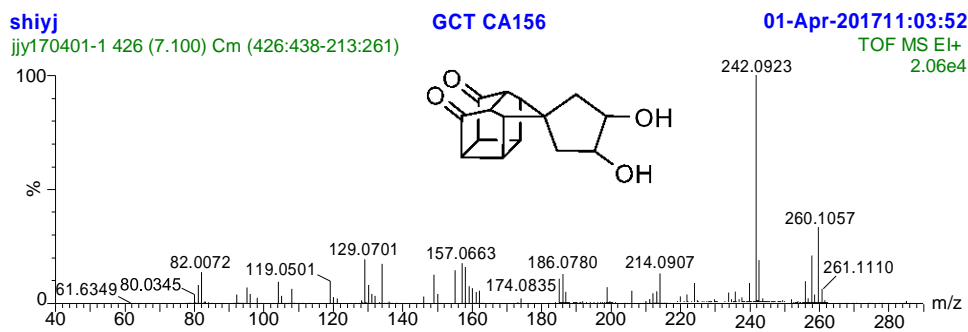
¹H NMR spectra of 11



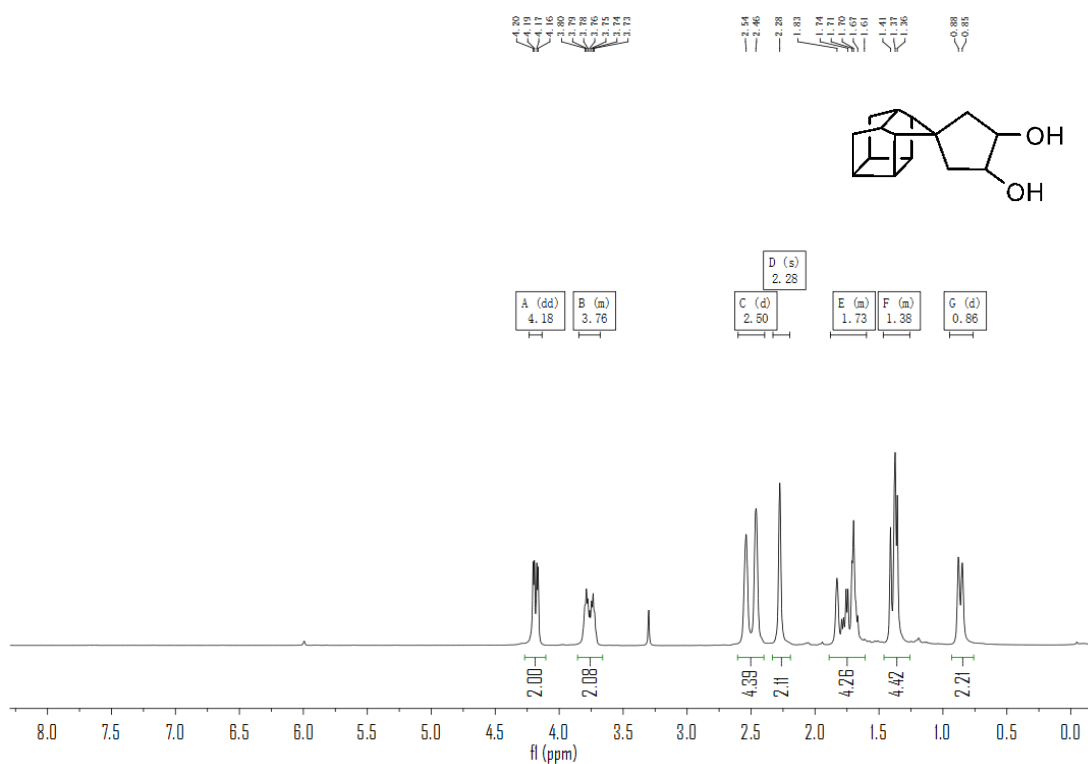
¹³C NMR spectra of 11



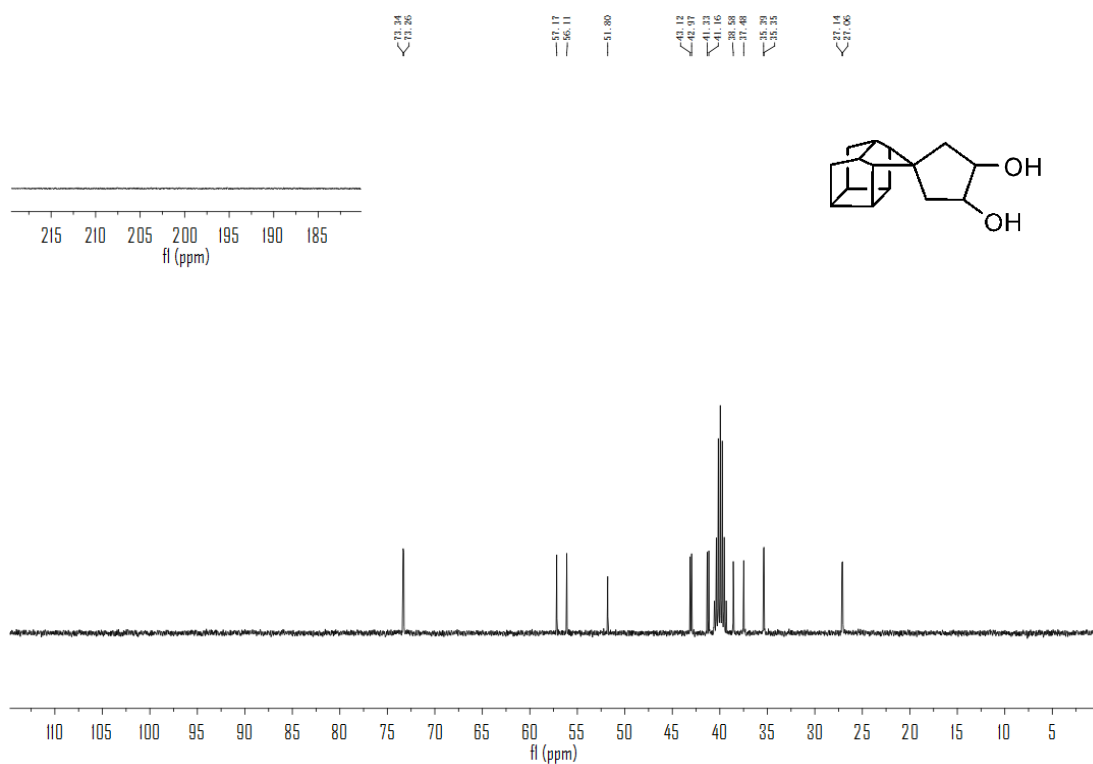
MS of 11



