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Supporting Information

Halogen-Free Ionic Liquids: Effect of Chelated Orthoborate Anion Structure on their Lubrication Properties

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Table S1: Physico-chemical properties of lubricants used for the tribo-evaluation

Lubricant	Kinematic Viscosity, mm^2s^{-1}		Viscosity Index
	At 40 °C	At 100 °C	
PEG 200	22.4	4.1	70
2 wt% TBA-BMdB	23.27	4.09	73
2 wt% TBA-BScB	23.38	4.33	80
2 wt% TBA-BMlB	22.84	4.08	76
2 wt% TBA-BOxB	23.27	4.10	74
2 wt% TBA-BF_4	22.74	4.08	77

Figure S1

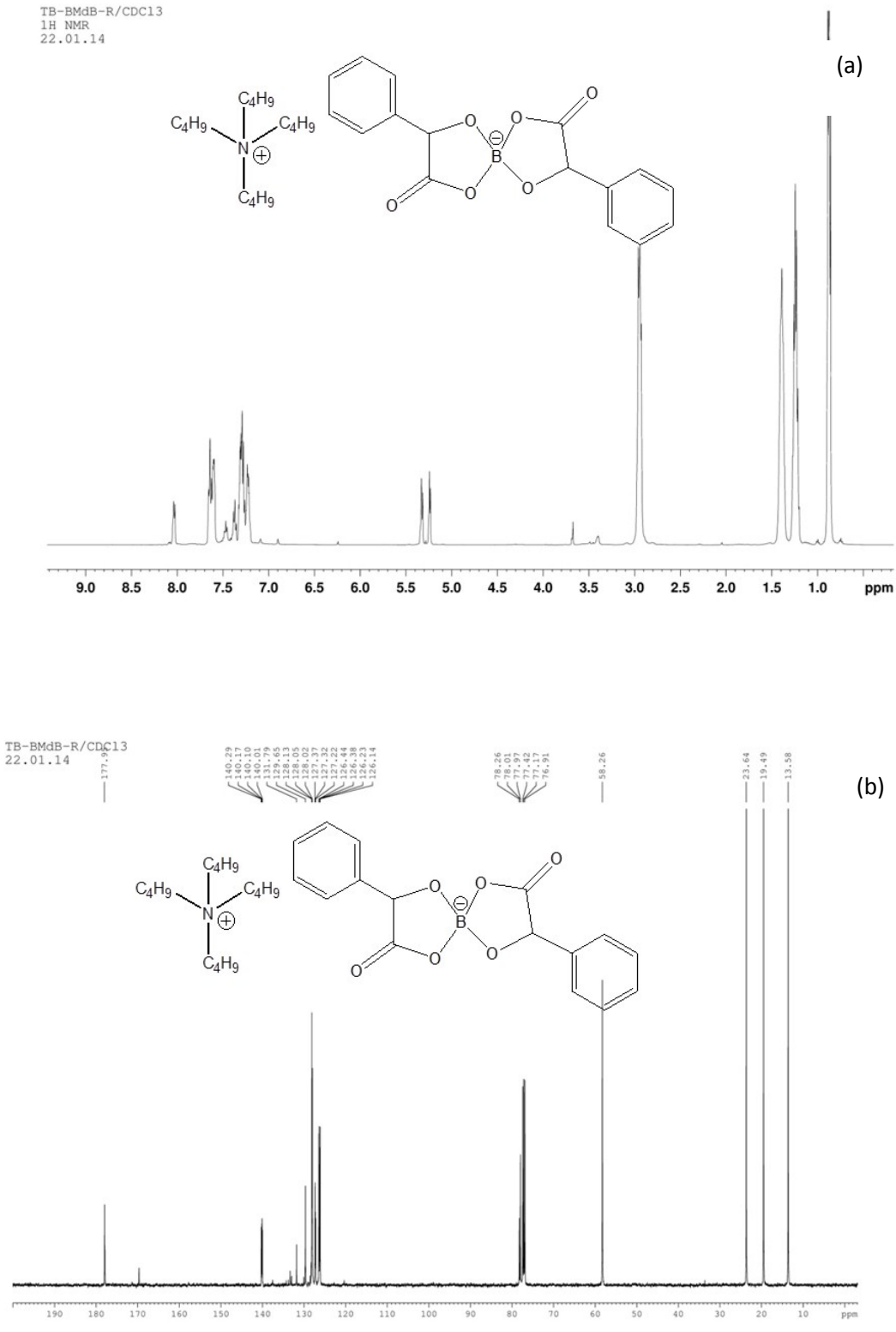

Figure S1: (a) ^{1}H and (b) ^{13}C NMR spectra of TBA-BMdB ionic liquid.

