

Supporting Information

All-carbocycle hydrocarbon thermosets with high thermal stability and robust mechanical strength for low-k interlayer dielectrics

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Contents

Fig. S1-S14. ^1H and ^{13}C NMR spectra of compounds 1-9, DBCOD-BCB and DBCOD-ene-BCB.

Fig. S15-S21. Mass spectra of compounds 1-9, DBCOD-BCB and DBCOD-ene-BCB.

Fig. S22-S24. GC and HPLC analysis result of compounds 5/6, compounds 7/8 and DBCOD-

BCB

Fig. S25. Rheological analysis on complex viscosity of monomers when heated from 150 °C to 250 °C with a ramping rate of 10 °C/min in air.

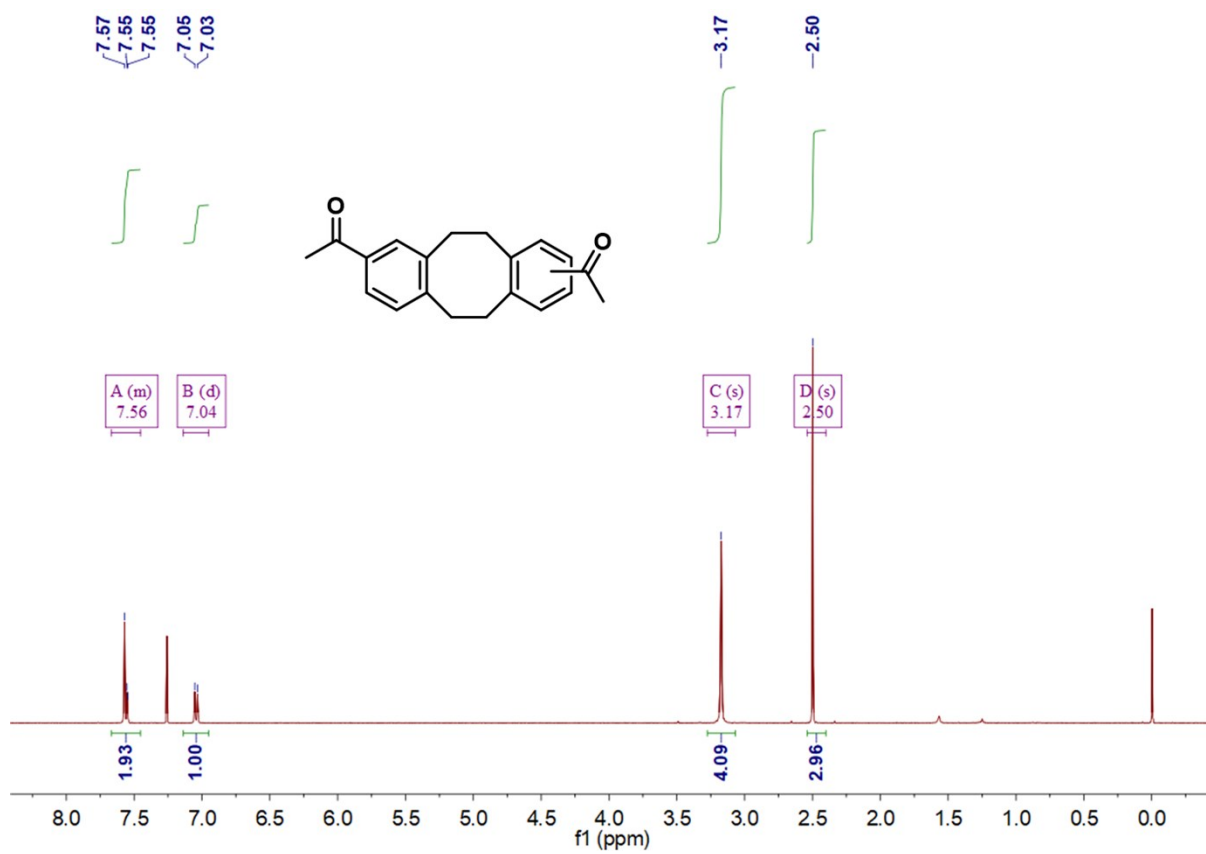


Fig. S1 ^1H NMR spectrum of the mixture of compounds **1** and **2** in CDCl_3 .

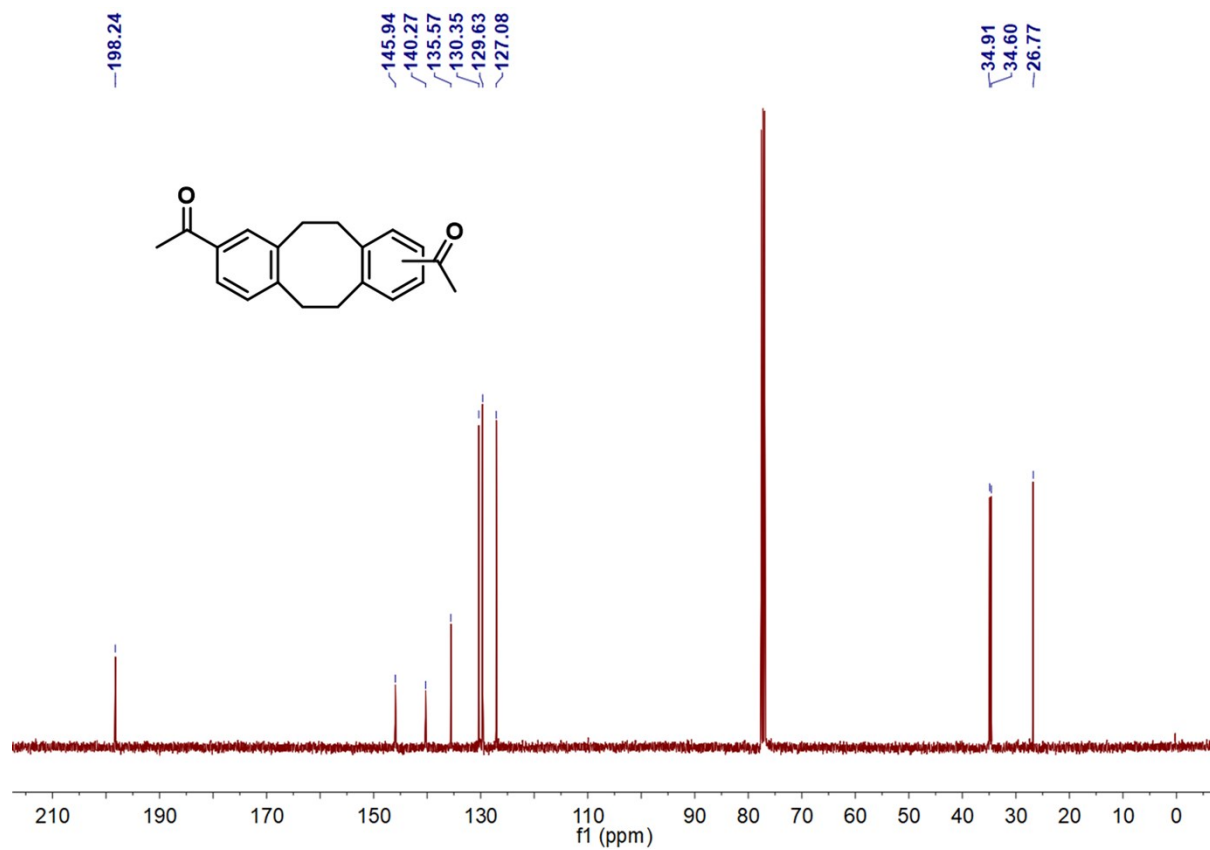


Fig. S2 ^{13}C NMR spectrum of the mixture of compounds 1 and 2 in CDCl_3 .