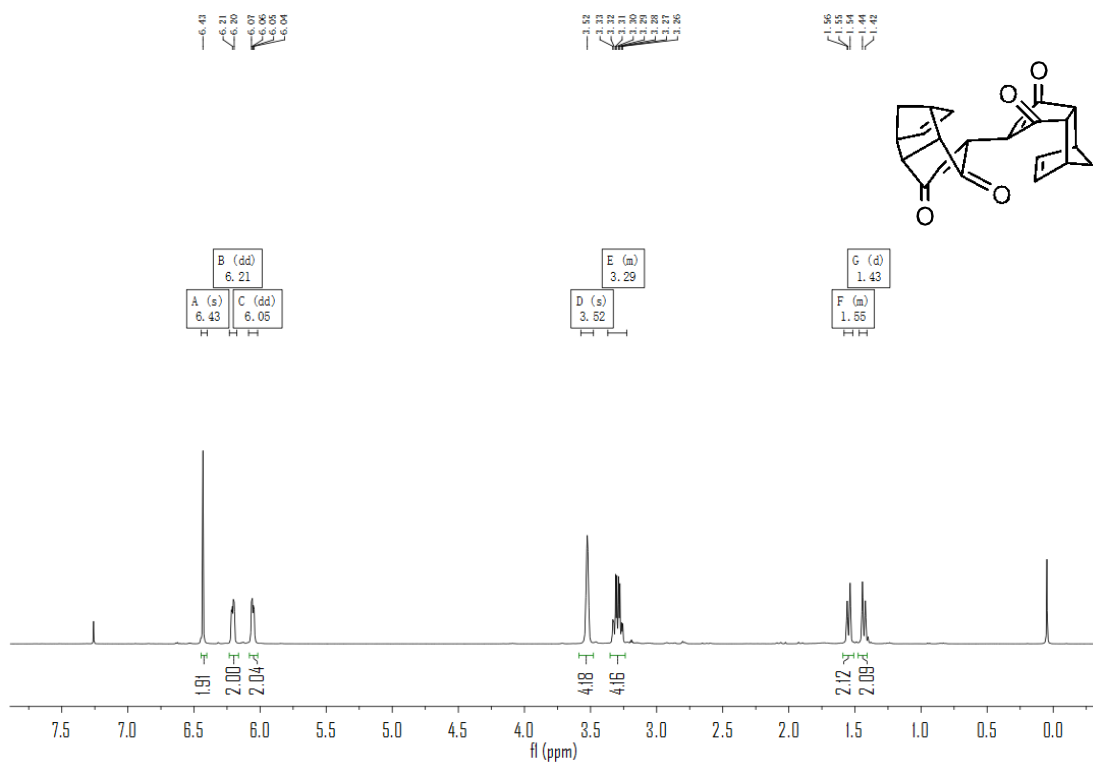
¹H NMR spectra of 12



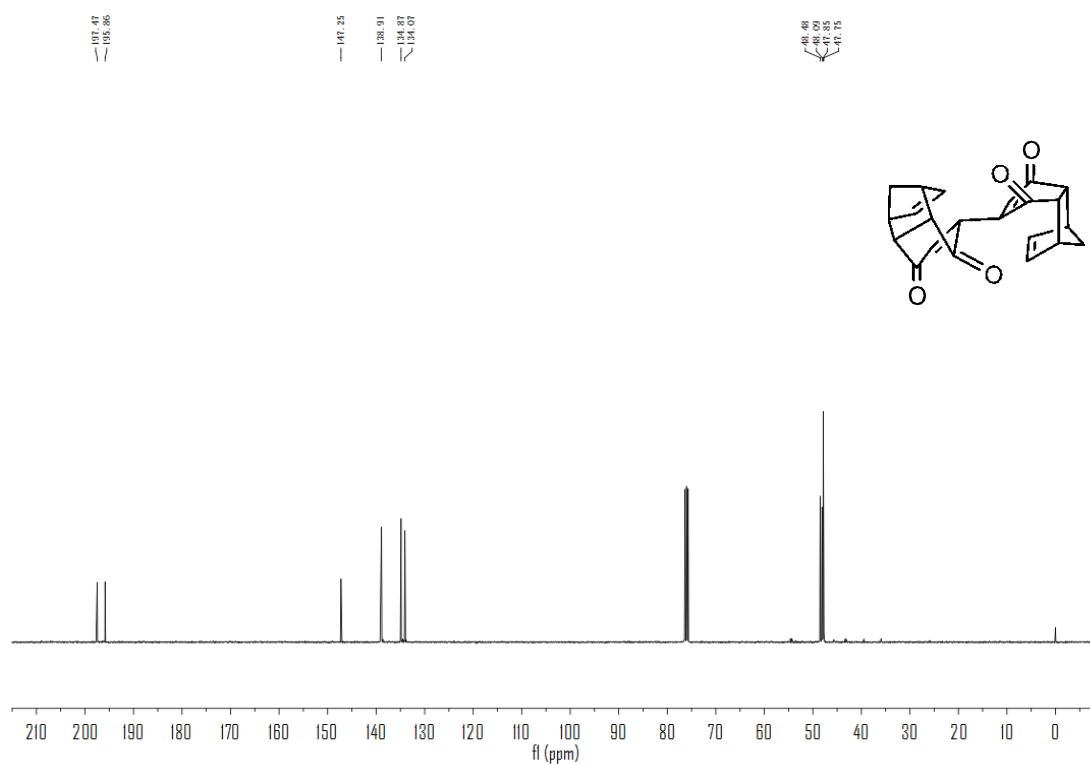
¹³C NMR spectra of 12



¹H NMR spectra of D-A-1

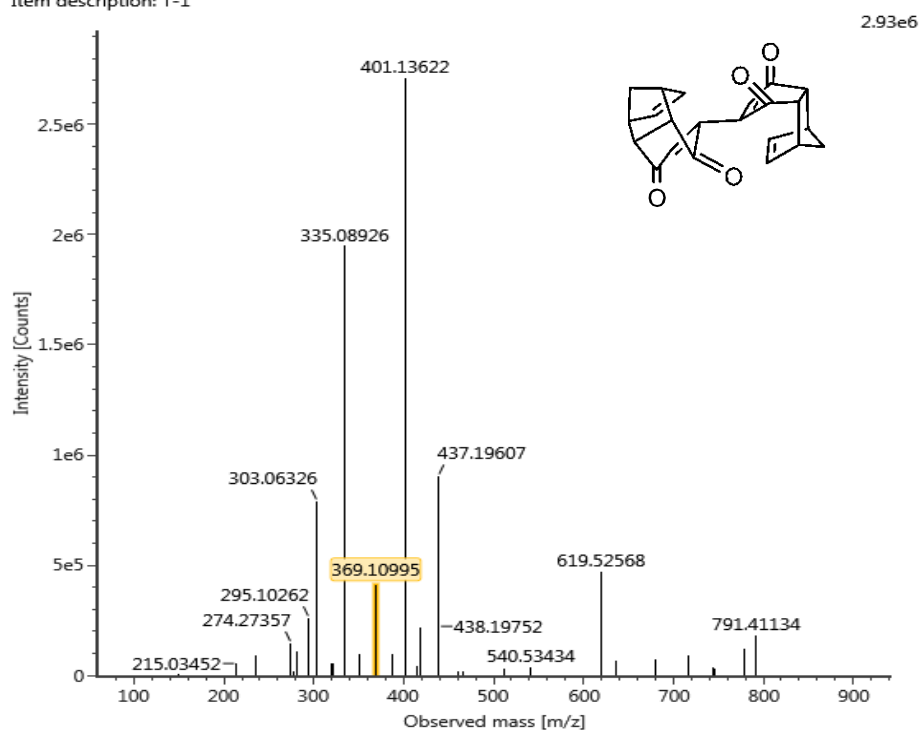


