

*Supplementary Information*

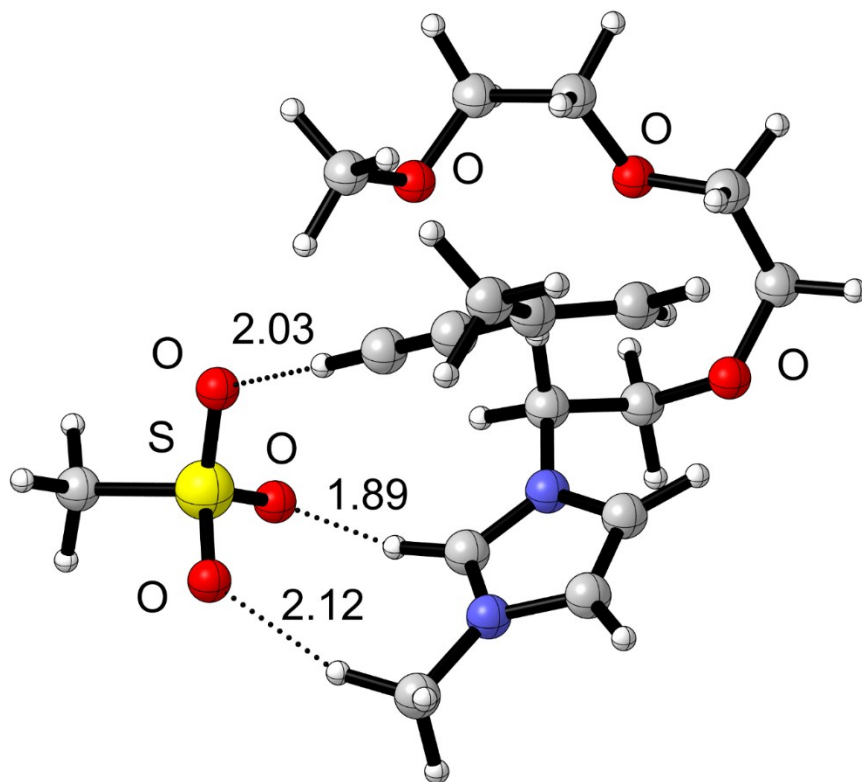
**Selective removal of alkynes from diene mixtures using ether-functionalized Cu(I)-containing ionic liquids as extractants†**

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**Fig. S1** A photograph of the equipment used for the alkyne extraction experiments.



**Fig. S2** Optimized microstructures showing the interaction of  $E_3A$  with IPA ( $\Delta H = -0.5 \text{ kcal mol}^{-1}$ ),