Figure S2

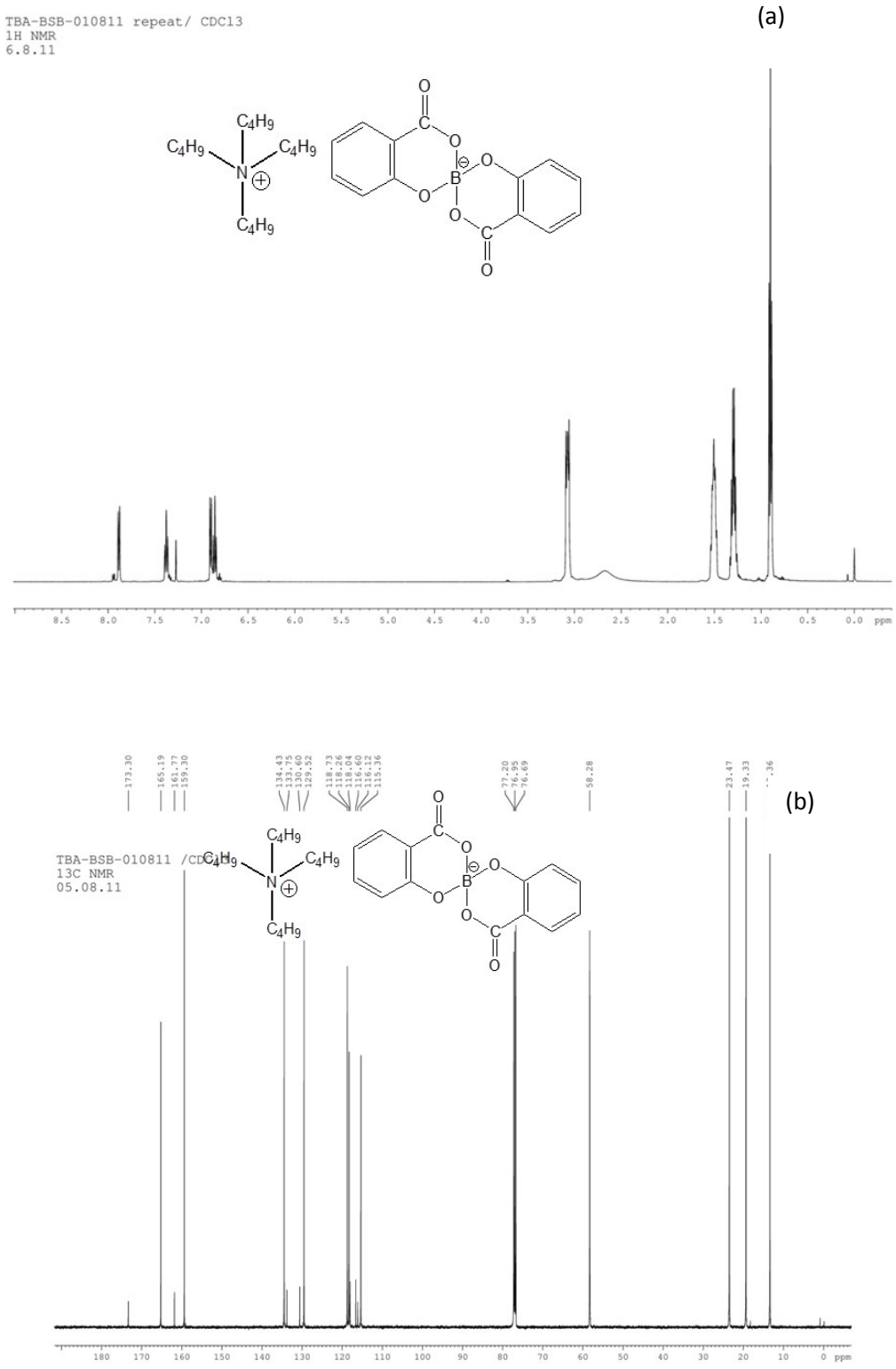

Figure S2: (a) ^{1}H and (b) ^{13}C NMR spectra of TBA-BScB ionic liquid.

