

Supporting Information for

Constructing Low-k Polymers at High Frequency from Two Propenyl-containing Biomasses through Grubbs Reaction

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CORRESPONDING AUTHOR FOOTNOTE

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Fig. S15 FT-IR spectra of **DA-BCB** before and after curing.

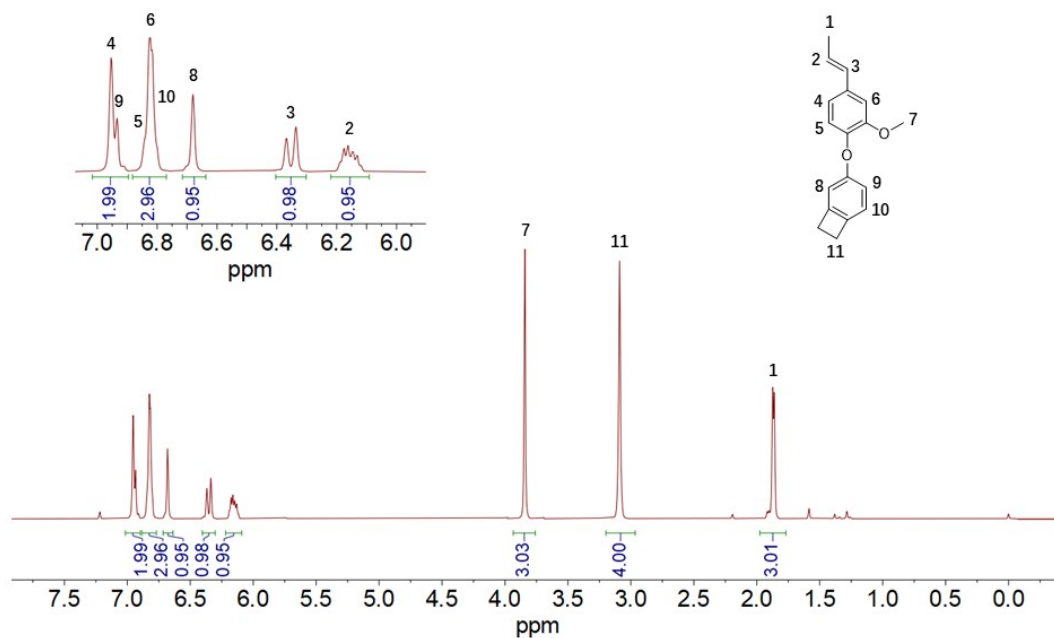


Fig. S1 ^1H NMR spectra of compound **I-BCB** (500 MHz, CDCl_3).

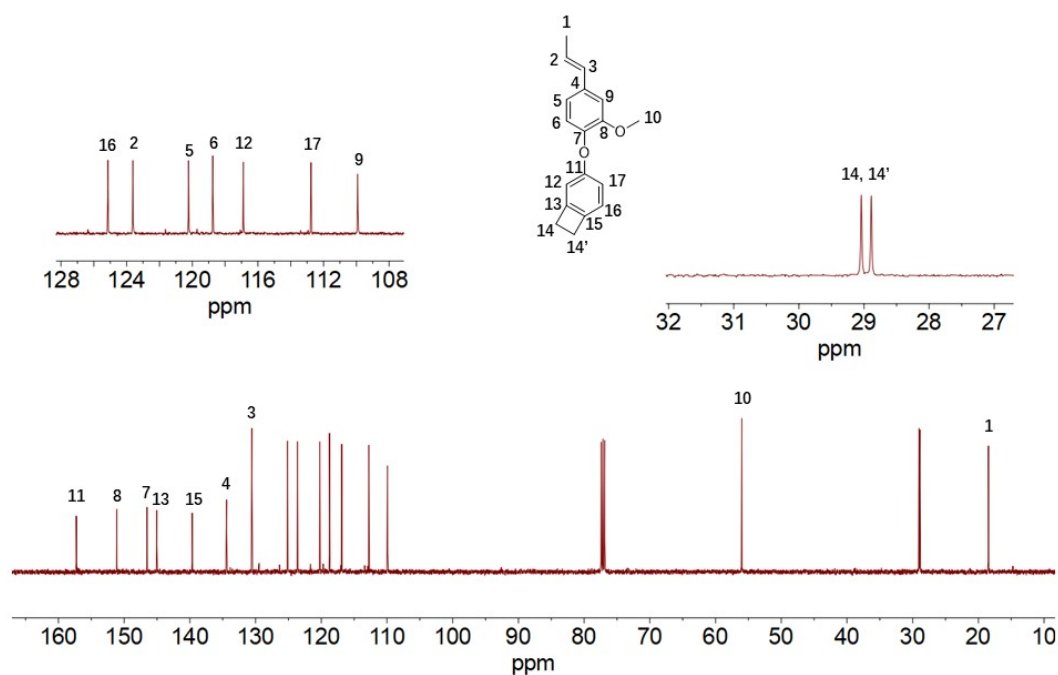


Fig. S2 ^{13}C NMR spectra of compound **I-BCB** (500 MHz, CDCl_3).