¹³C NMR spectra of D-A-1

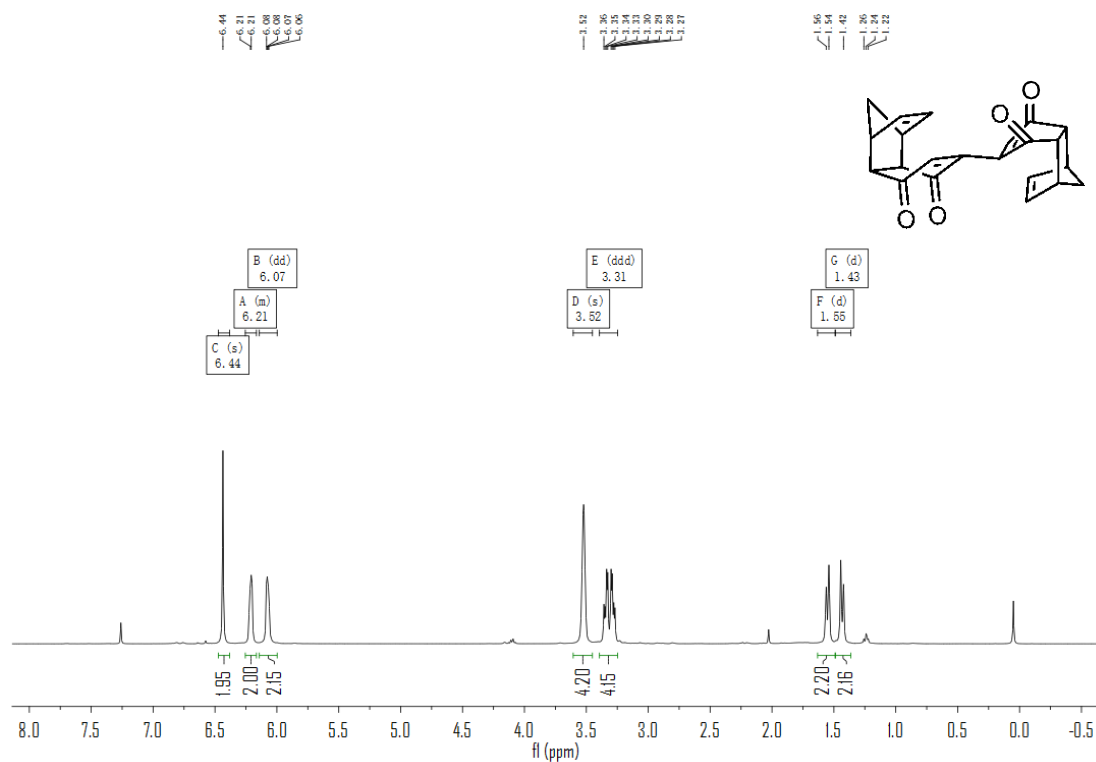


MS of D-A-1

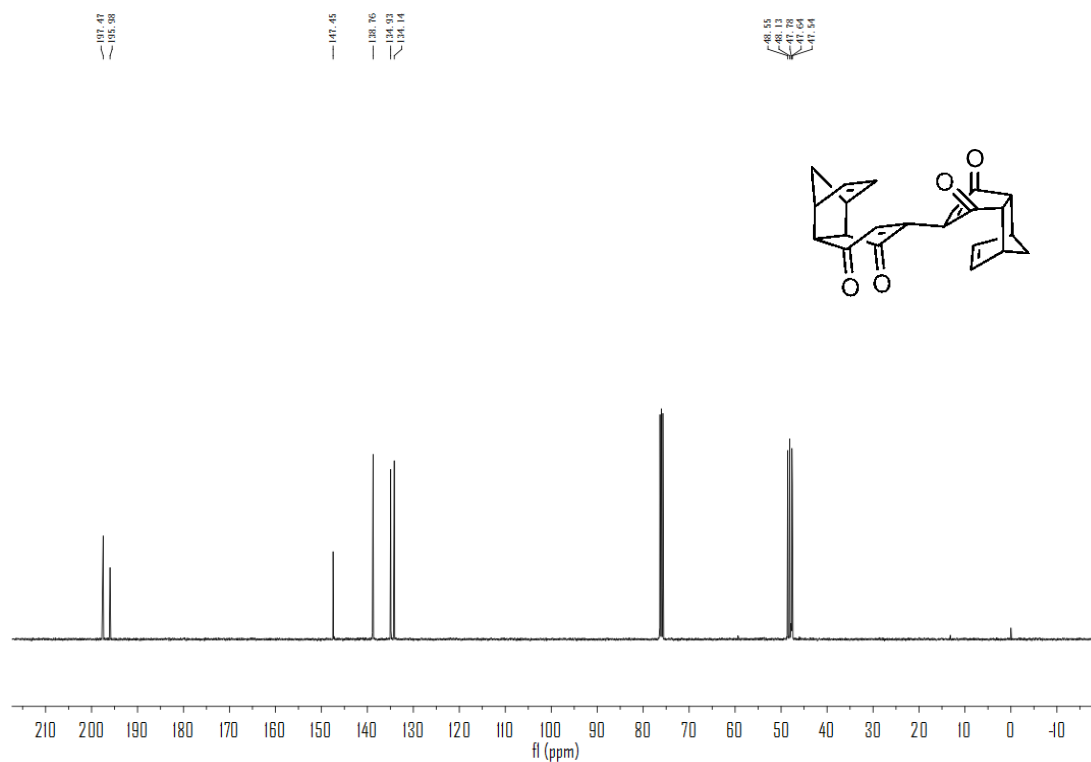
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Item description: T-1