Figure S3

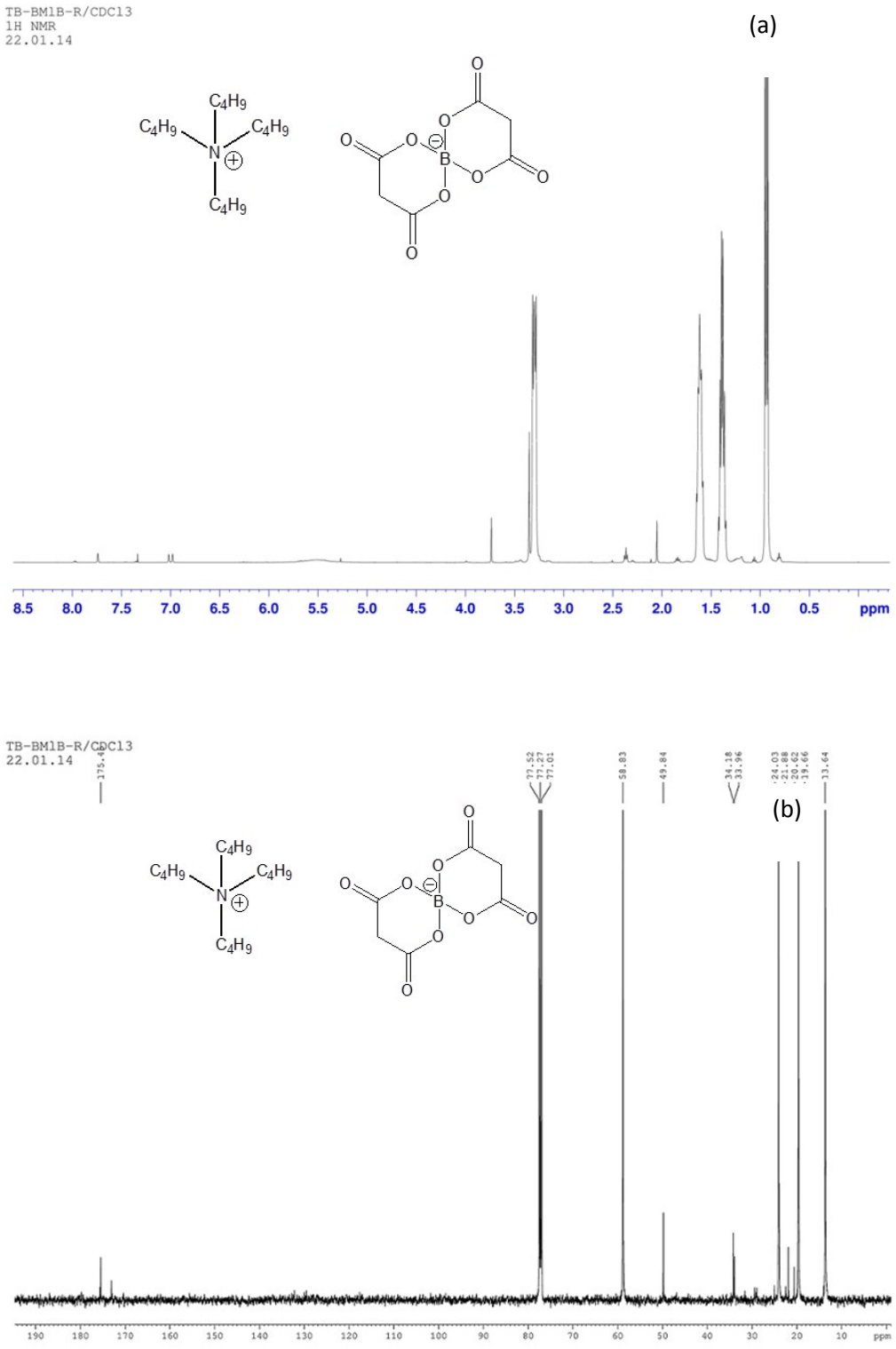

Figure S3: (a) ^{1}H and (b) ^{13}C NMR spectra of TBA-BMlB ionic liquid.