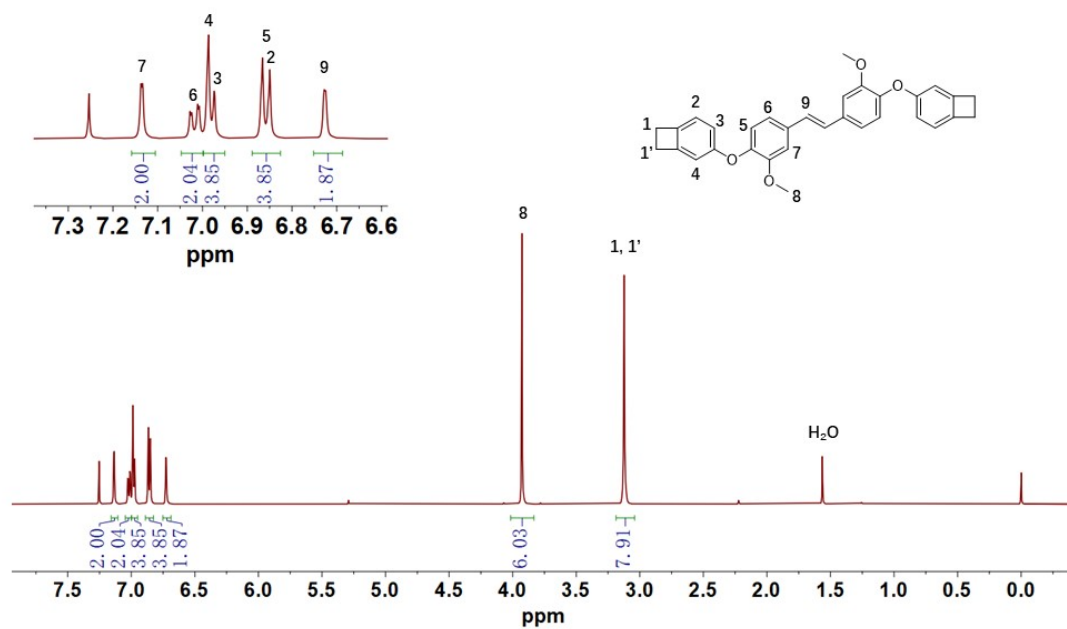


Fig. S3 ¹H NMR spectra of compound **DI-BCB** (500 MHz, CDCl₃).