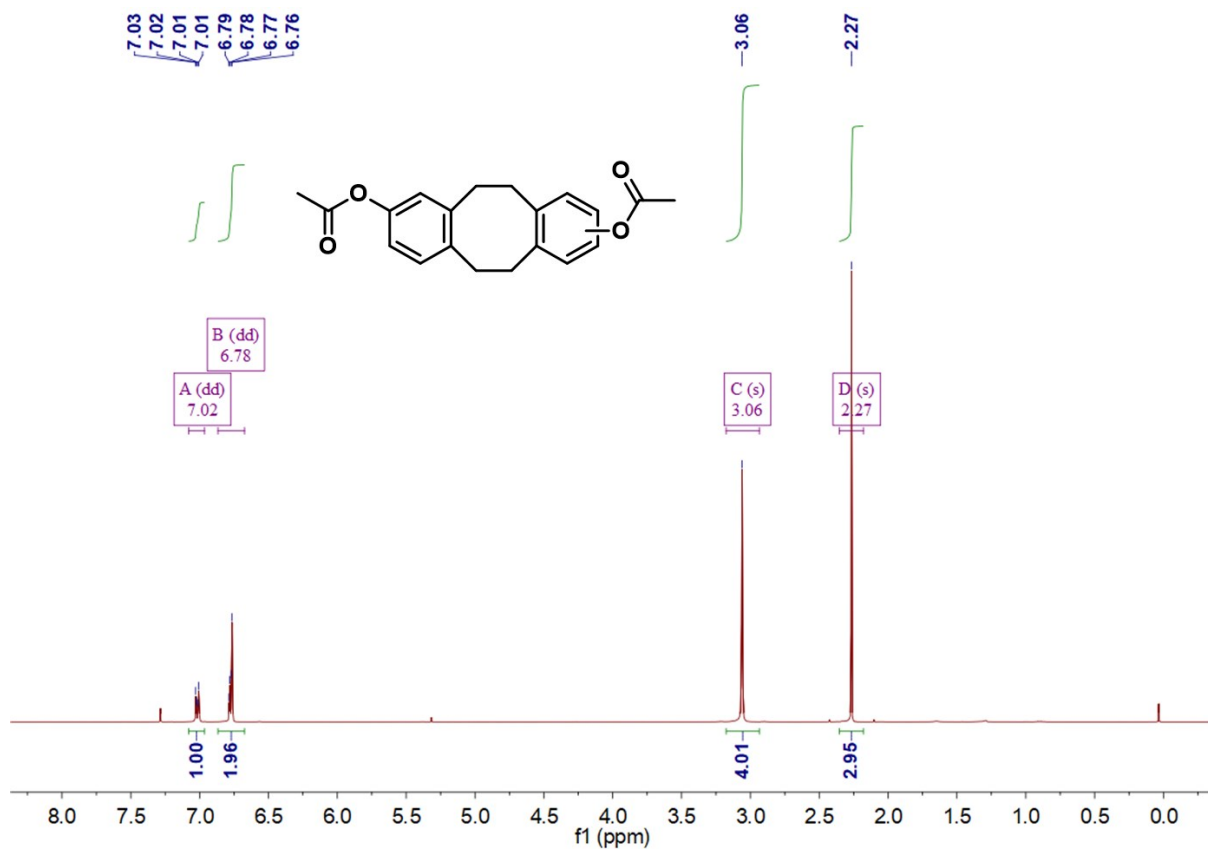


Fig. S3 ^1H NMR spectrum of the mixture of compounds **3** and **4** in CDCl_3 .

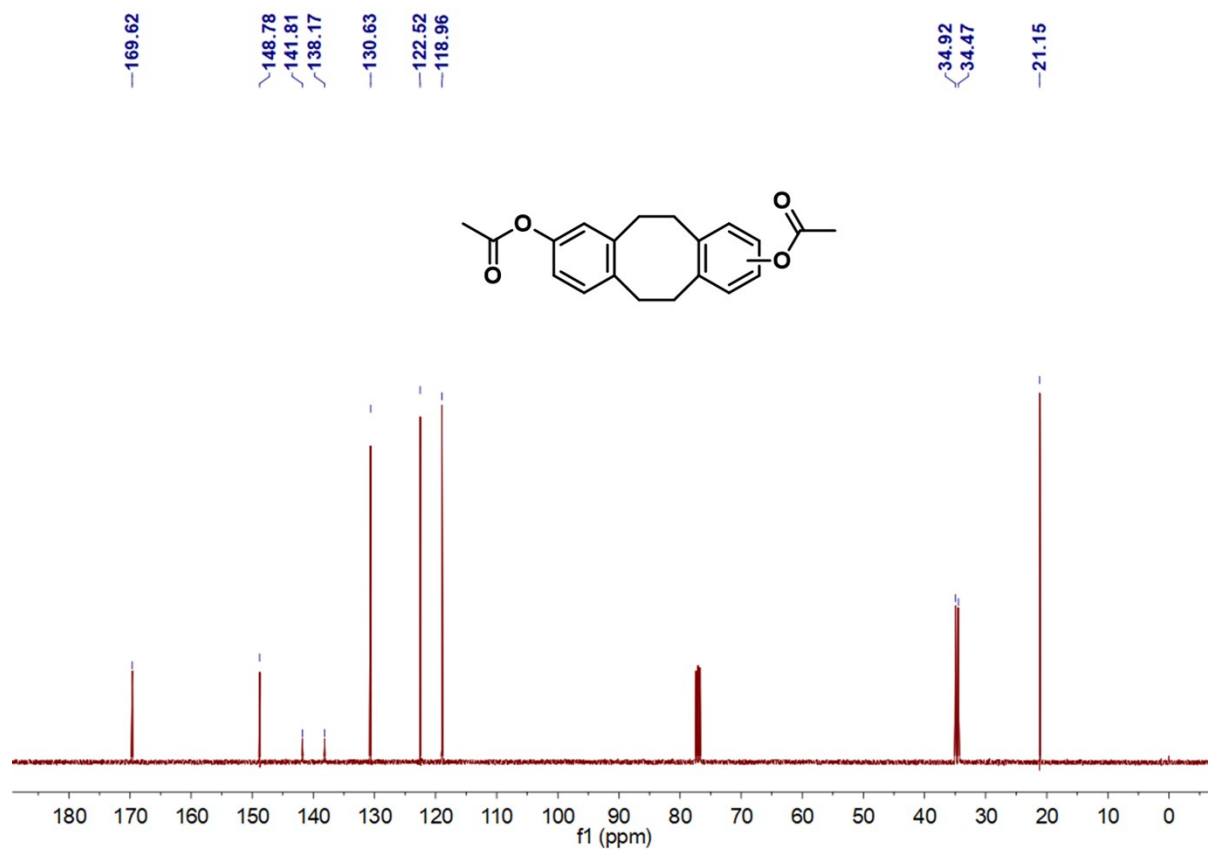


Fig. S4 ¹³C NMR spectrum of the mixture of compounds **3** and **4** in CDCl₃.

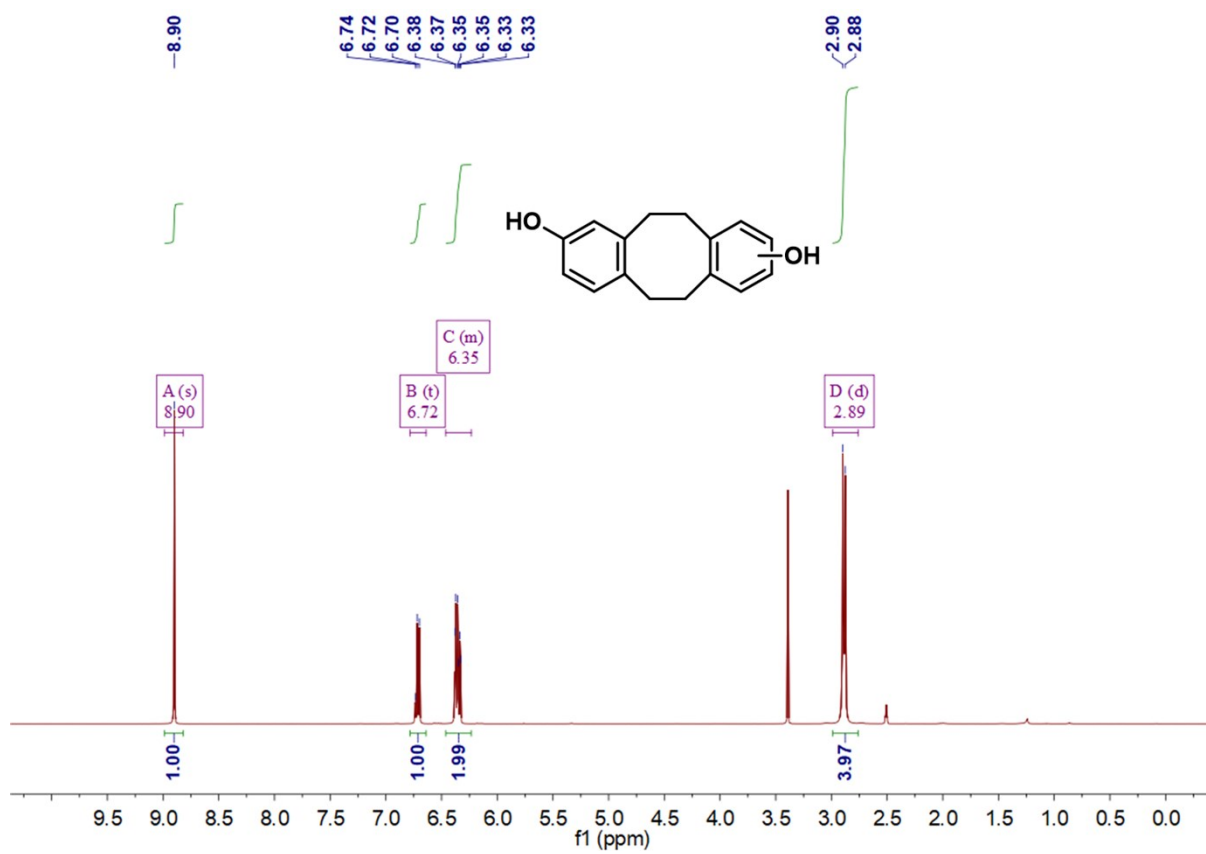


Fig. S5 ^1H NMR spectrum of the mixture of compounds **5** and **6** in $\text{DMSO-}d_6$.