Figure S4

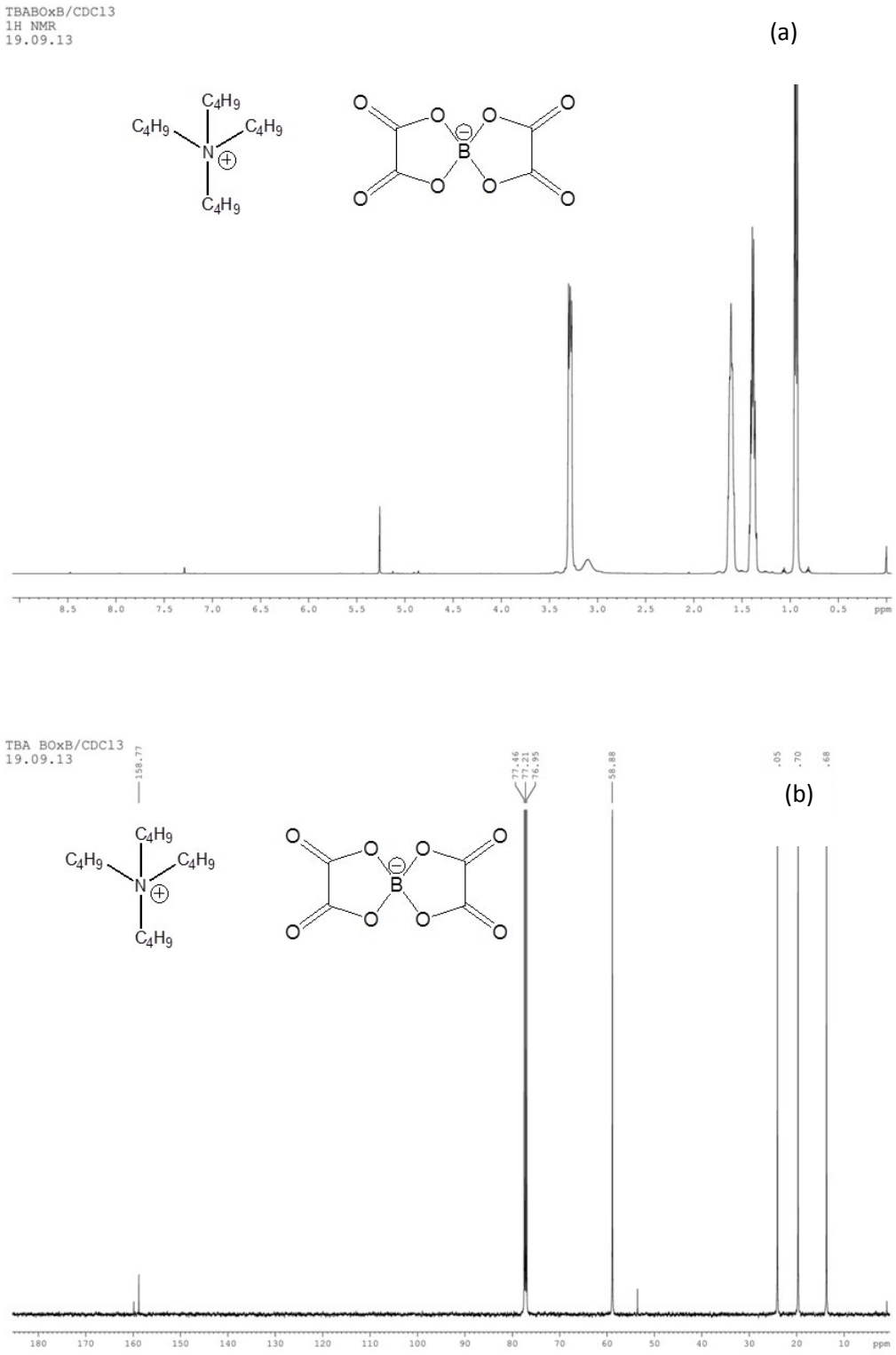

Figure S4: (a) ^{1}H and (b) ^{13}C NMR spectra of TBA-BOxB ionic liquid.