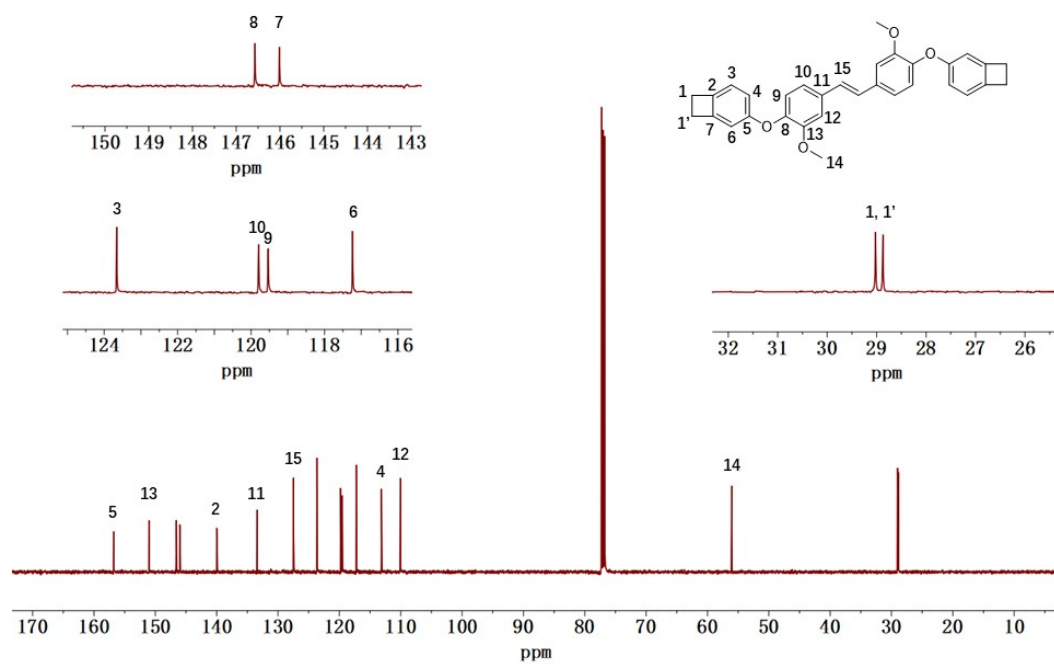


Fig. S4 ¹³C NMR spectra of compound **DI-BCB** (500 MHz, CDCl₃).

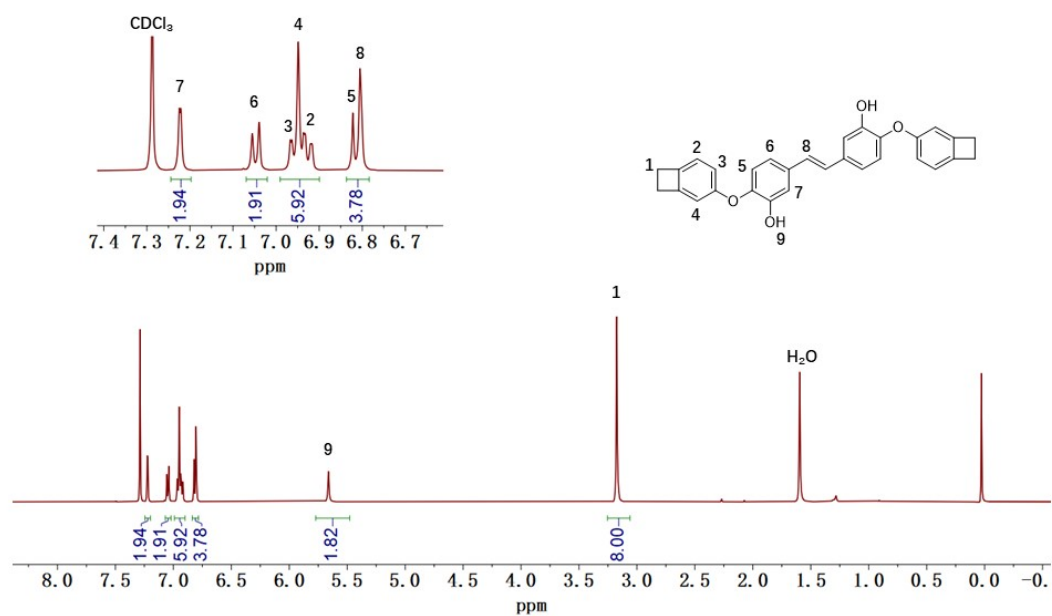


Fig. S5 ^1H NMR spectra of compound **DI-BCB-P** (500 MHz, CDCl_3).

