

Electronic Supplementary Material (ESI) for RSC Advances

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Brønsted acidic ionic liquids of aza-crown ether complex cations: Preparation and applications in organic reactions

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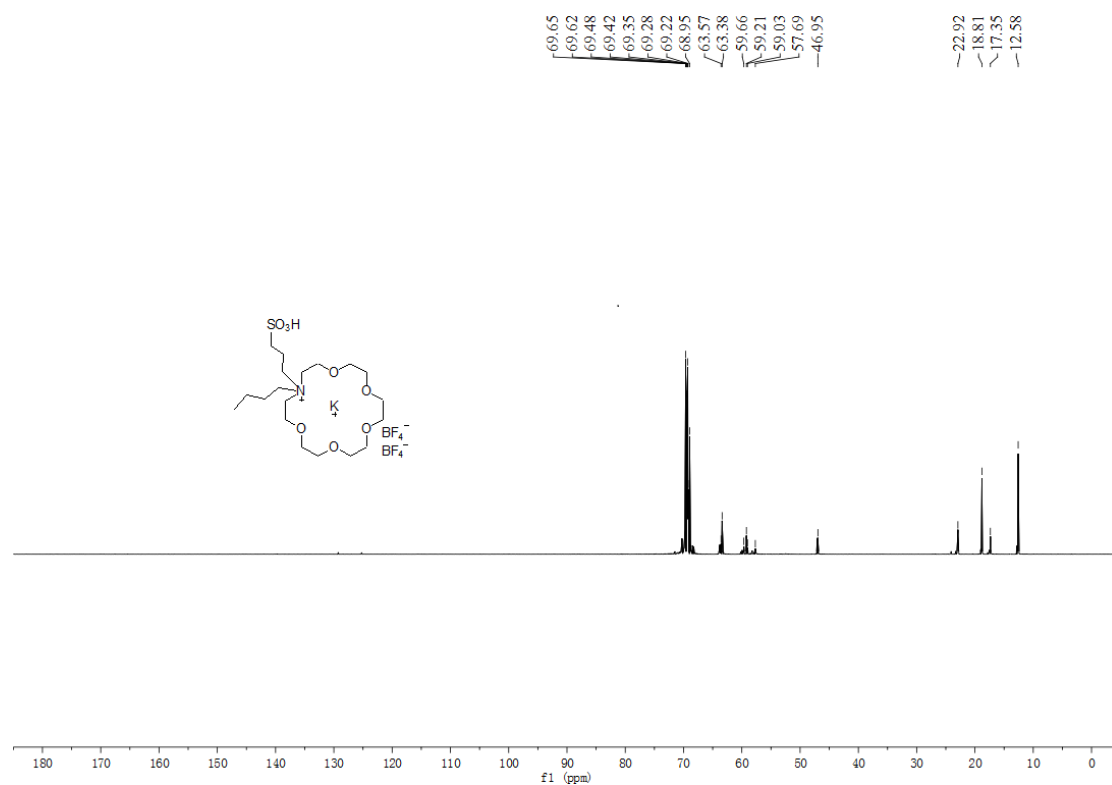
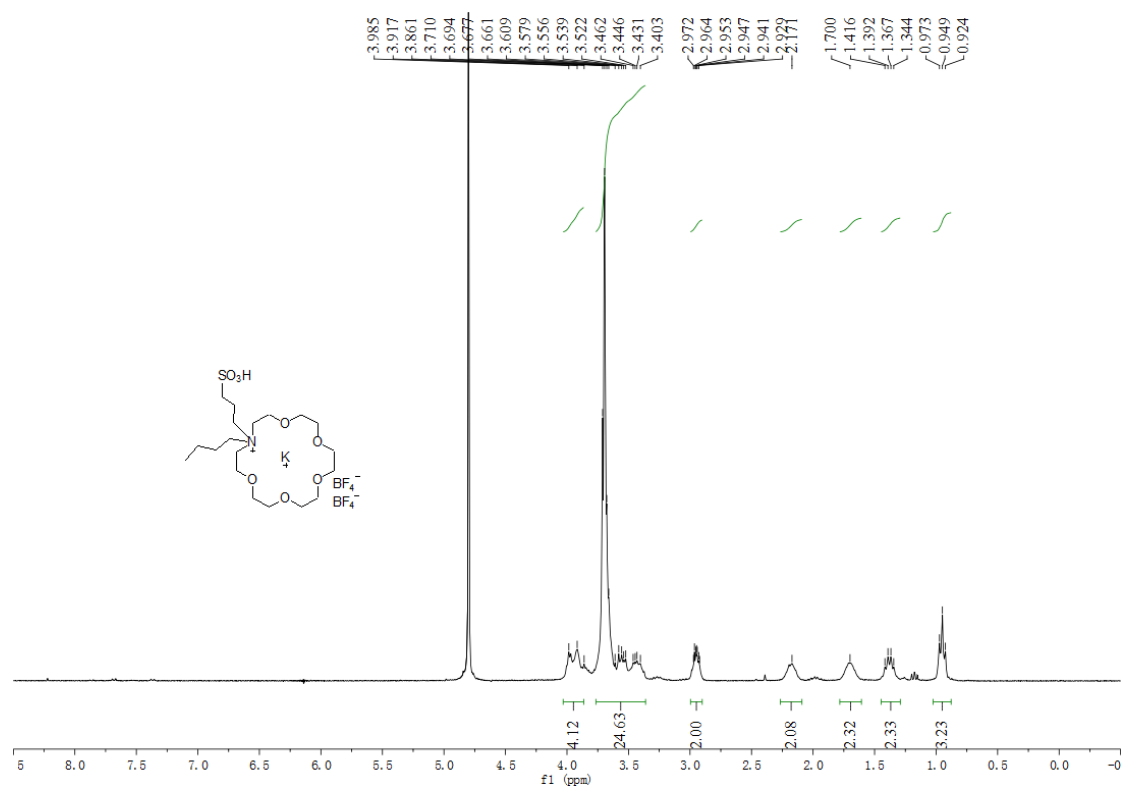
Chemical structure of the potassium ionophore (18-crown-6 derivative) is shown in the top left. The structure features a crown ether ring with a sulfonate group (SO_3H) and a potassium ion (K^+) complexed within the ring. The bromide counterion (Br^-) is also present.