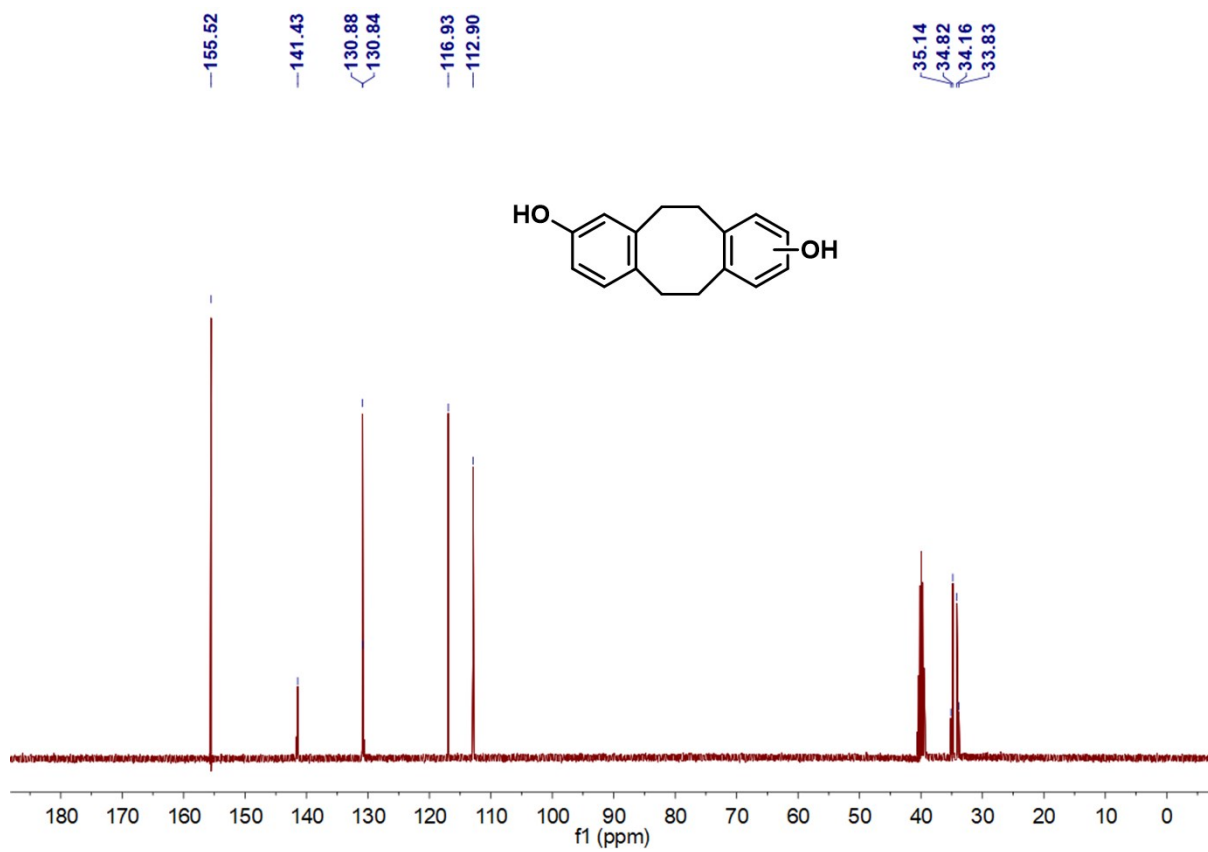


Fig. S6 ^{13}C NMR spectrum of the mixture of compounds 5 and 6 in $\text{DMSO-}d_6$.

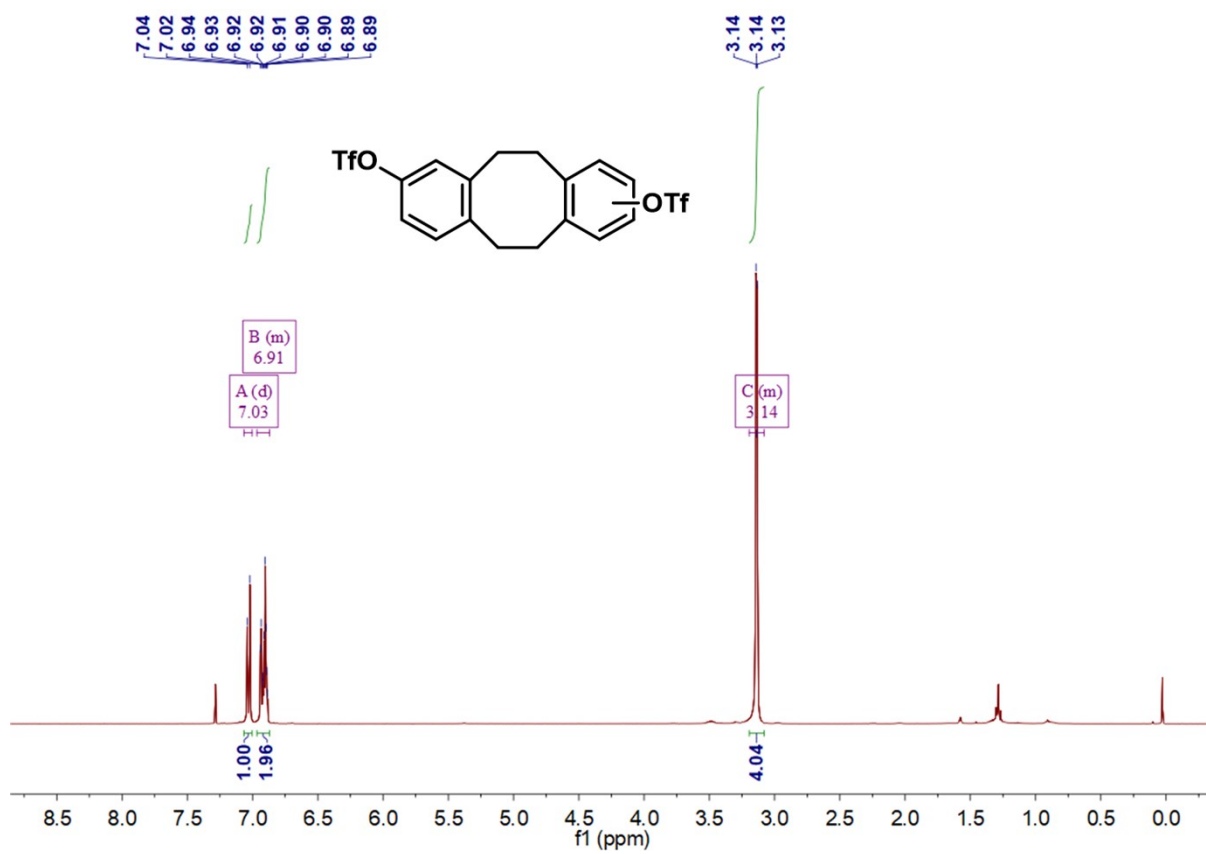


Fig. S7 ^1H NMR spectrum of the mixture of compounds **7** and **8** in CDCl_3 .

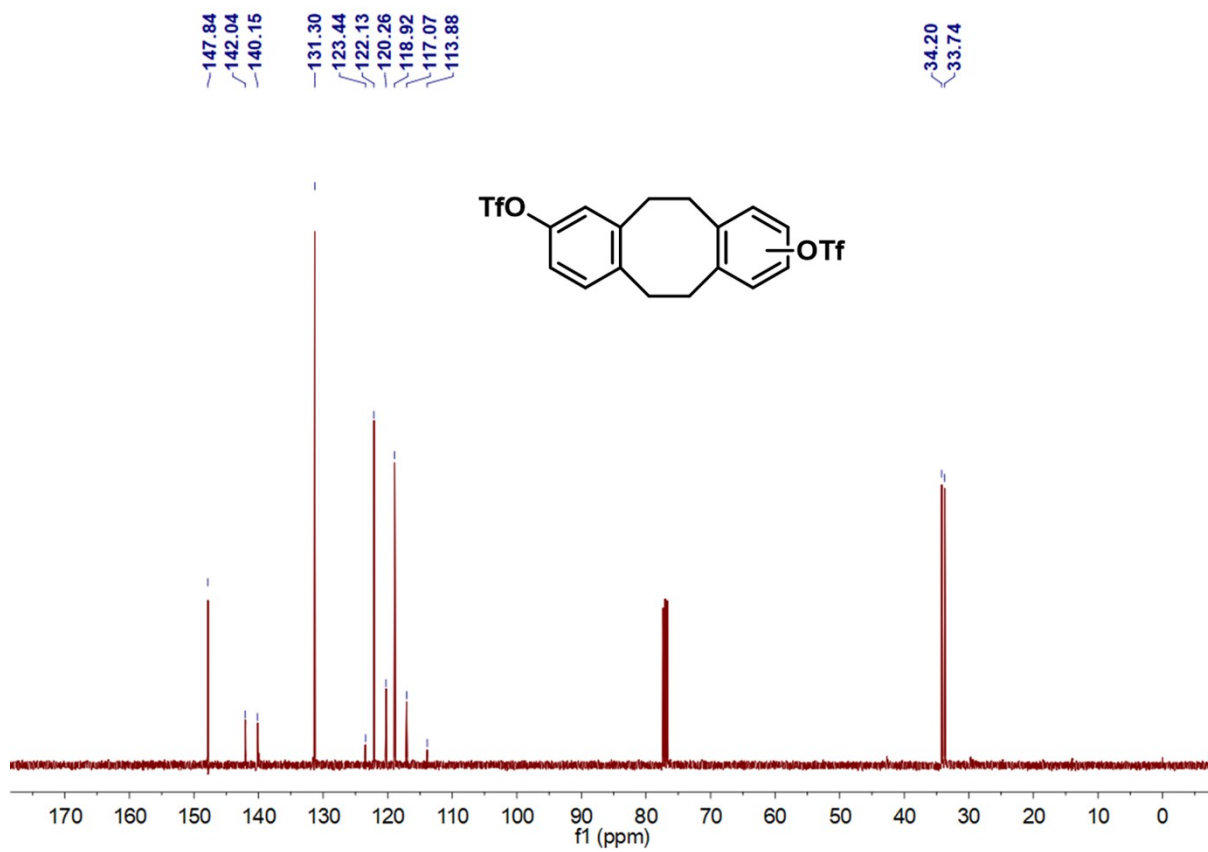


Fig. S8 ^{13}C NMR spectrum of the mixture of compounds **7** and **8** in CDCl_3 .