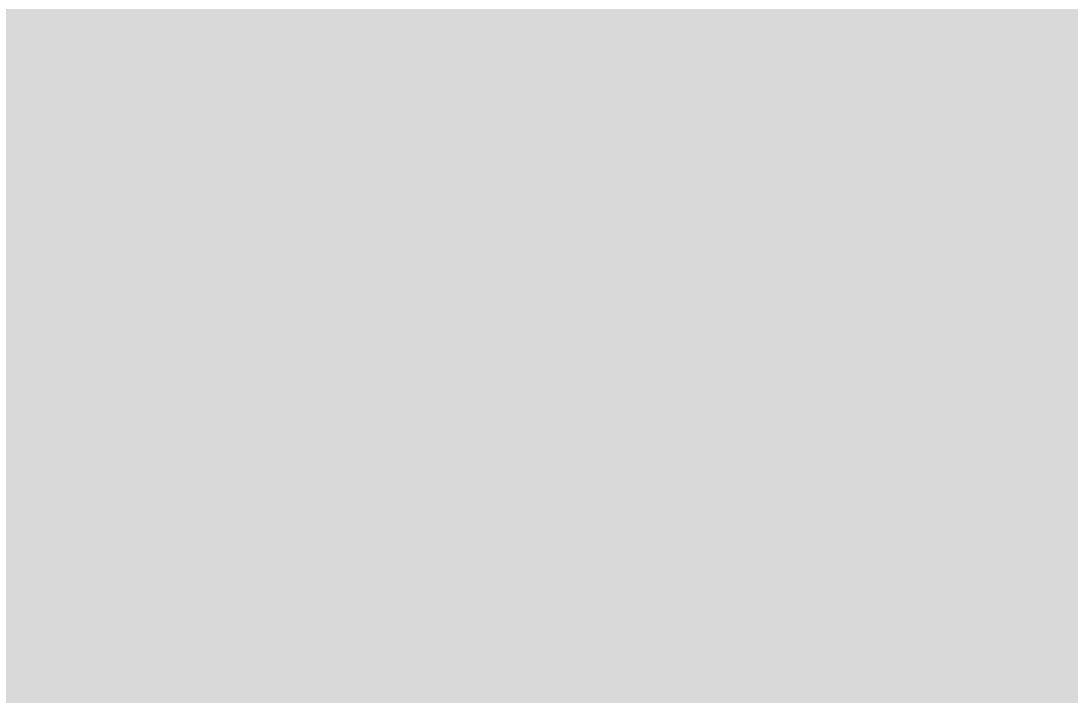


Fig. S6 ^{13}C NMR spectra of compound **DI-BCB-P** (500 MHz, CDCl_3).

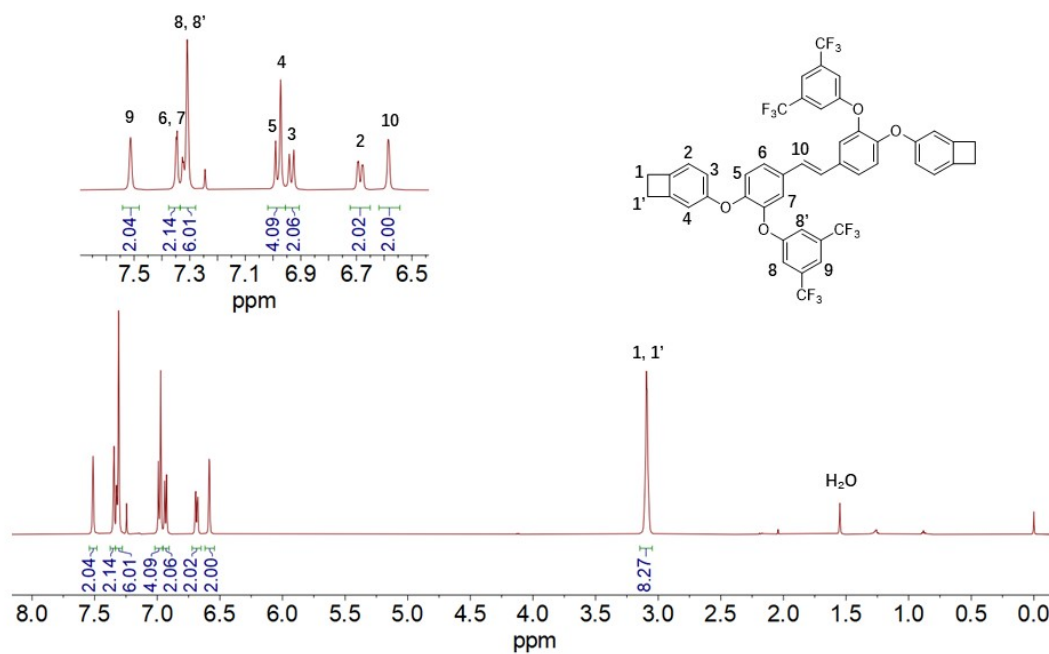


Fig. S7 ^1H NMR spectra of compound **DI-BCB-F** (500 MHz, CDCl_3).