The ^1H NMR spectrum (DMSO- d_6) shows the following peaks and integrations:

Chemical Shift (ppm)	Integration
3.951, 3.904, 3.851, 3.677, 3.571, 3.549, 3.525, 3.509, 3.450, 2.926	4.05
2.159	23.99
1.690, 1.387, 1.369, 1.345, 1.322, 0.957, 0.934, 0.911	1.93
22.78, 18.61, 17.24, 12.53	1.91
69.89, 69.38, 69.12, 69.11, 69.08, 68.69, 68.21, 63.38, 63.14, 59.64, 58.92, 58.07, 57.75, 46.84	2.00
2.16	3.01

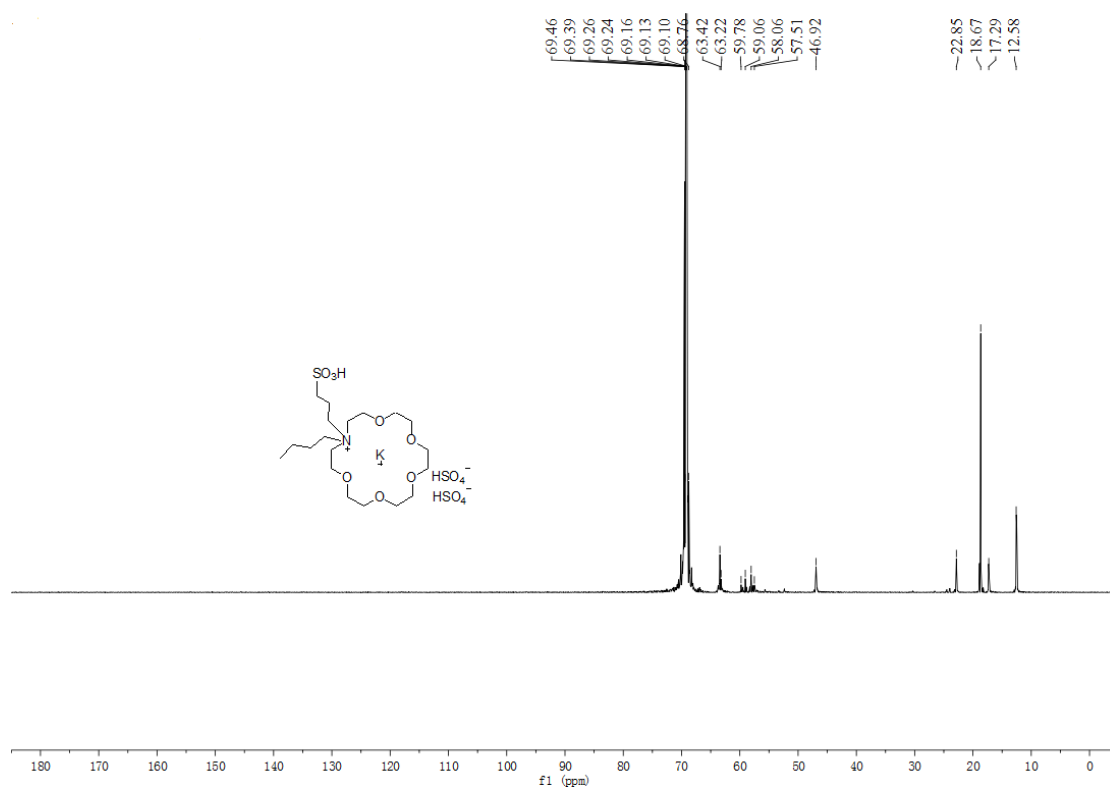
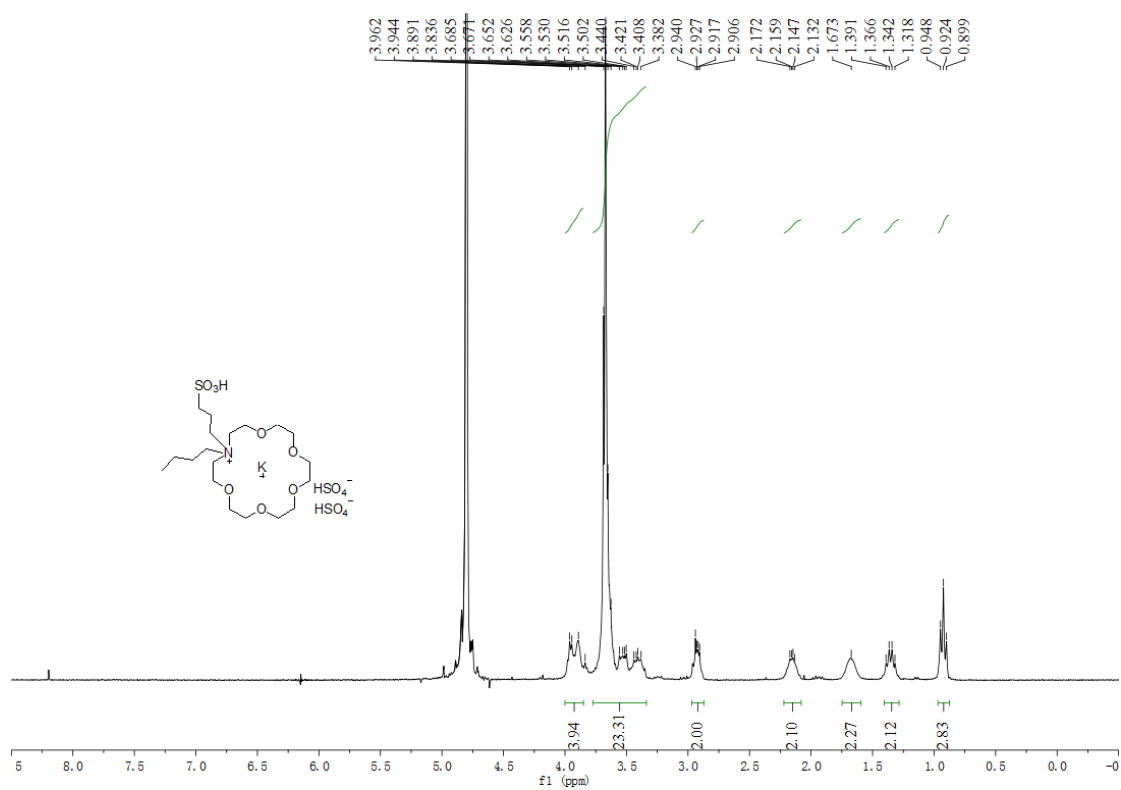