¹H NMR spectra of D-A-2



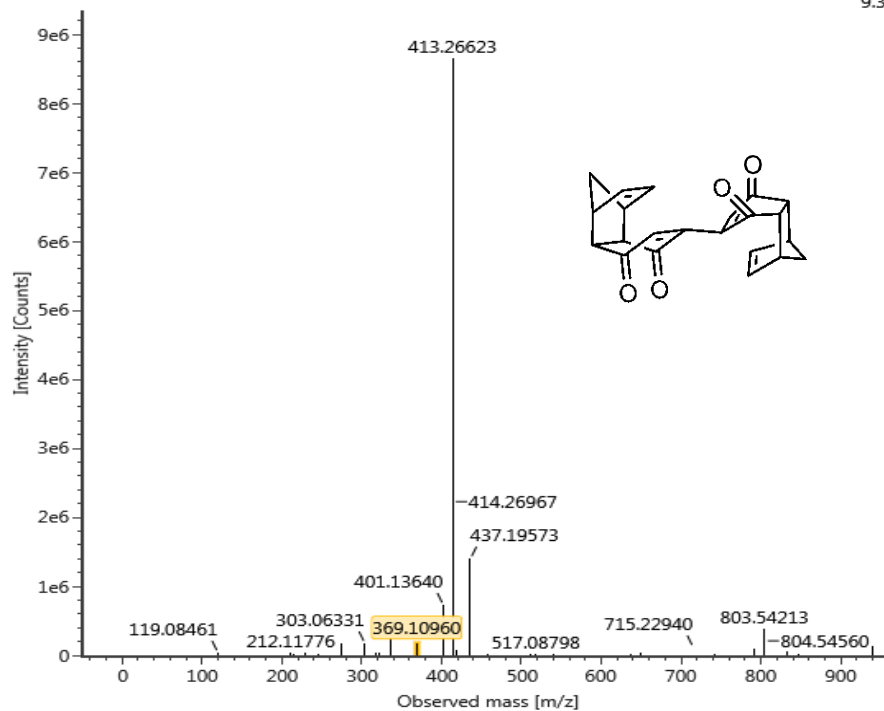
¹³C NMR spectra of D-A-2



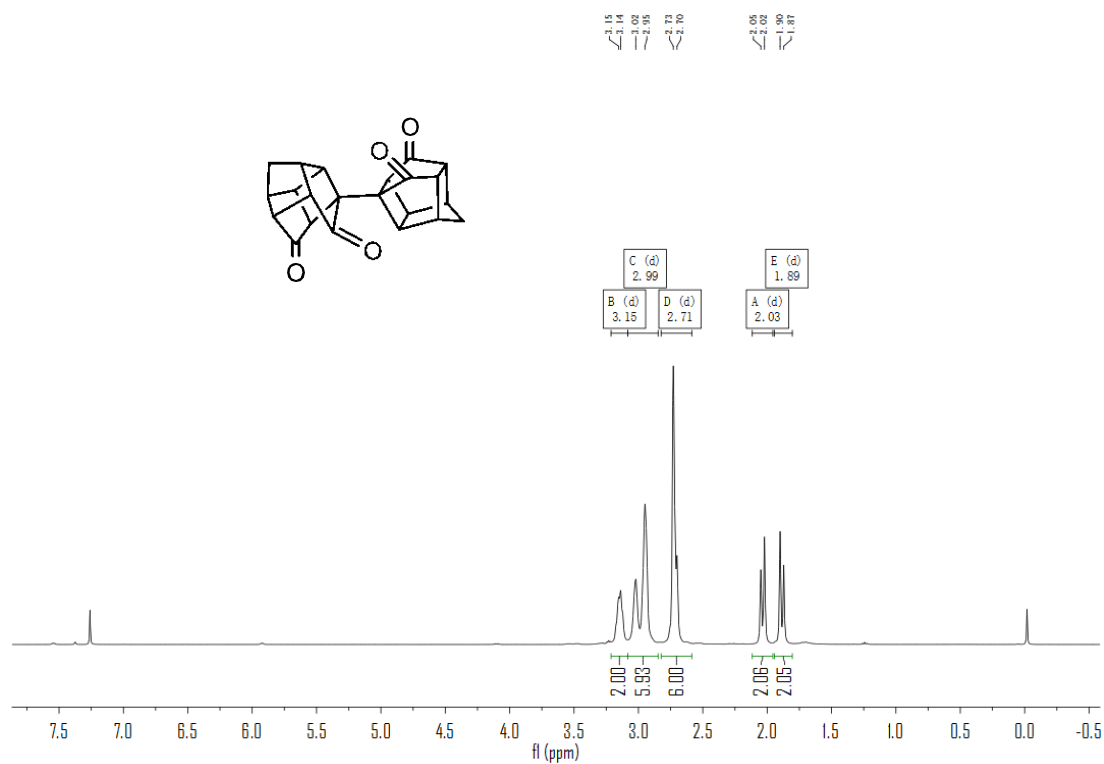
MS of D-A-2

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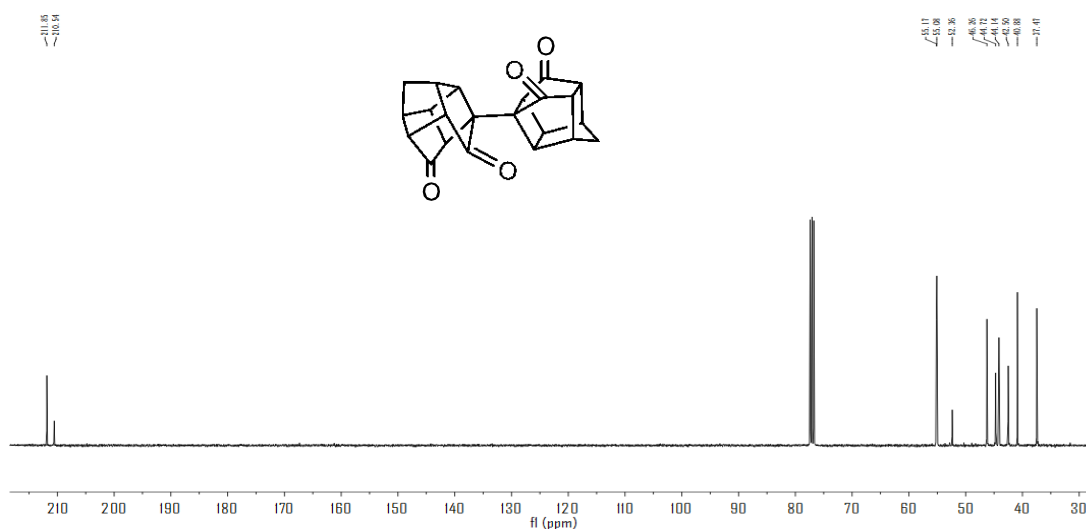
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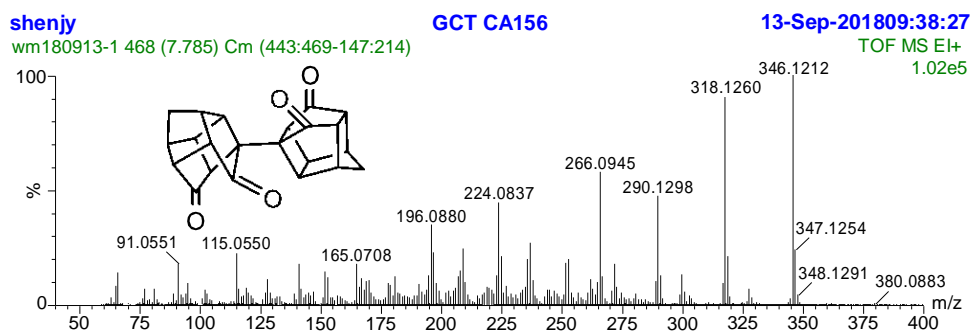
¹H NMR spectra of HV-1