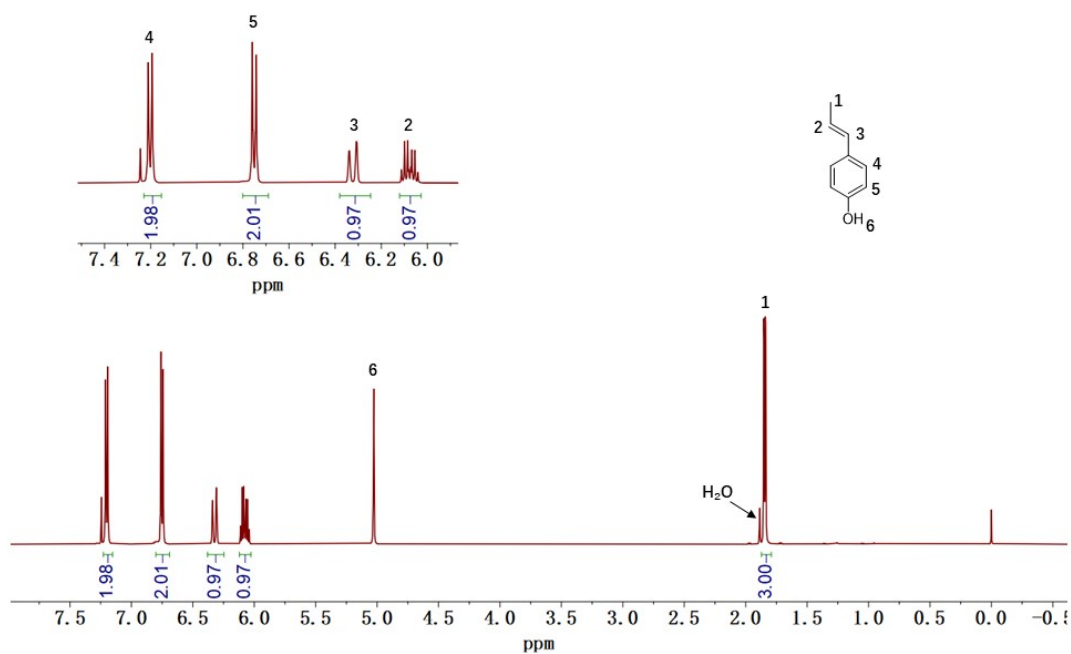


Fig. S8 ^1H NMR spectra of compound **AP** (500 MHz, CDCl_3).

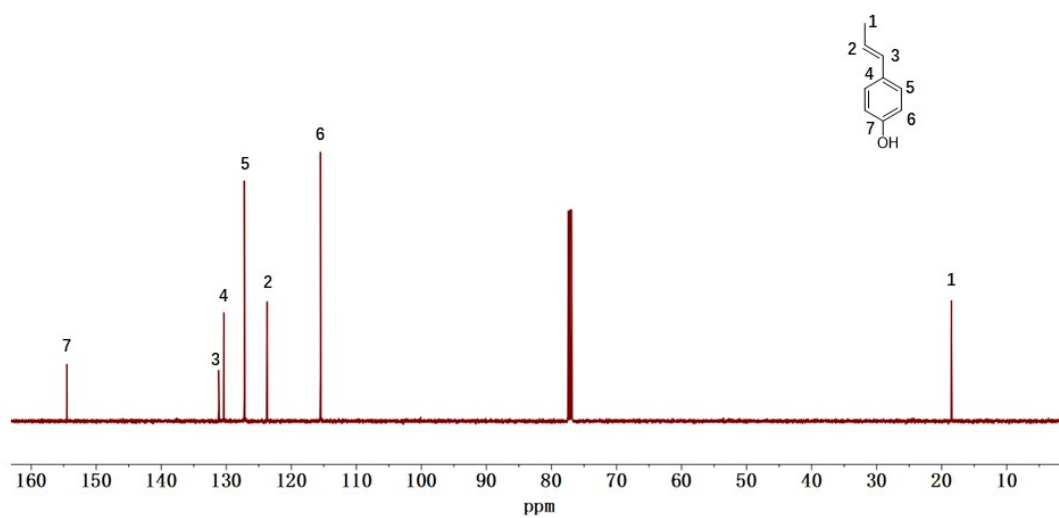


Fig. S9 ^{13}C NMR spectrum of compound **AP** (500 MHz, CDCl_3).