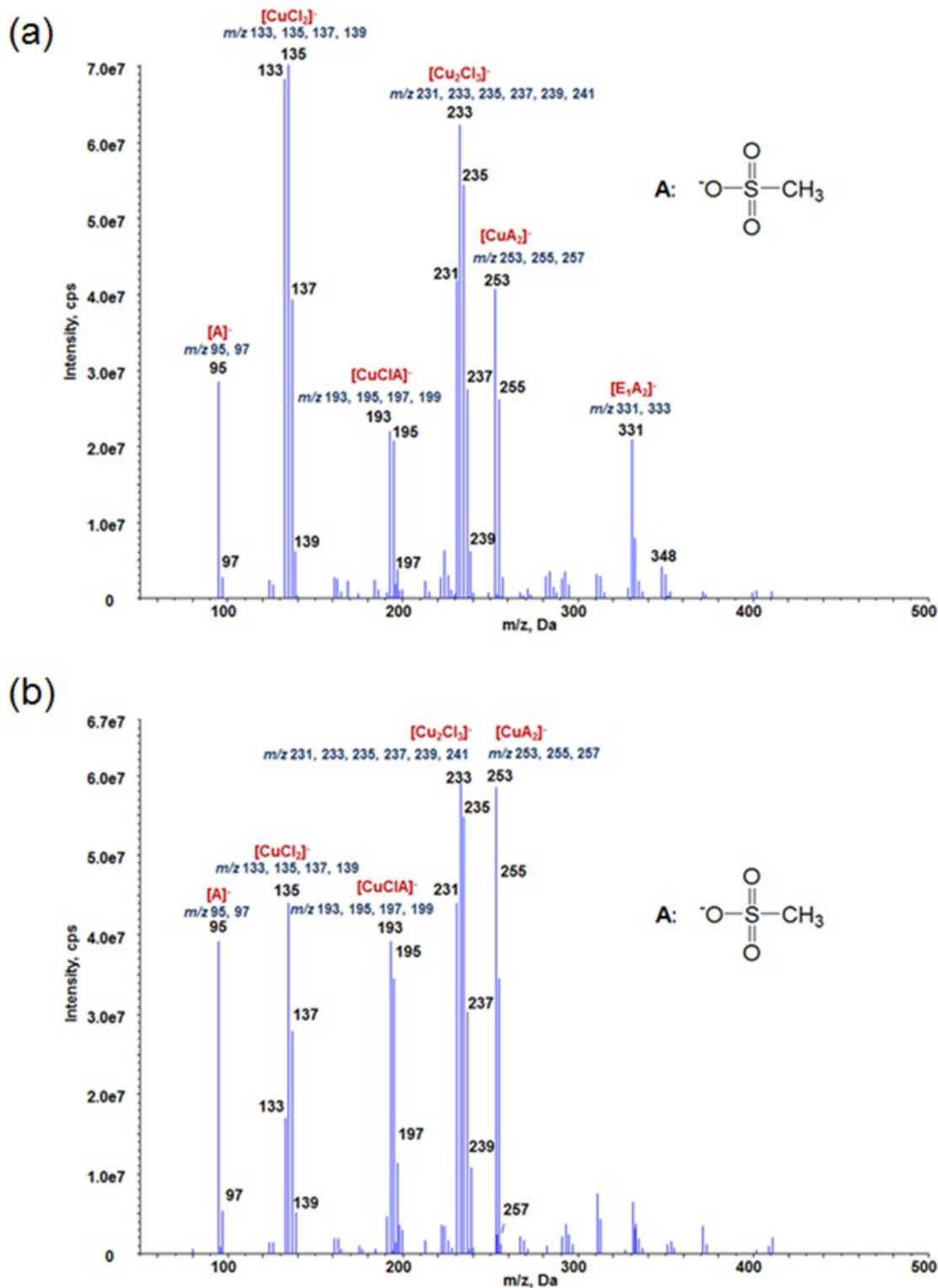
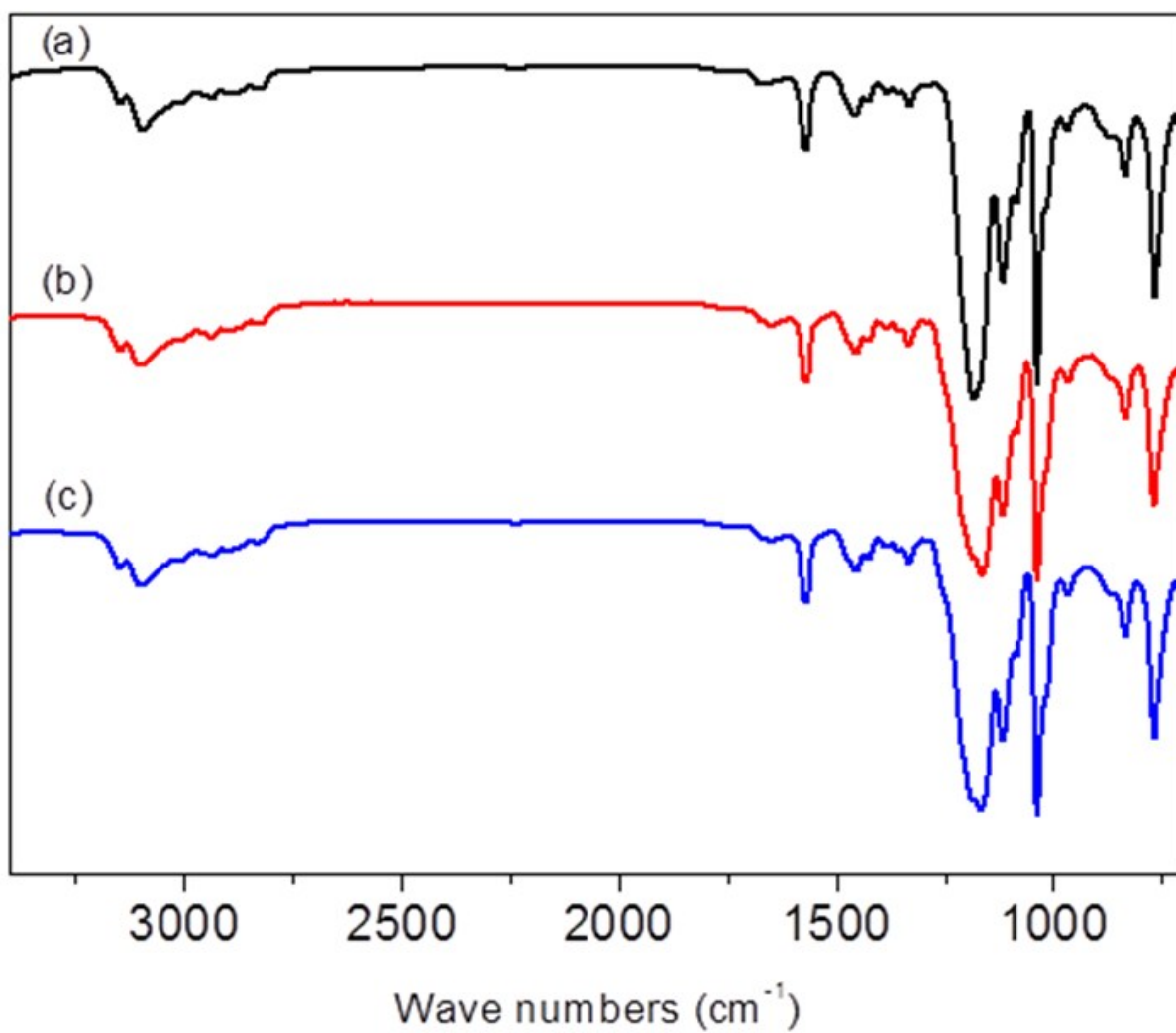


Fig. S3 FAB-mass spectra of (a) Cu- $E_1A$  (molar ratio of  $E_1A/CuCl = 1$ ) and (b) Cu- $E_1A$  (molar ratio of  $E_1A/CuCl = 2$ ).



**Fig. S4** FT-IR spectra of (a)  $E_1A$  , (b)  $Cu-E_1A$  (molar ratio of  $E_1A/CuCl = 2$ ), and (c)  $Cu-E_1A$  (molar ratio of  $E_1A/CuCl = 3$ ).