Figure S5

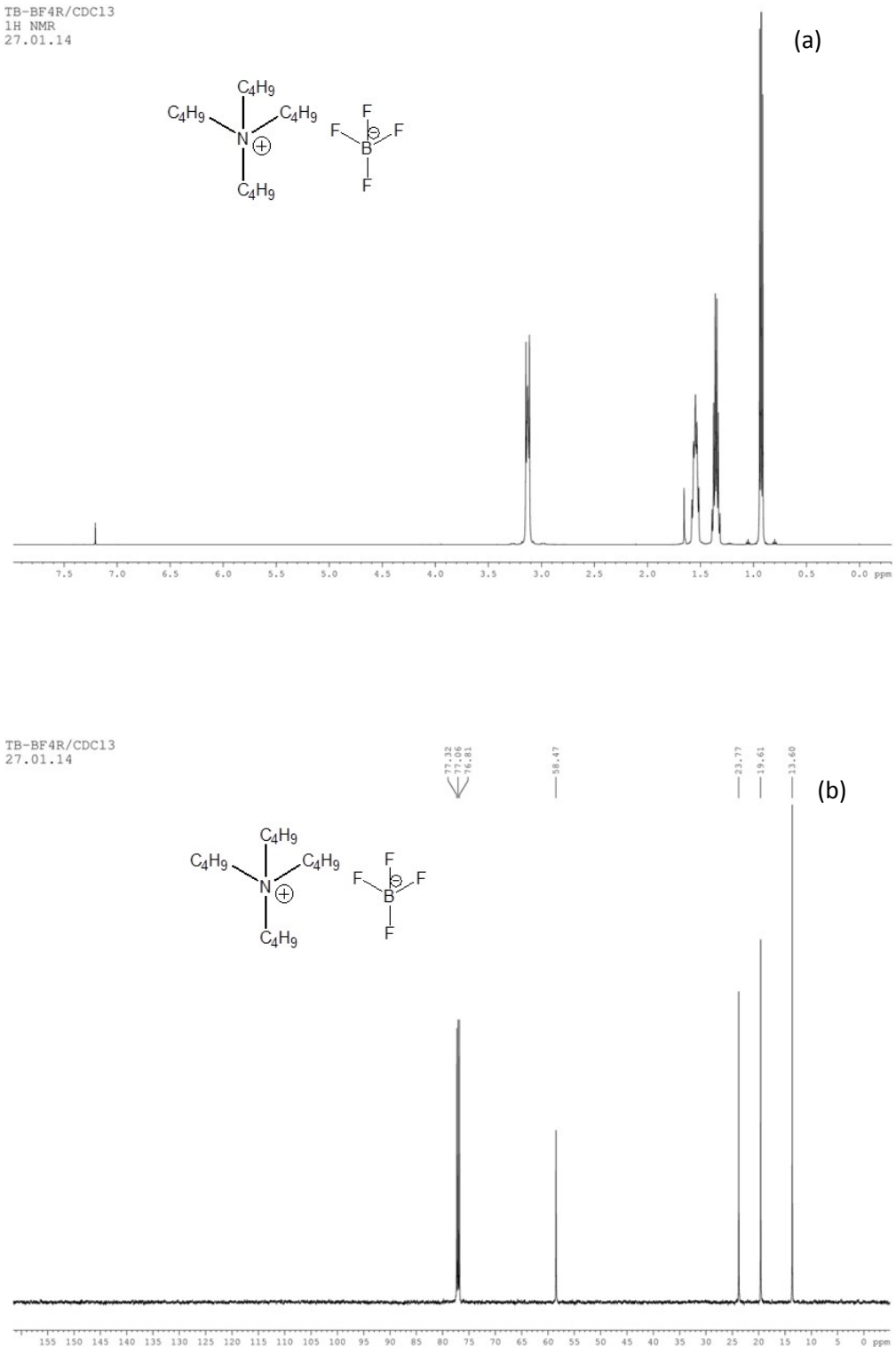

Figure S5: (a) ^{1}H and (b) ^{13}C NMR spectra of TBA-BF_4 ionic liquid.