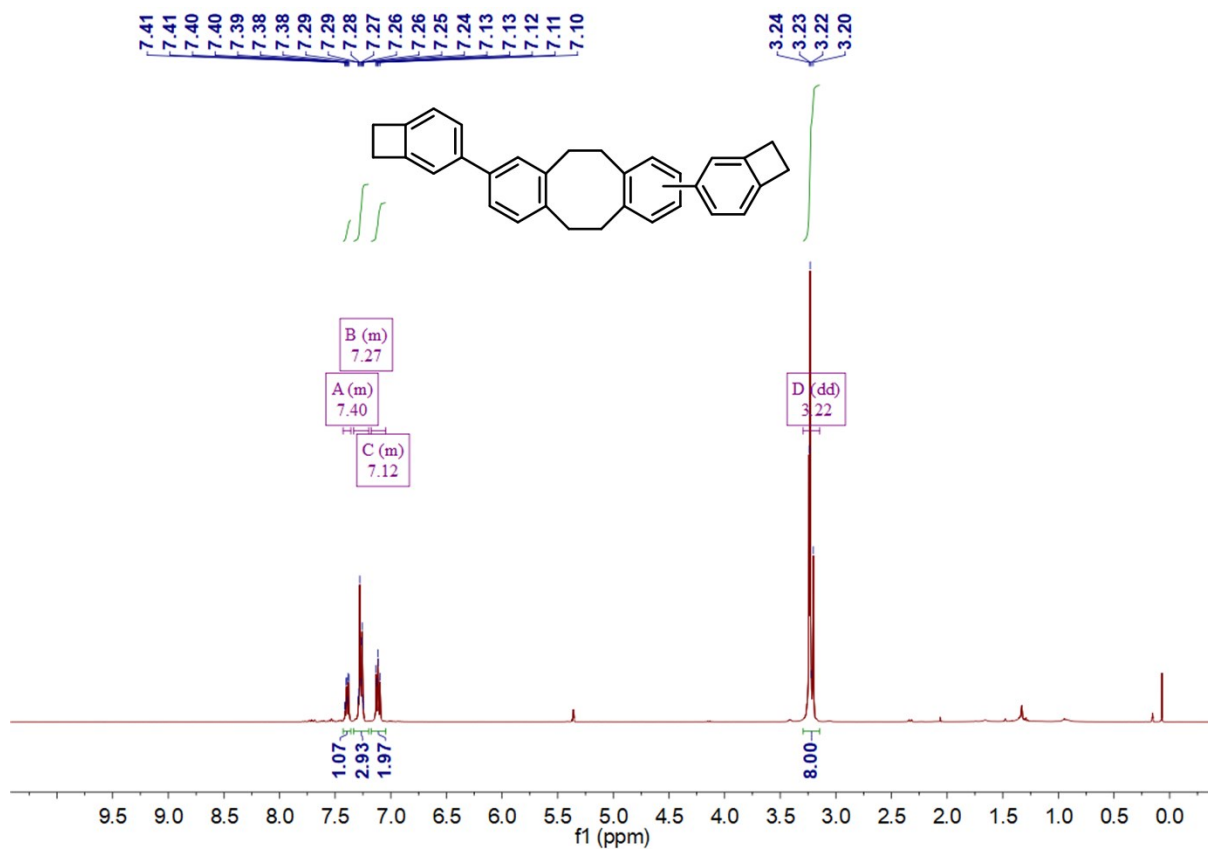


Fig. S9 ^1H NMR spectrum of DBCOD-BCB in CD_2Cl_2 .

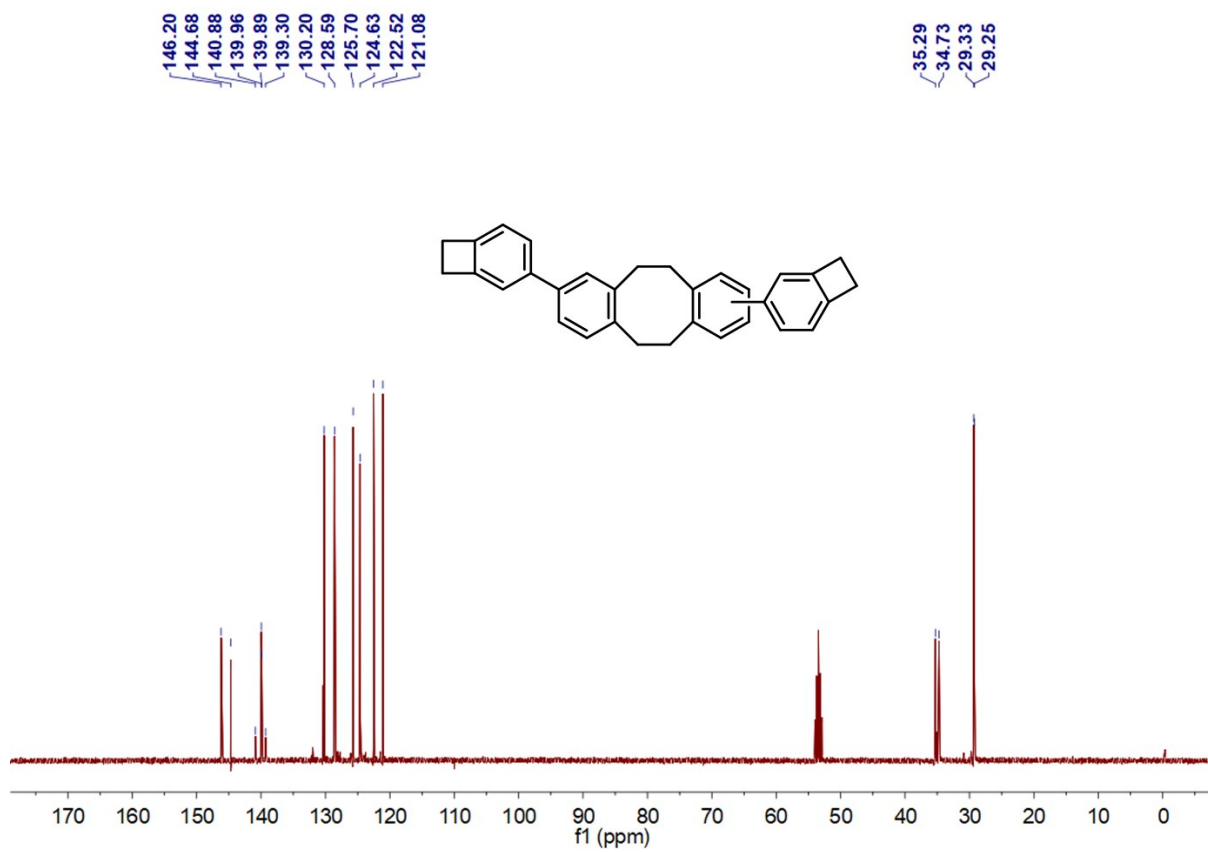


Fig. S10 ^{13}C NMR spectrum of DBCOD-BCB in CD_2Cl_2 .

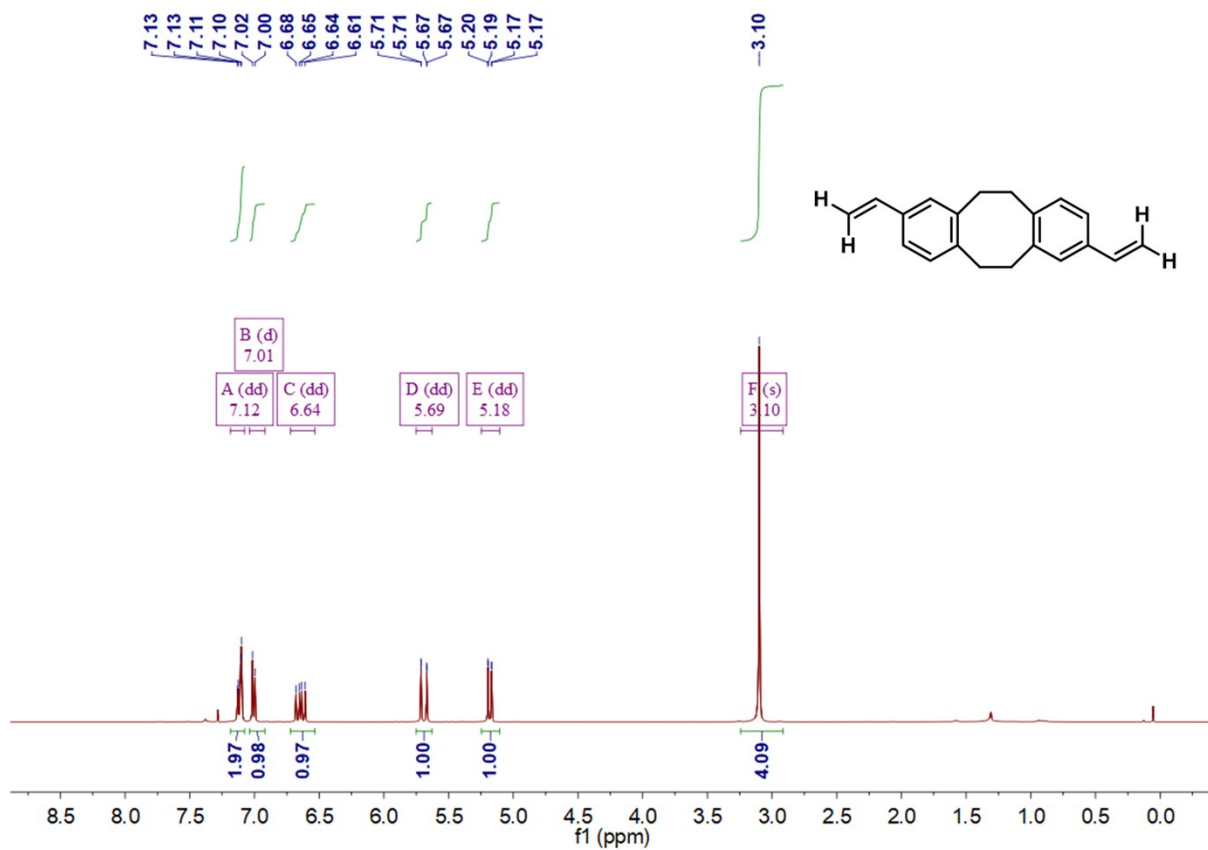


Fig. S11 ¹H NMR spectrum of compound 9 in CDCl₃.