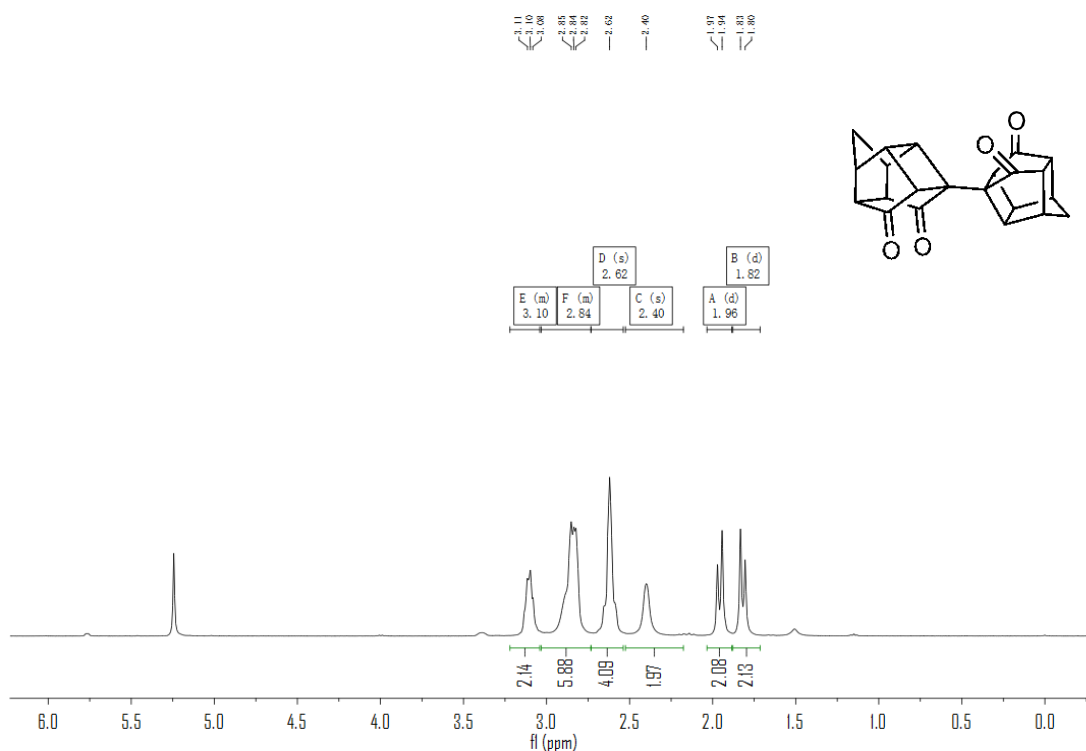
¹³C NMR spectra of HV-1



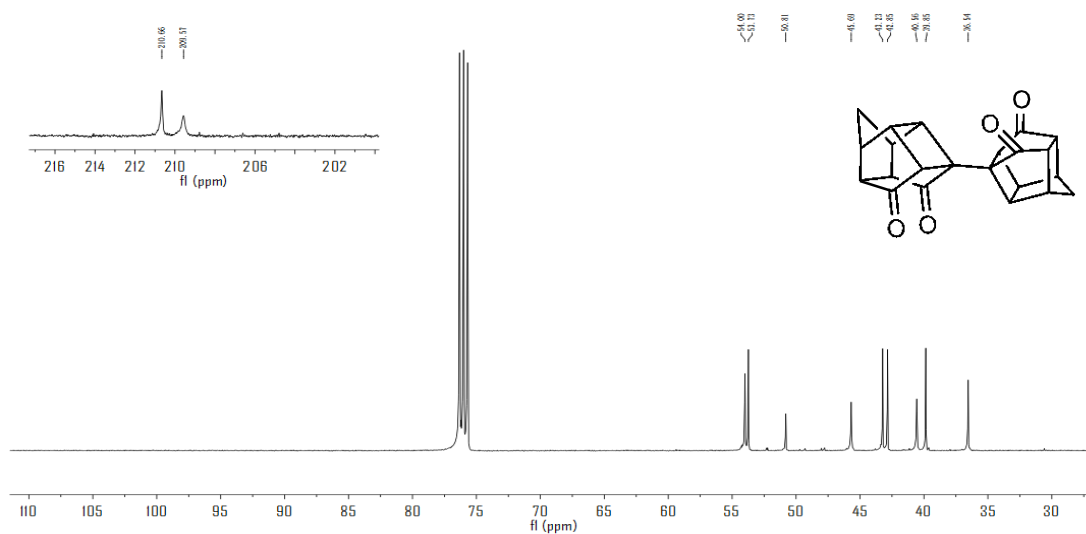
MS of HV-1



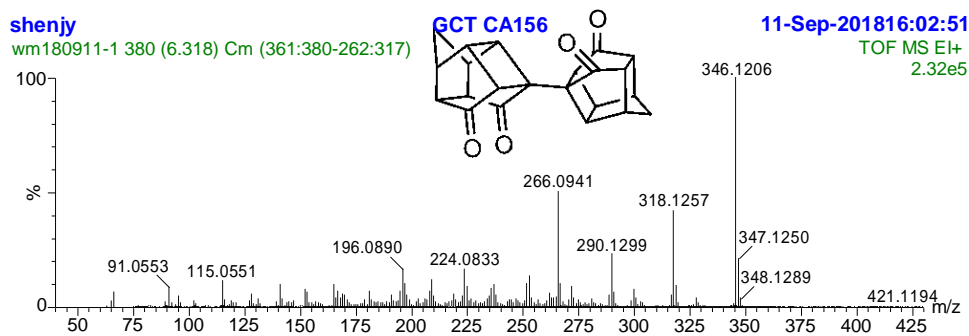
¹H NMR spectra of HV-2



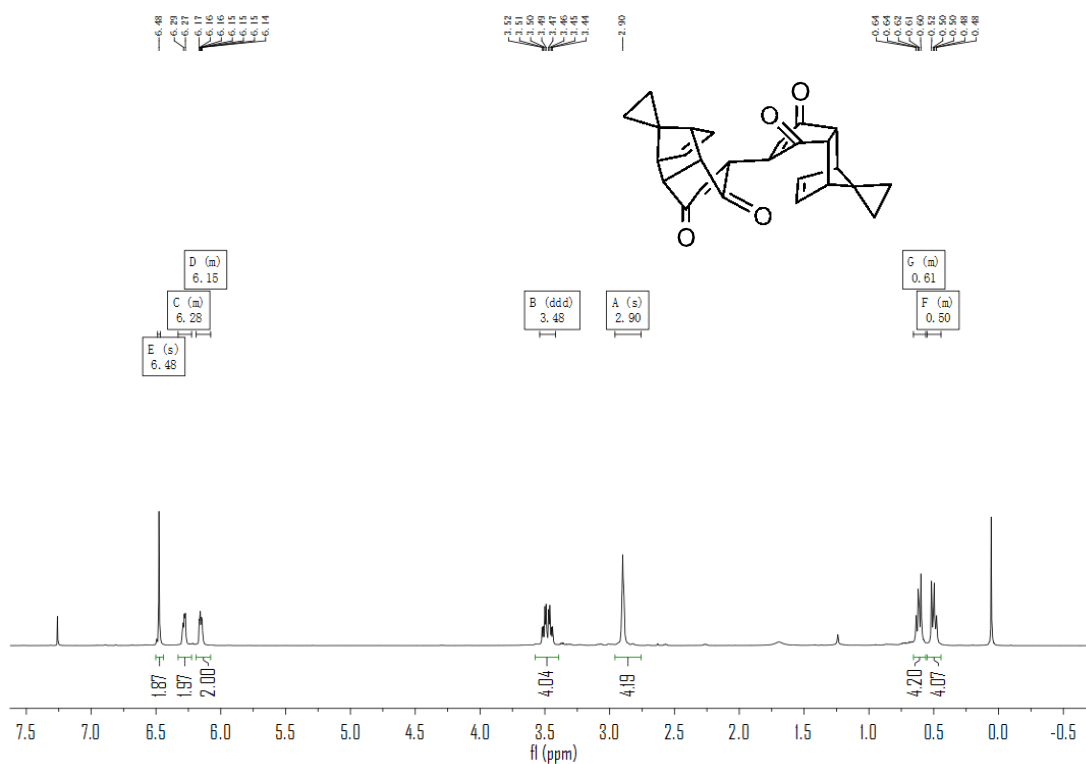
¹³C NMR spectra of HV-2



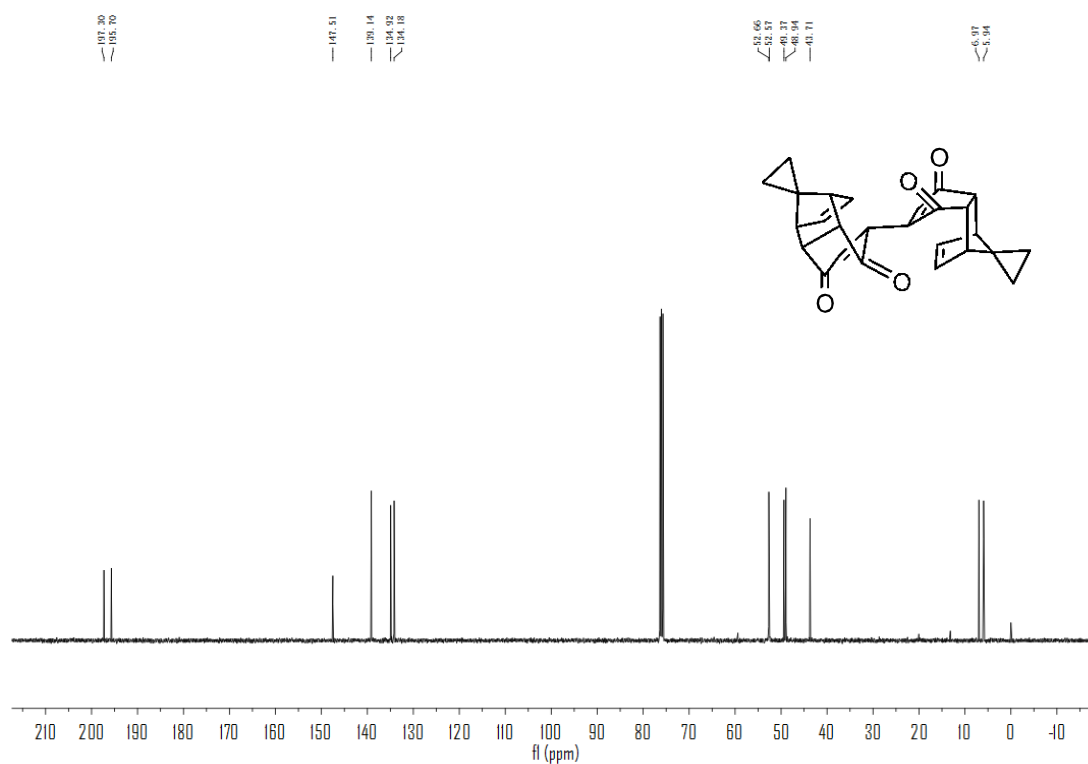