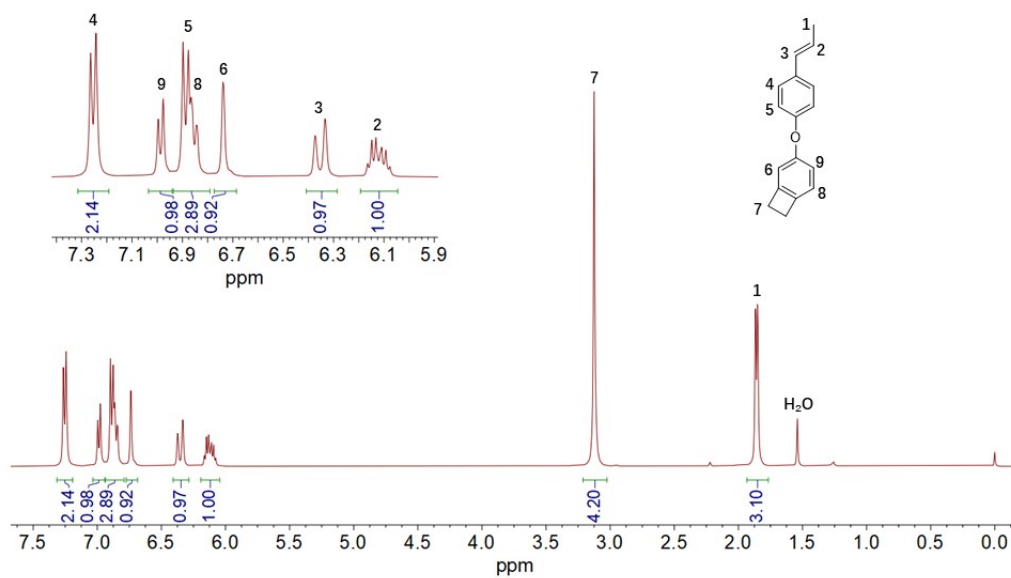


Fig. S10 ^1H NMR spectra of compound **A-BCB** (500 MHz, CDCl_3).

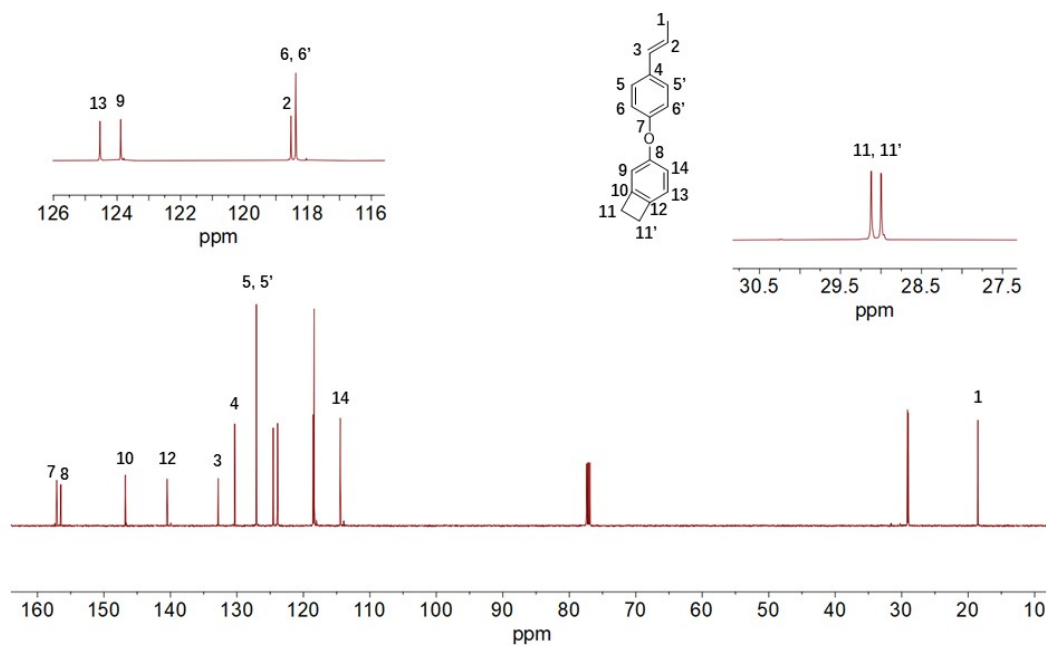


Fig. S11 ^{13}C NMR spectra of compound A-BCB (500 MHz, CDCl_3).