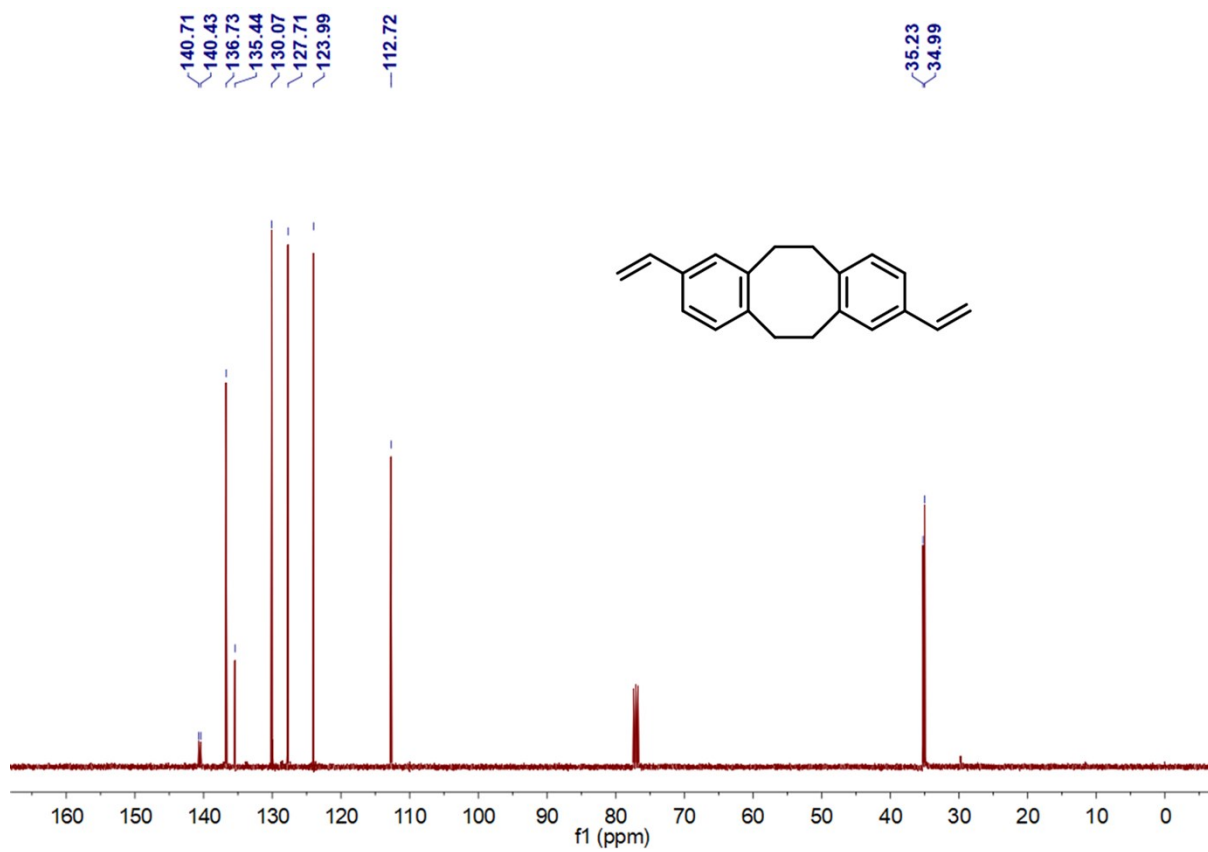


Fig. S12 ^{13}C NMR spectrum of compound 9 in CDCl_3 .

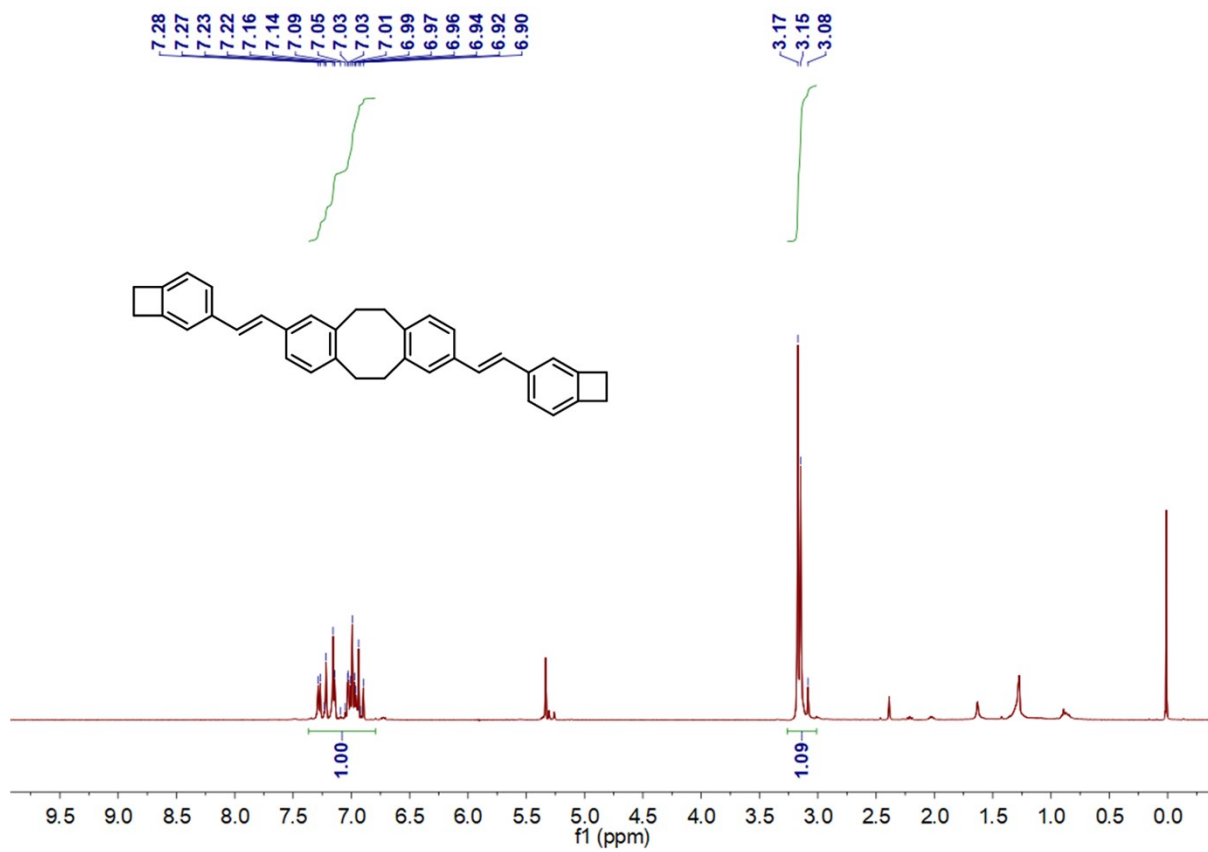


Fig. S13 ^1H NMR spectrum of DBCOD-ene-BCB in CD_2Cl_2 .

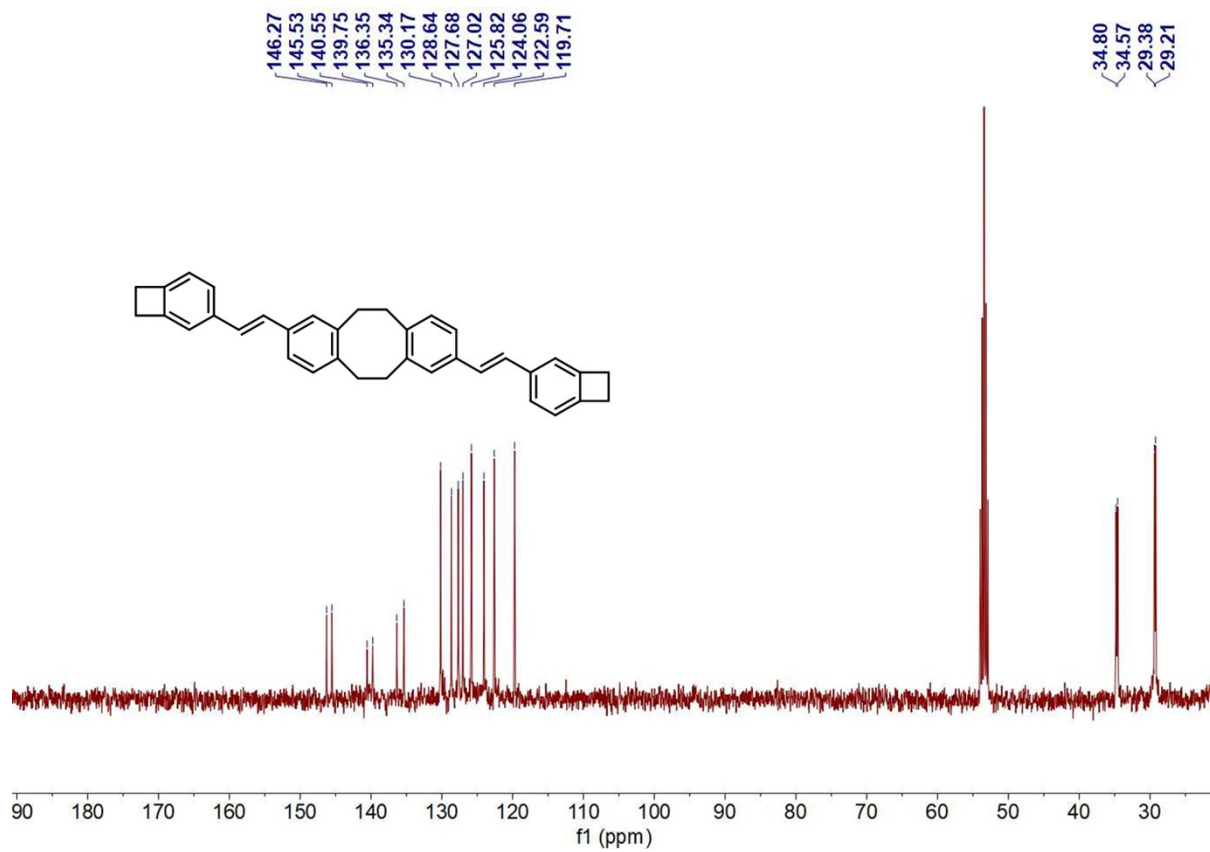


Fig. S14 ¹³C NMR spectrum of DBCOD-ene-BCB in CD₂Cl₂.