MS of HV-2



¹H NMR spectra of D-A-3

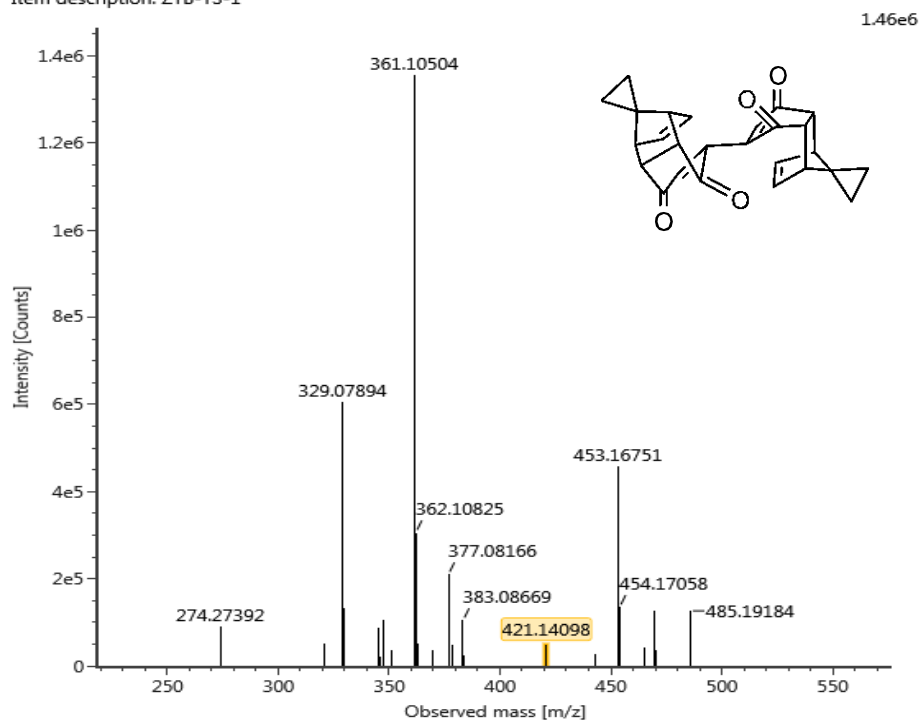


¹³C NMR spectra of D-A-3

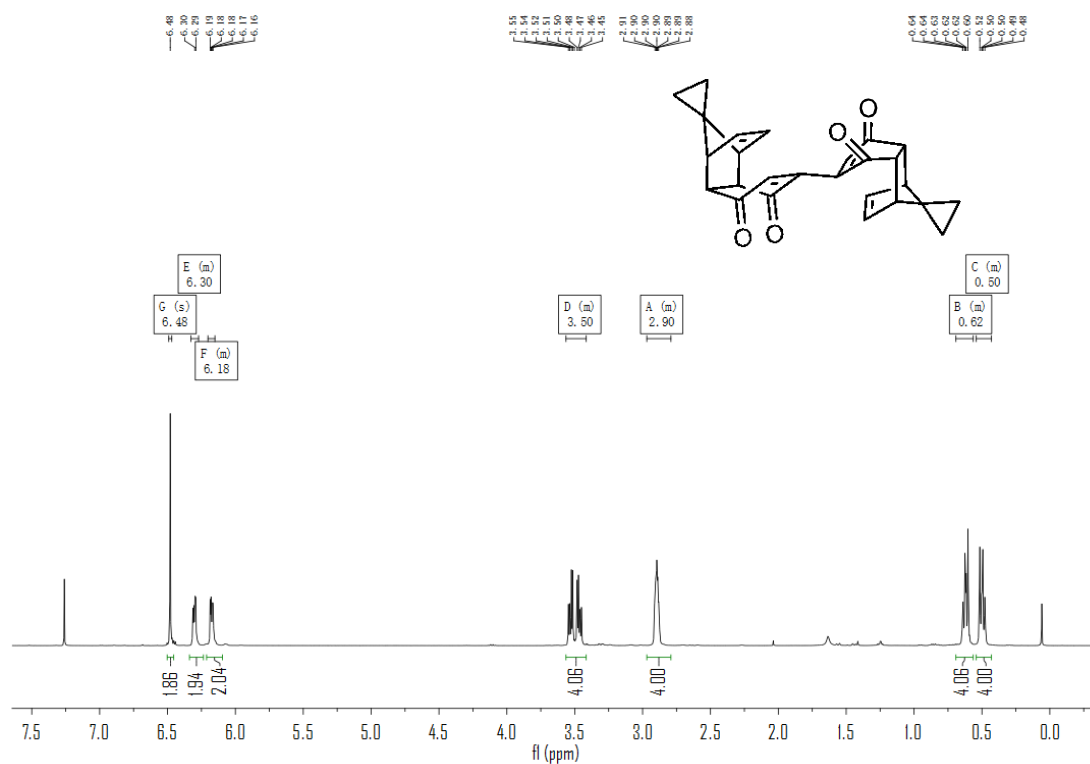


MS of D-A-3

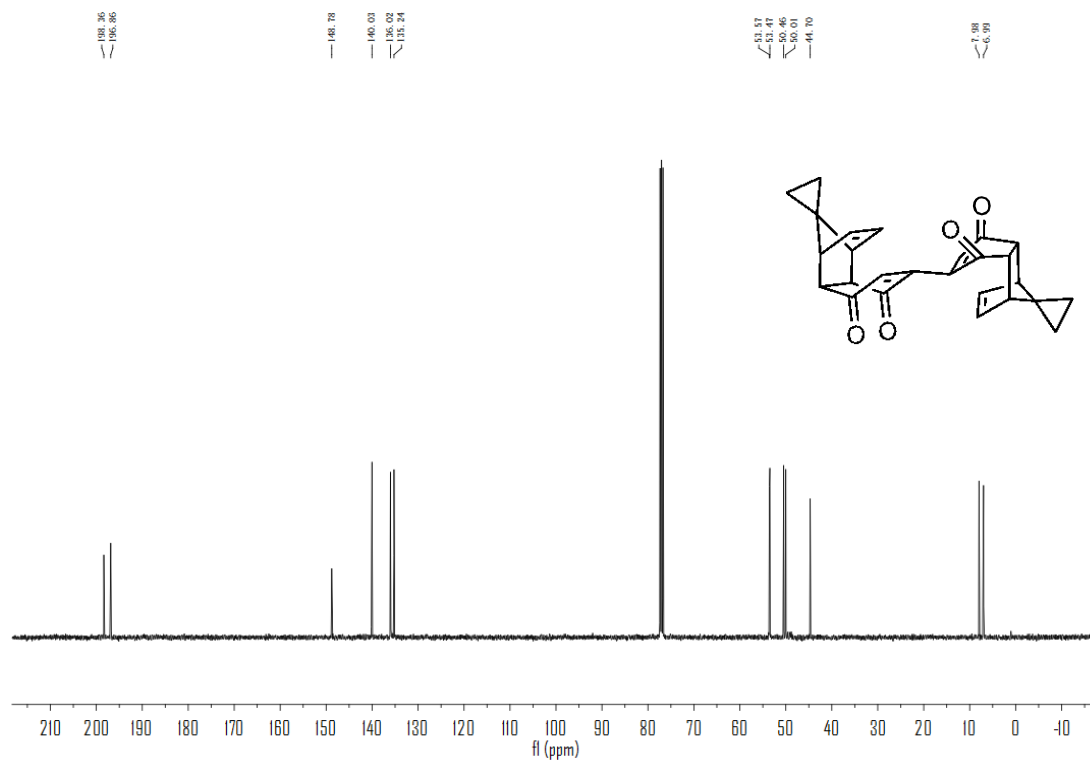
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¹H NMR spectra of D-A-4