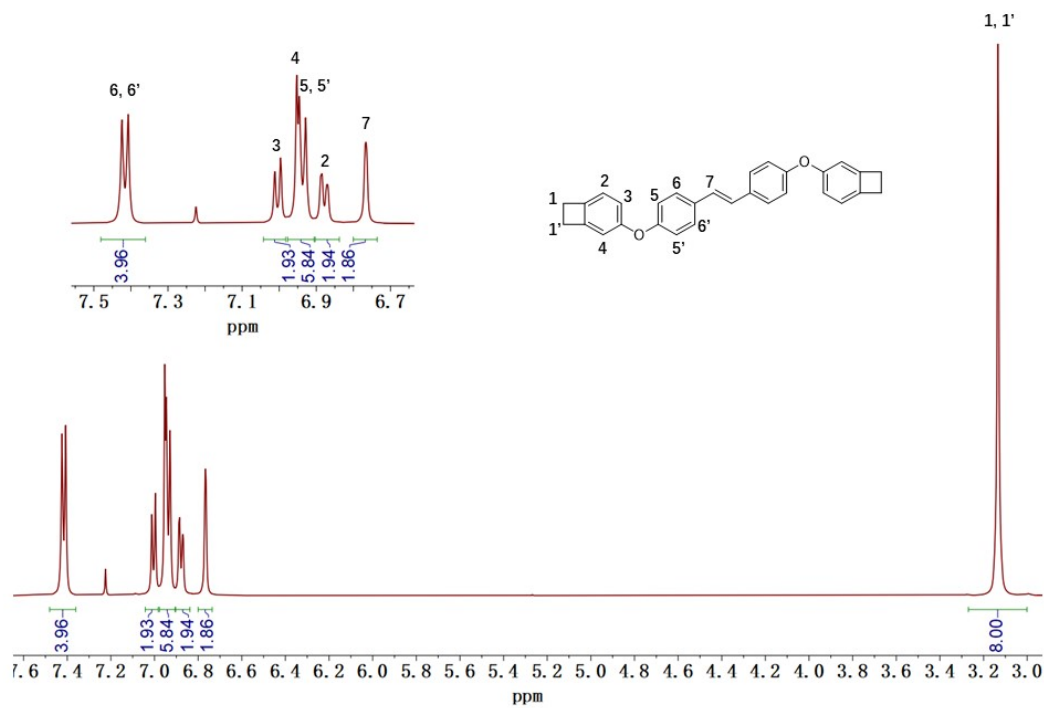


Fig. S12 ^1H NMR spectra of compound DA-BCB (500 MHz, CDCl_3).

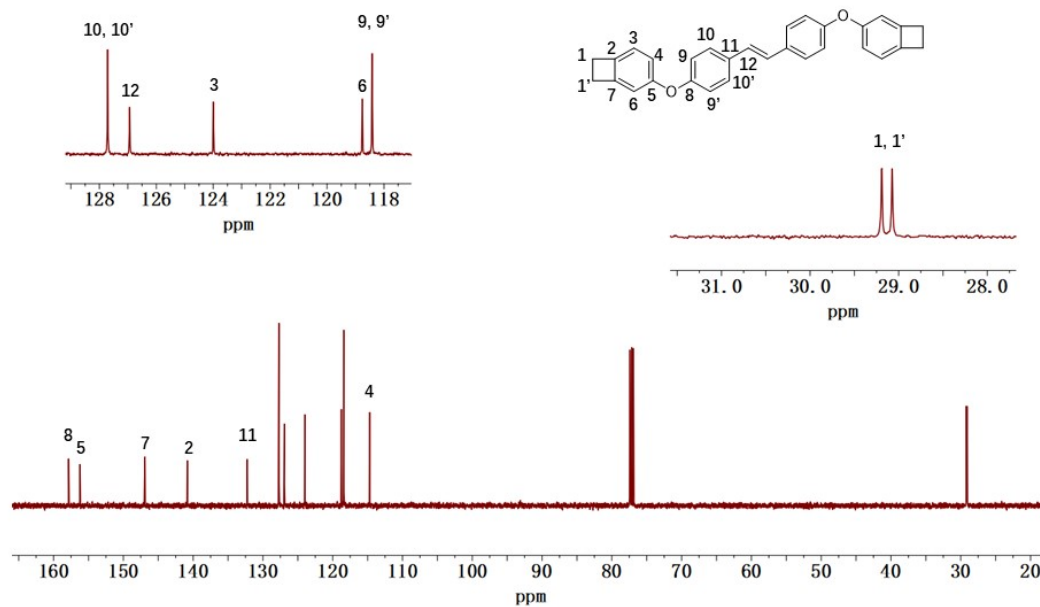


Fig. S13 ^{13}C NMR spectra of compound **DA-BCB** (500 MHz, CDCl_3).