1 #11 RT: 0.09 AV: 1 NL: 1.31E8
T: FTMS + p ESI Full ms [100.0000-1000.0000]

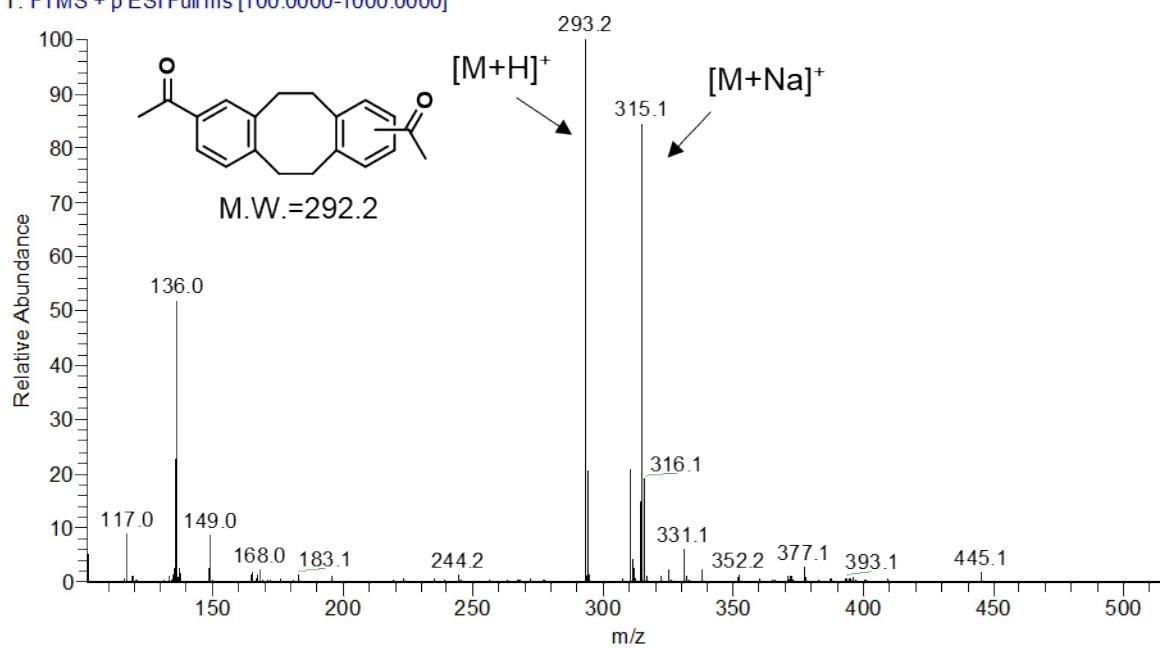


Fig. S15 Mass spectrum of the mixture of compounds 1 and 2.

2 #11 RT: 0.09 AV: 1 NL: 4.30E7
T: FTMS + p ESI Full ms [100.0000-1000.0000]

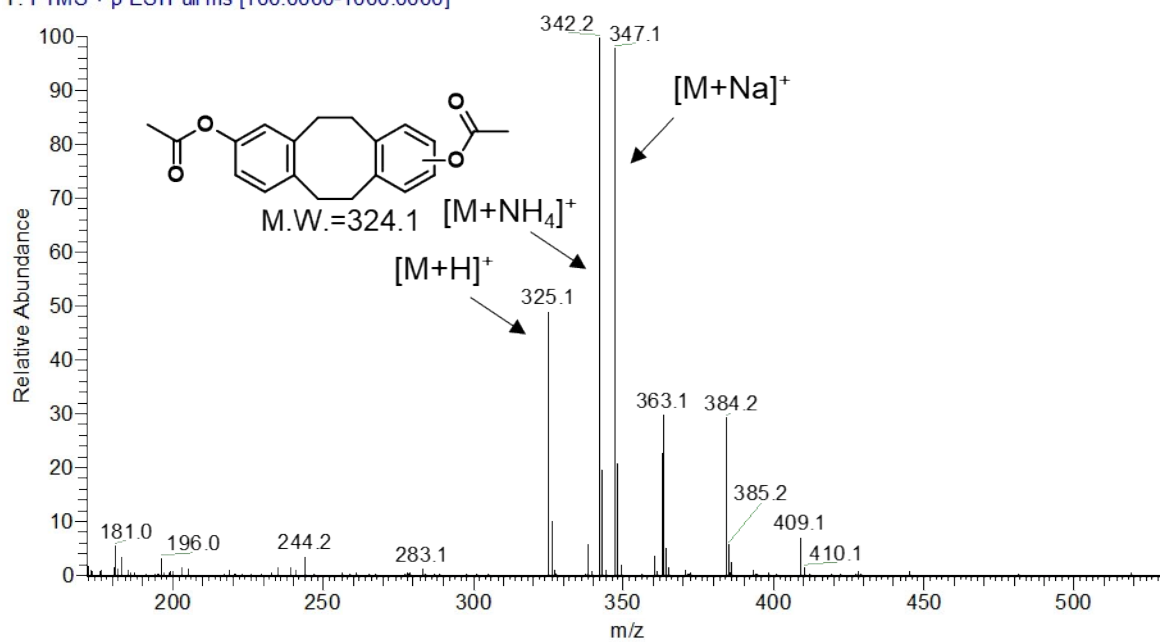


Fig. S16 Mass spectrum of the mixture of compounds 3 and 4.

3_20210719160412 #10 RT: 0.08 AV: 1 NL: 4.29E7
T: FTMS + p ESIFull ms [100.0000-1000.0000]

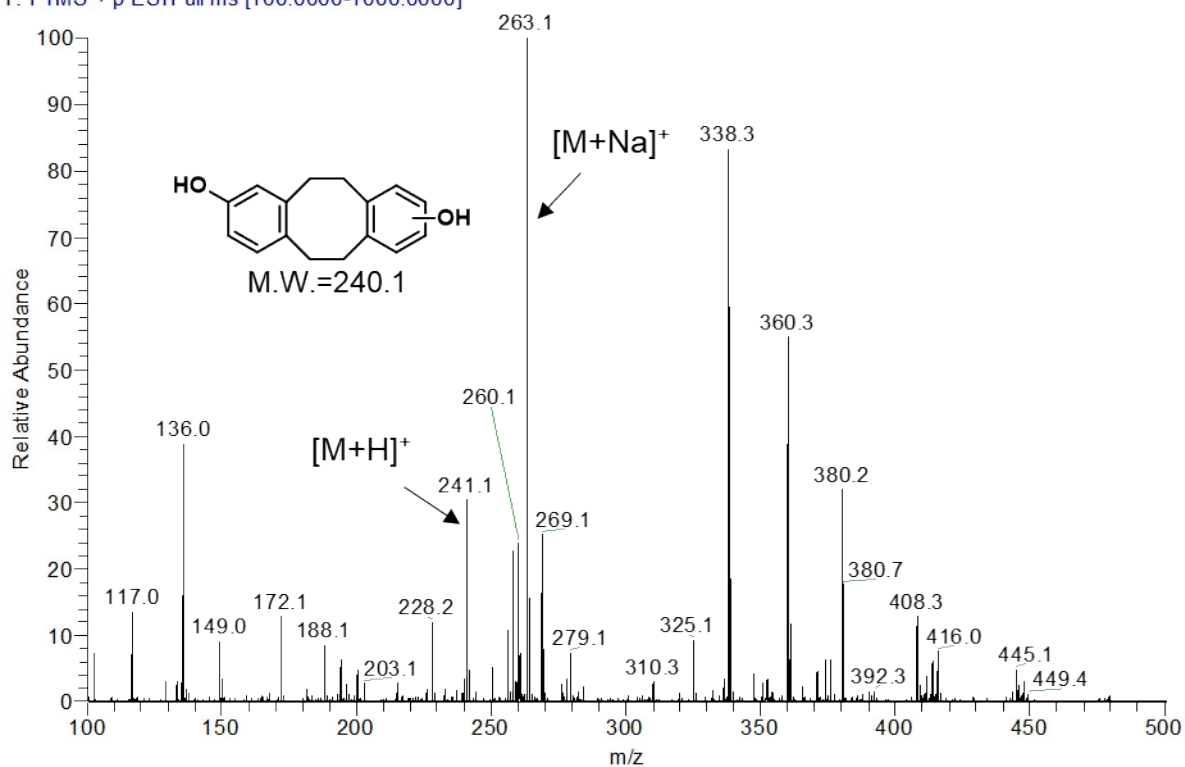


Fig. S17 Mass spectrum of the mixture of compounds 5 and 6.