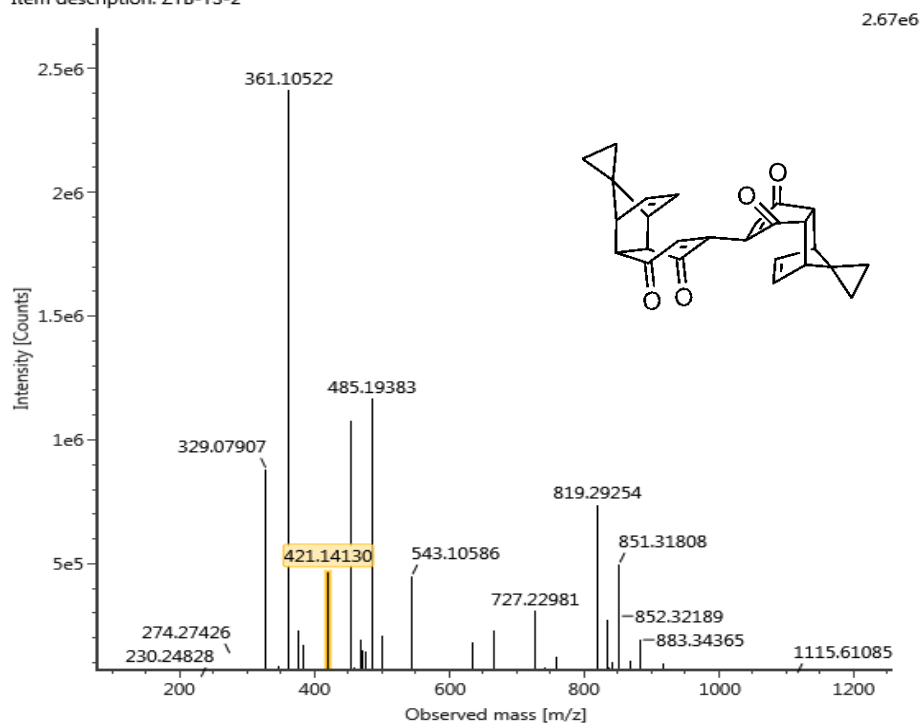


¹³C NMR spectra of D-A-4

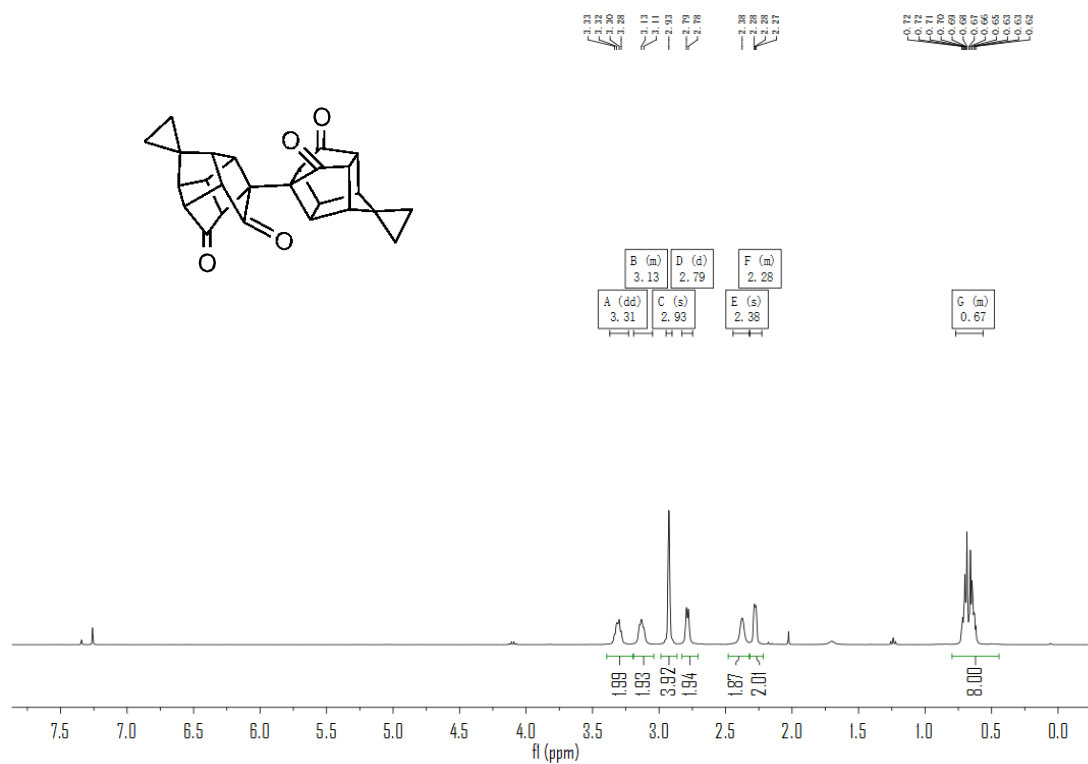


MS of D-A-4

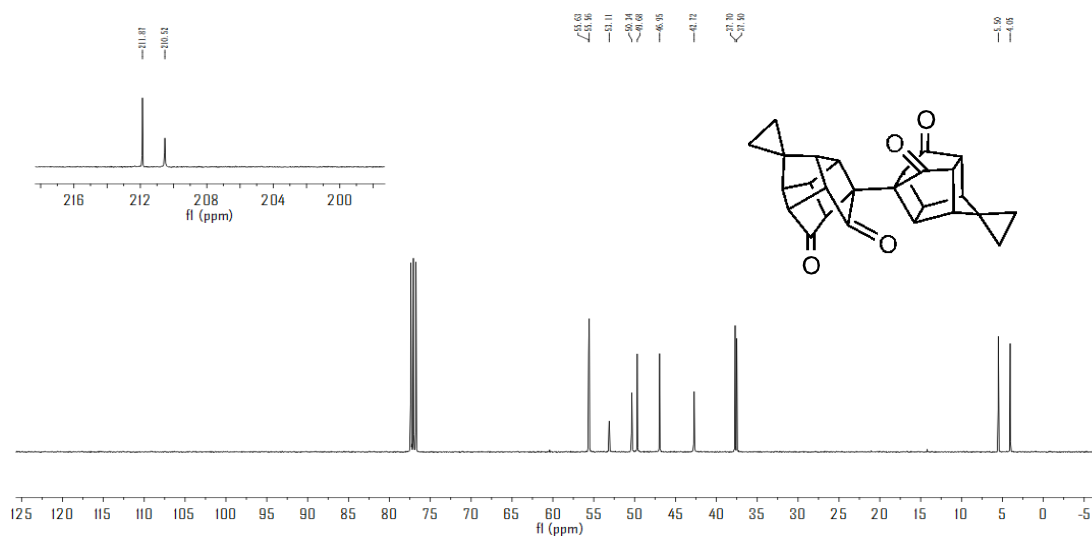
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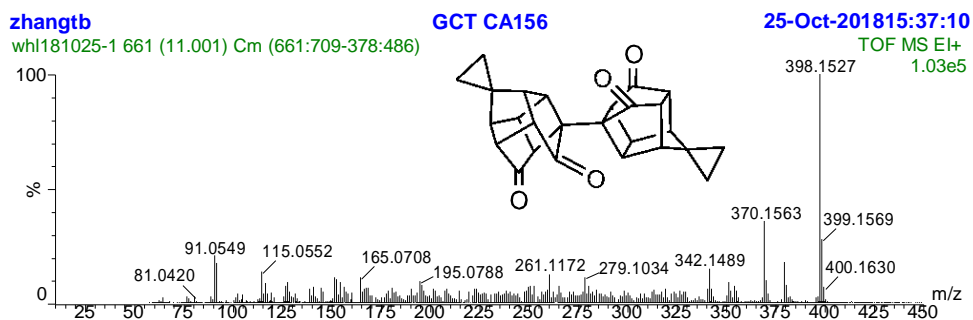