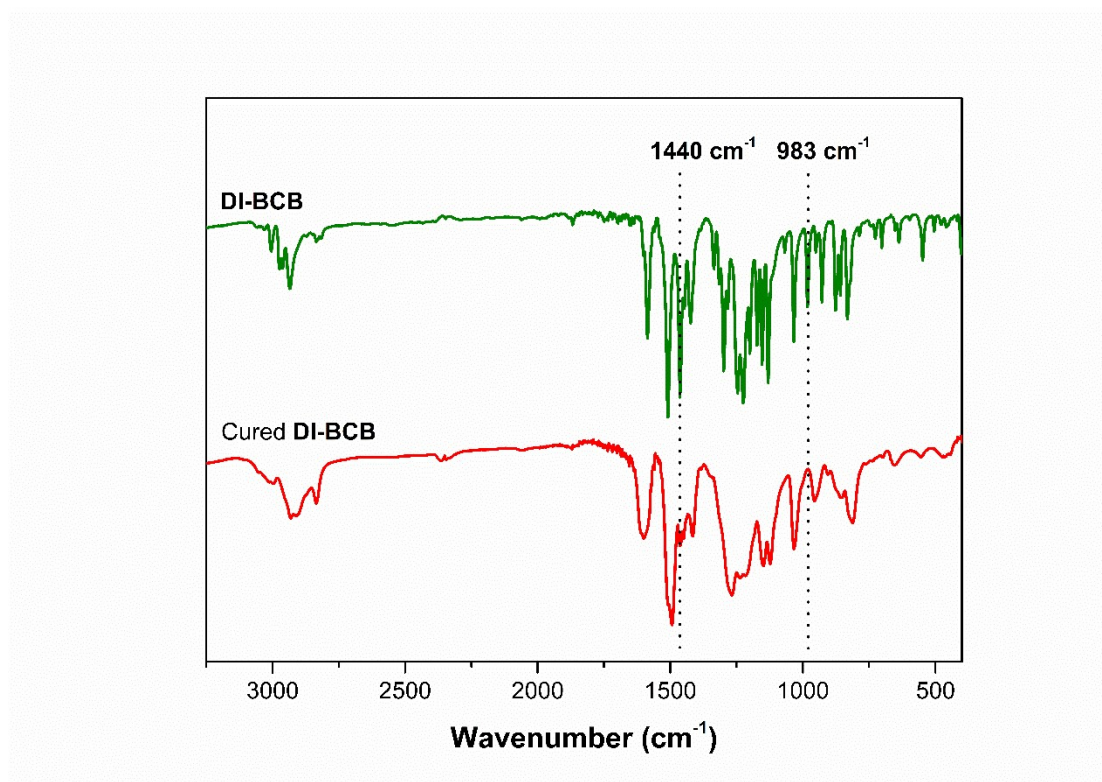


Fig. S14 FT-IR spectra of **DI-BCB** before and after curing.

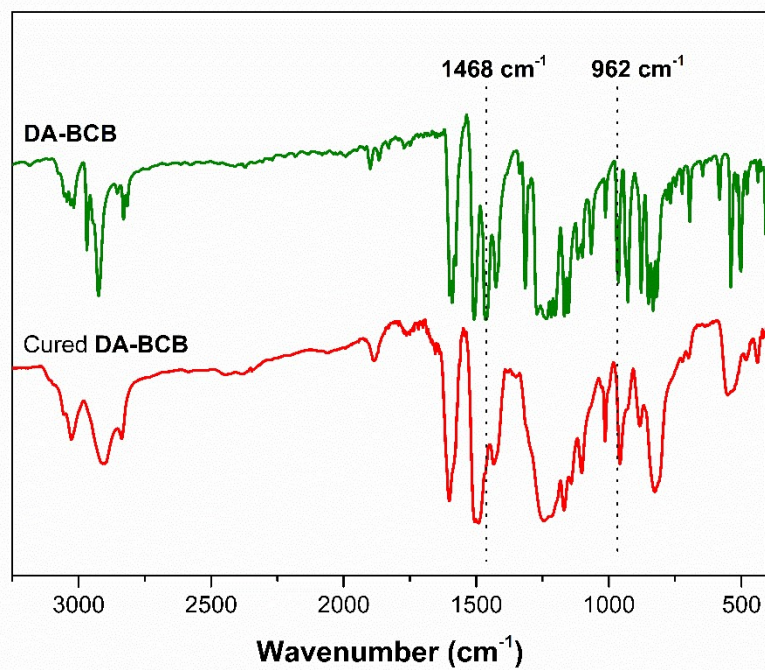


Fig. S15 FT-IR spectra of **DA-BCB** before and after curing.