4 #9 RT: 0.07 AV: 1 NL: 7.17E7
T: FTMS + p ESIFull ms [100.0000-1000.0000]

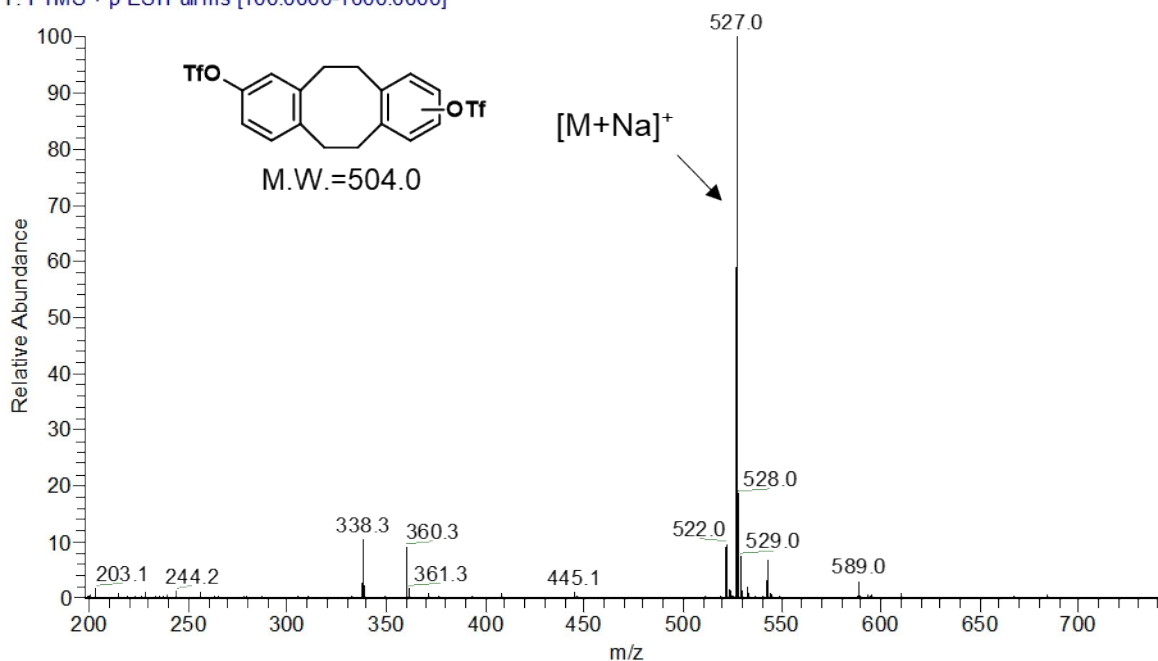


Fig. S18 Mass spectrum of the mixture of compounds 7 and 8.

5 #12 RT: 0.10 AV: 1 NL: 1.68E7
T: FTMS + p ESI Full ms [100.0000-1000.0000]

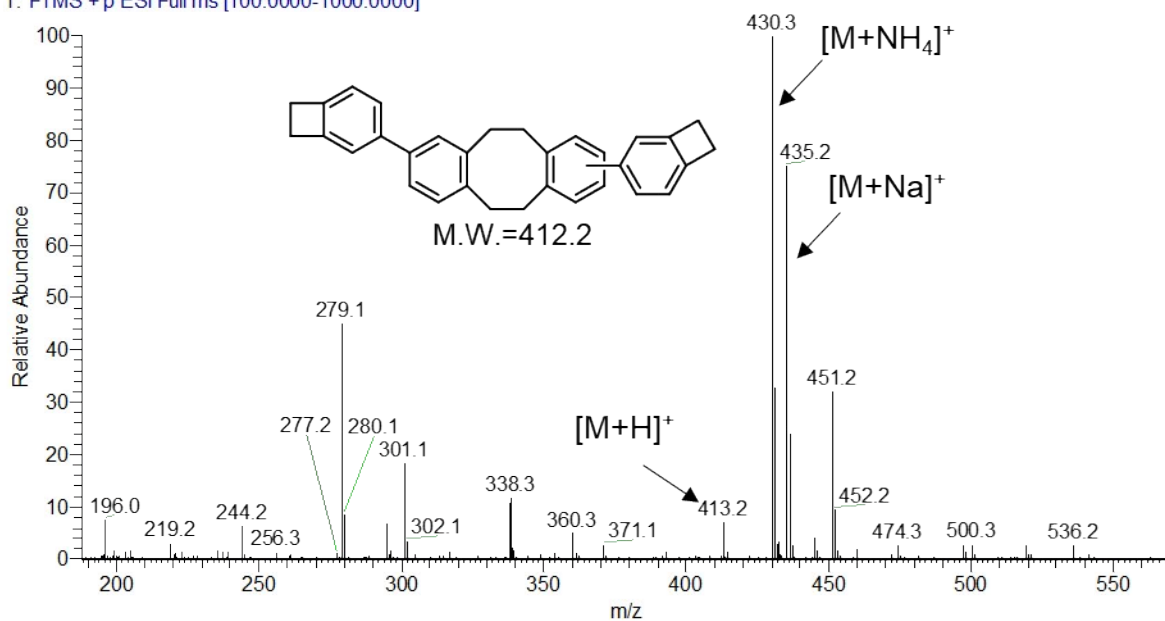


Fig. S19 Mass spectrum of DBCOD-BCB.

6 #10 RT: 0.08 AV: 1 NL: 4.32E7
T: FTMS + p ESI Full ms [100.0000-1000.0000]

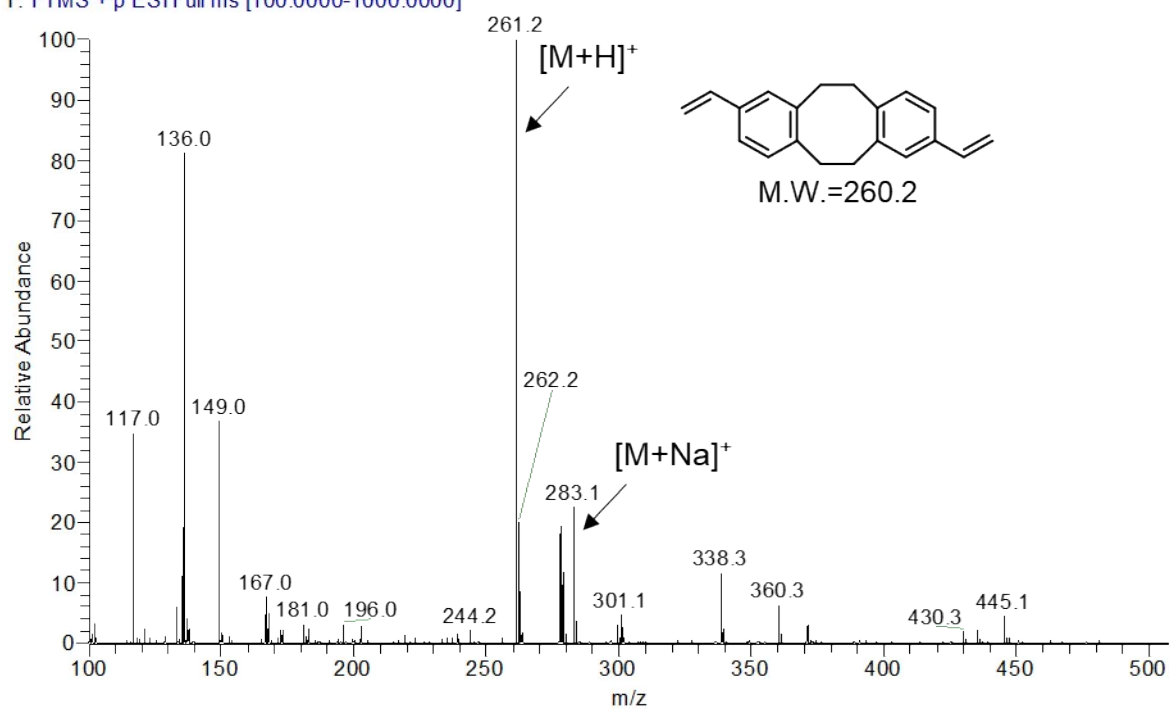


Fig. S20 Mass spectrum of the mixture of compound 9.