¹H NMR spectra of HV-3



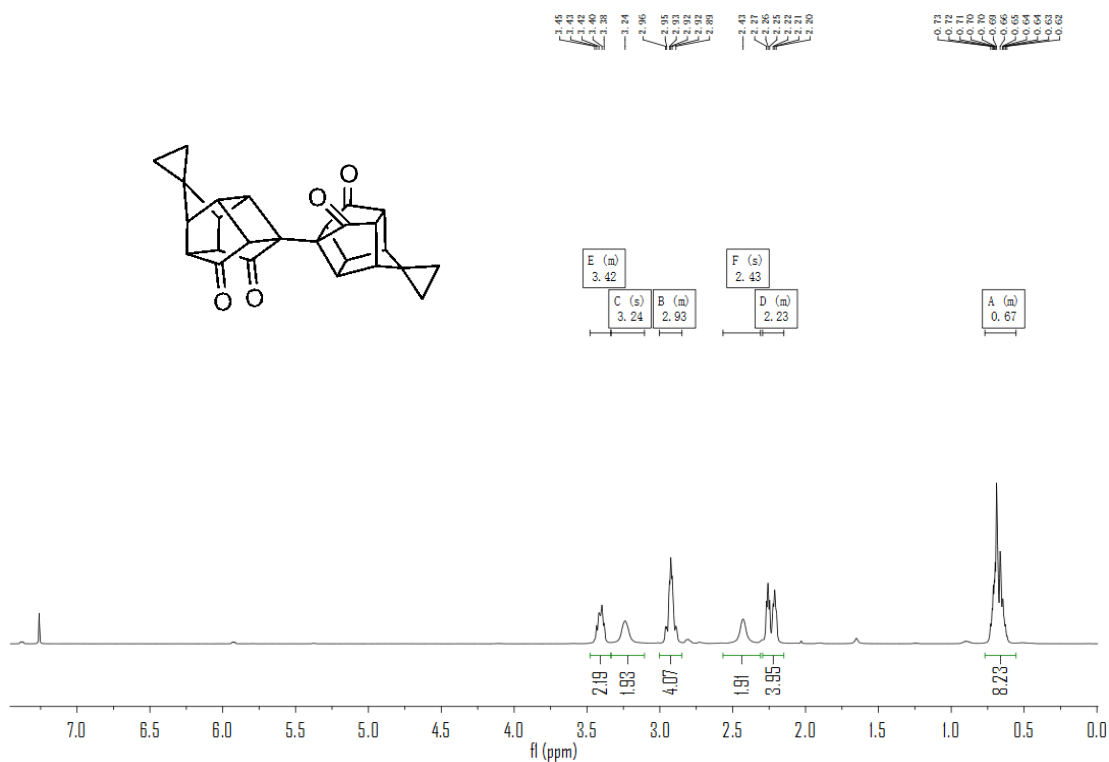
¹³C NMR spectra of HV-3



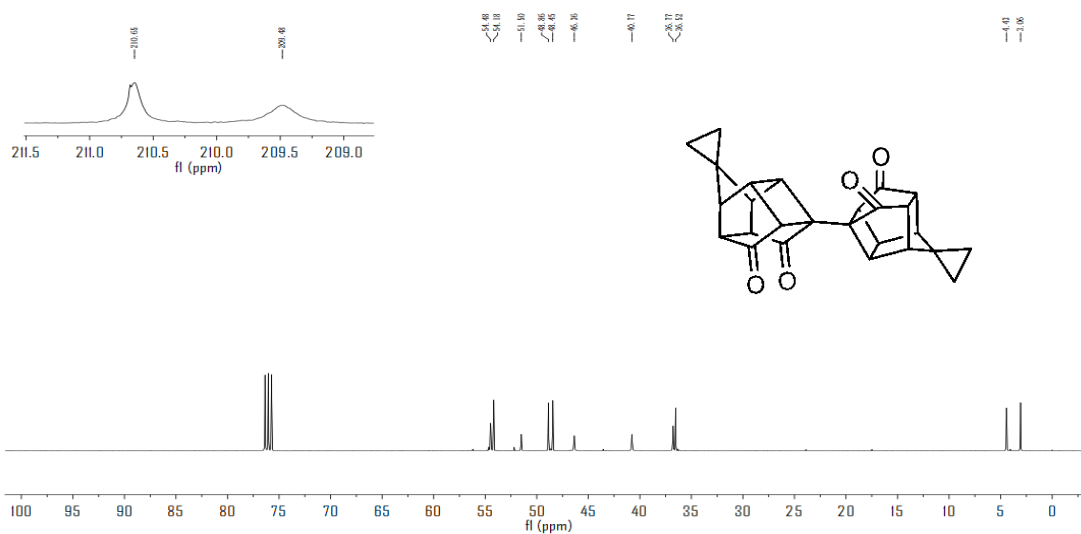
MS of HV-3



¹H NMR spectra of HV-4



¹³C NMR spectra of HV-4



MS of HV-4