Figure S6

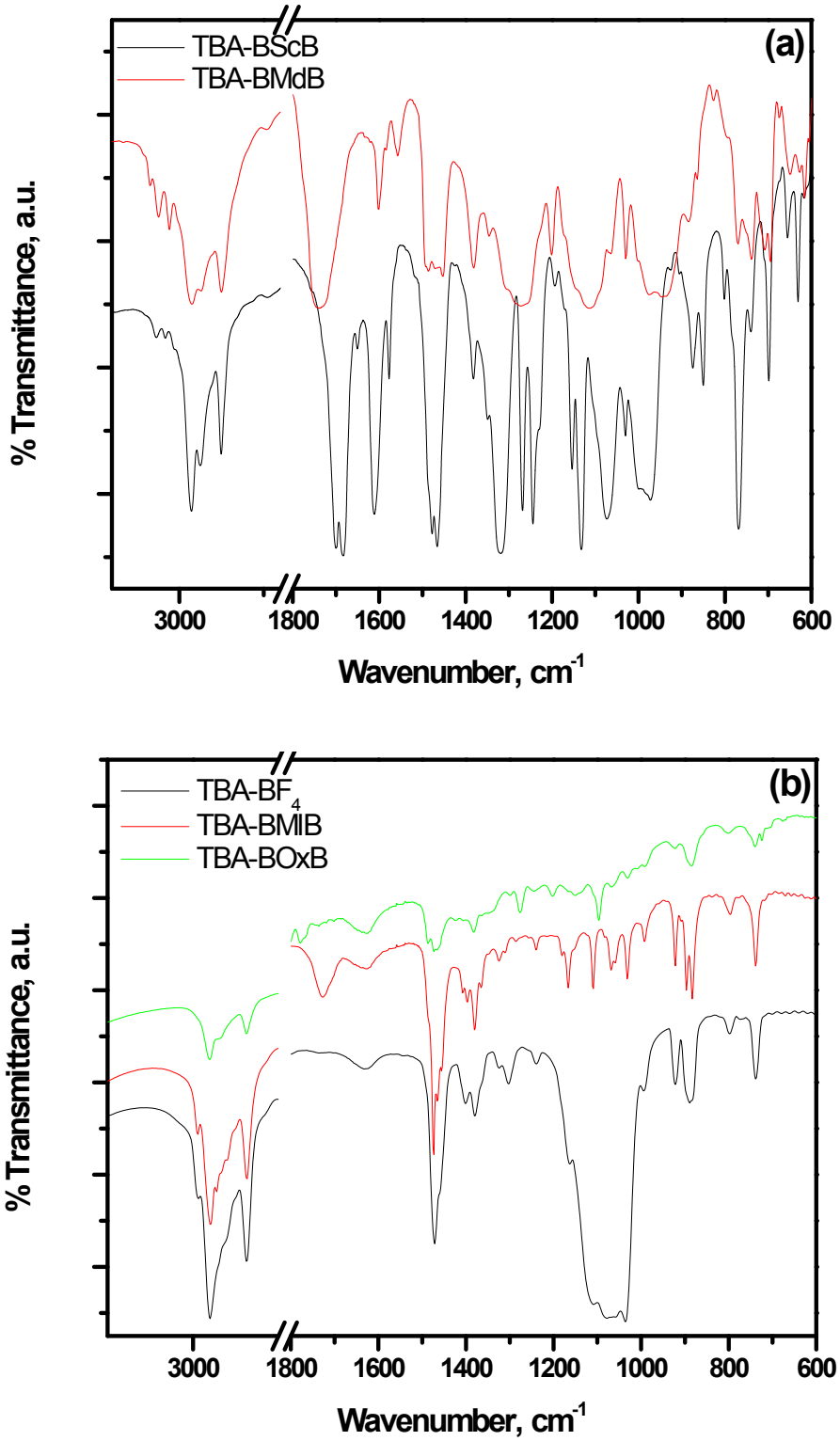

Fig S6: FTIR spectra of (a) TBA-BScB and TBA-BMdM; (b) TBA-BMlB, TBA-BOxB and TBA-BF_4 ionic liquids.