7_20210719160622 #7 RT: 0.06 AV: 1 NL: 9.38E7
T: FTMS + p ESI Full ms [100.0000-1000.0000]

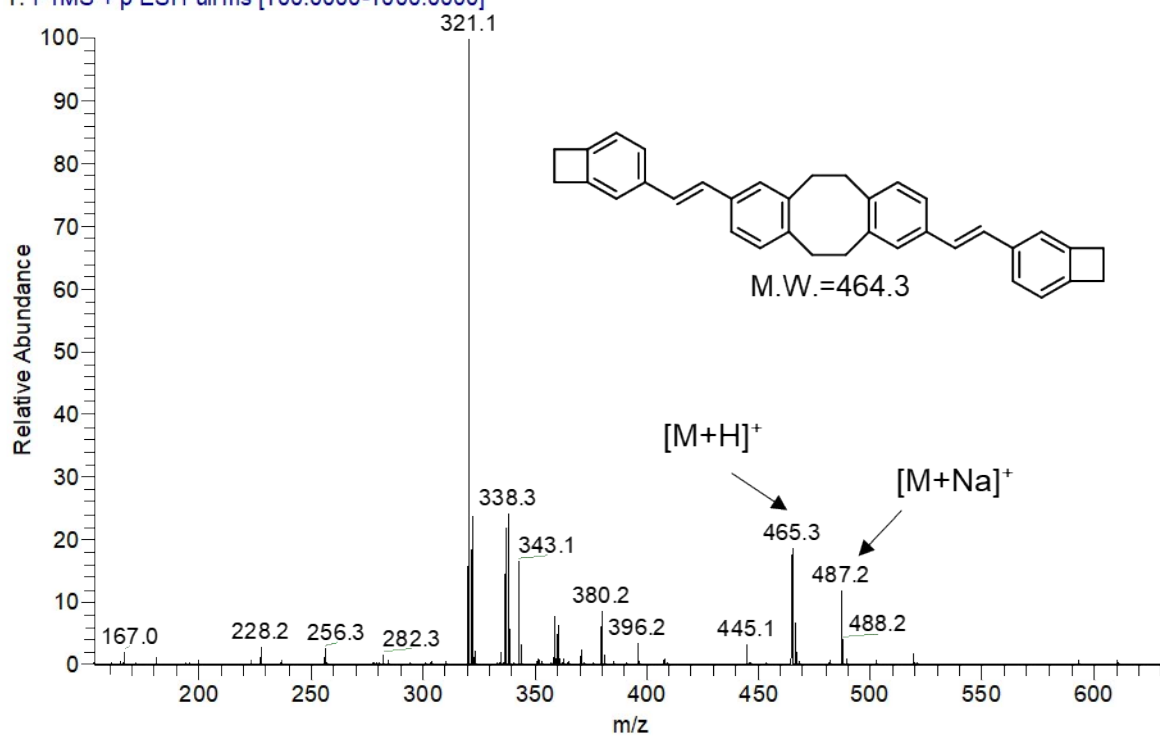


Fig. S21 Mass spectrum of of DBCOD-ene-BCB.

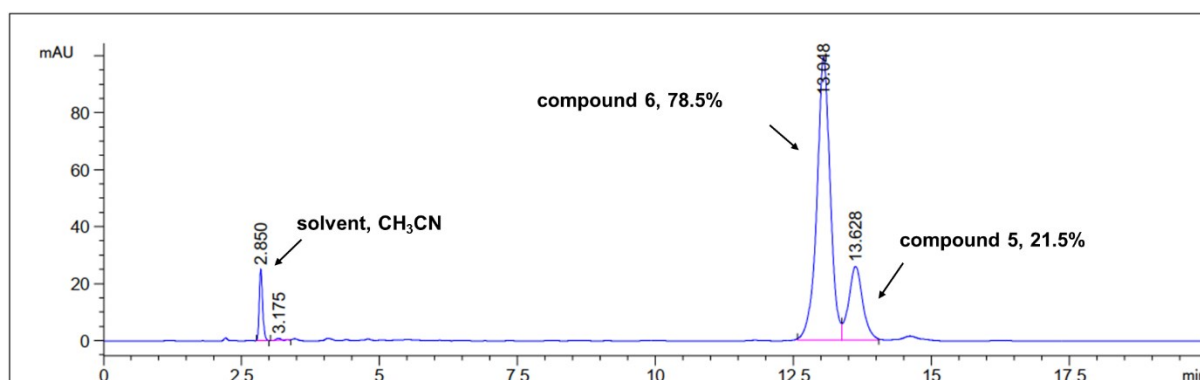


Fig. S22.HPLC analysis result of compounds 5 and 6.

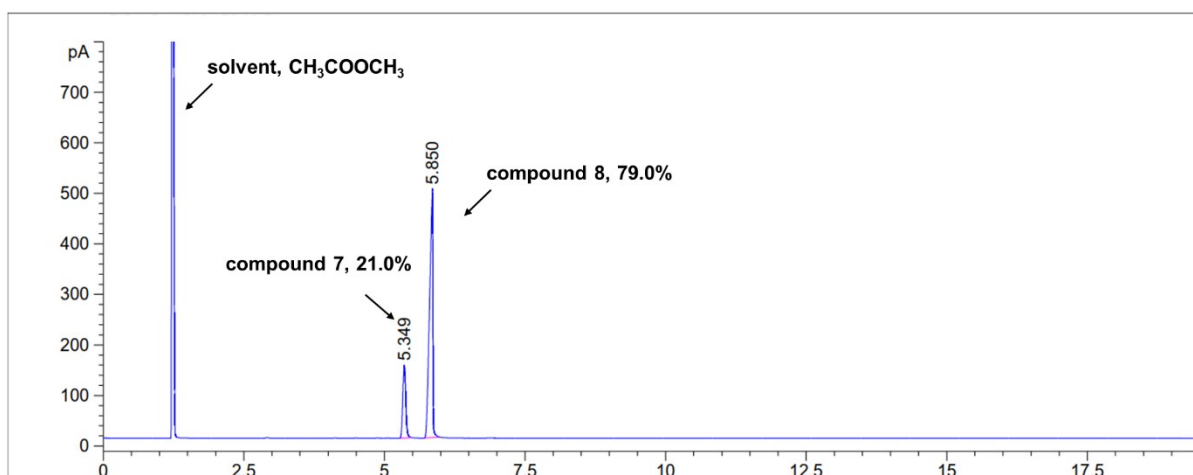


Fig. S23. GC analysis result of compounds **7** and **8**.

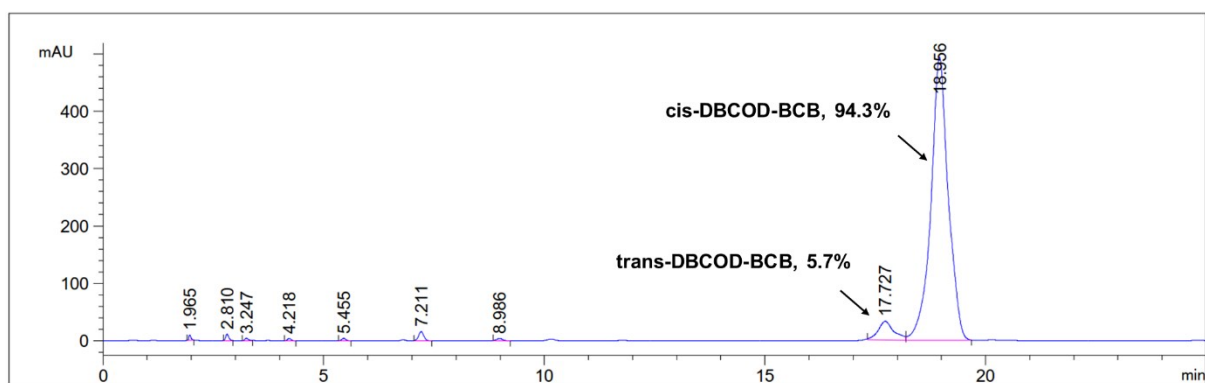


Fig. S24. HPLC analysis result of DBCOD-BCB.

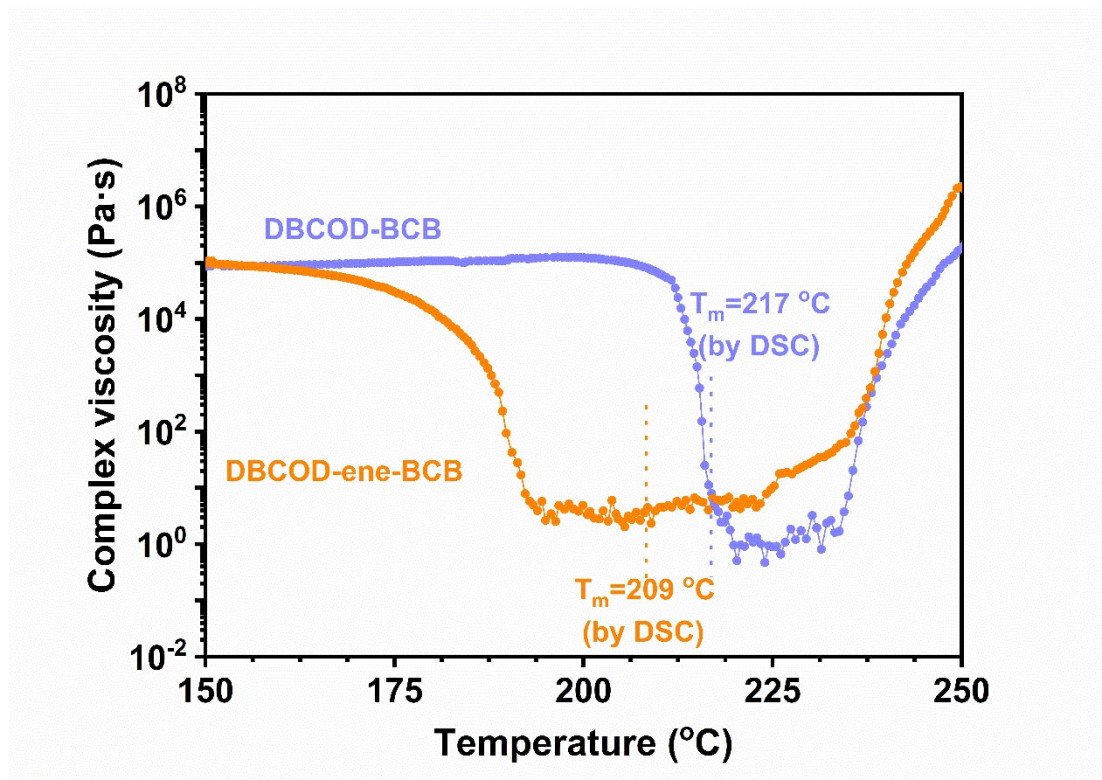


Fig. S25. Rheological analysis on complex viscosity of monomers when heated from 150 °C to 250 °C with a ramping rate of 10 °C/min in air