NMR Spectra of aCECIL-2: D₂O as solvent





NMR Spectra of aCECIL-4: D₂O as solvent



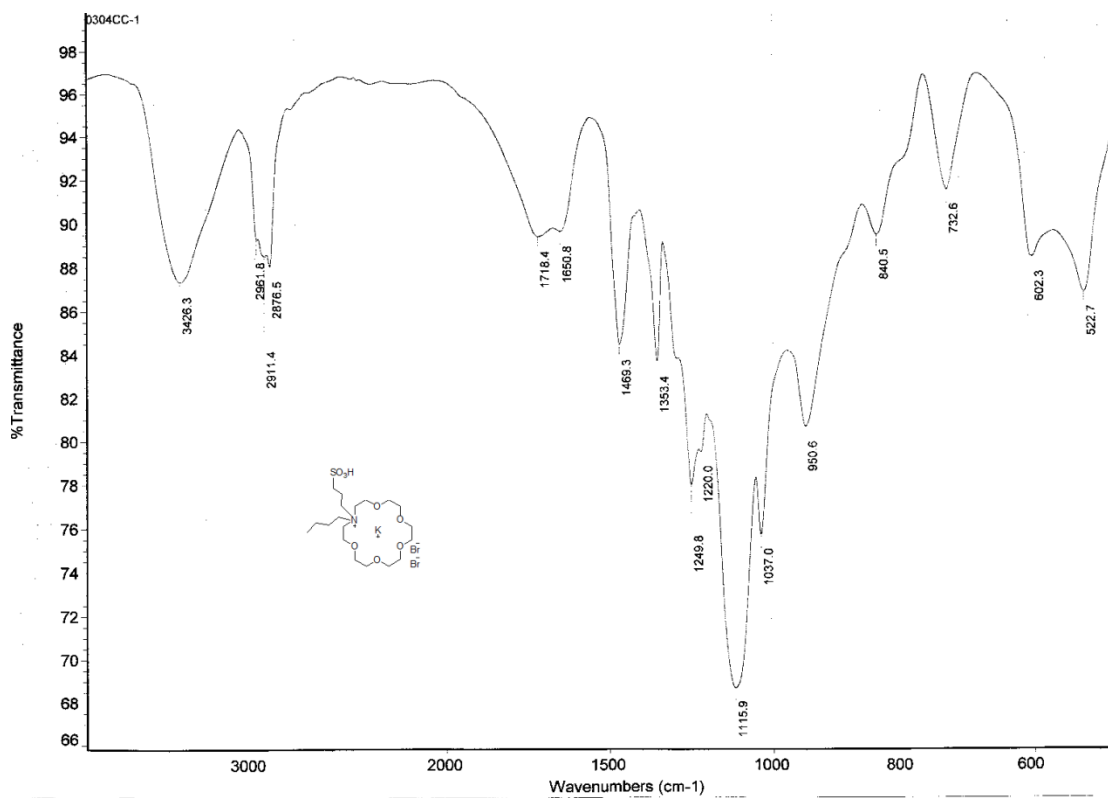
Chemical structure of compound 1 is shown in the top left. The structure is a macrocyclic crown ether with a potassium cation (K^+) inside. The crown ether has a propyl chain and a sulfonic acid group (SO_3H) attached to one of the oxygen atoms. The crown ether is also substituted with two trifluoroacetate groups (CF_3COO^-).

1H NMR spectrum (DMSO- d_6) of compound 1. The x-axis represents the chemical shift in ppm, ranging from 0 to 10. The y-axis represents the intensity of the signal. The spectrum shows several peaks, with the following chemical shifts (ppm) and integration values:

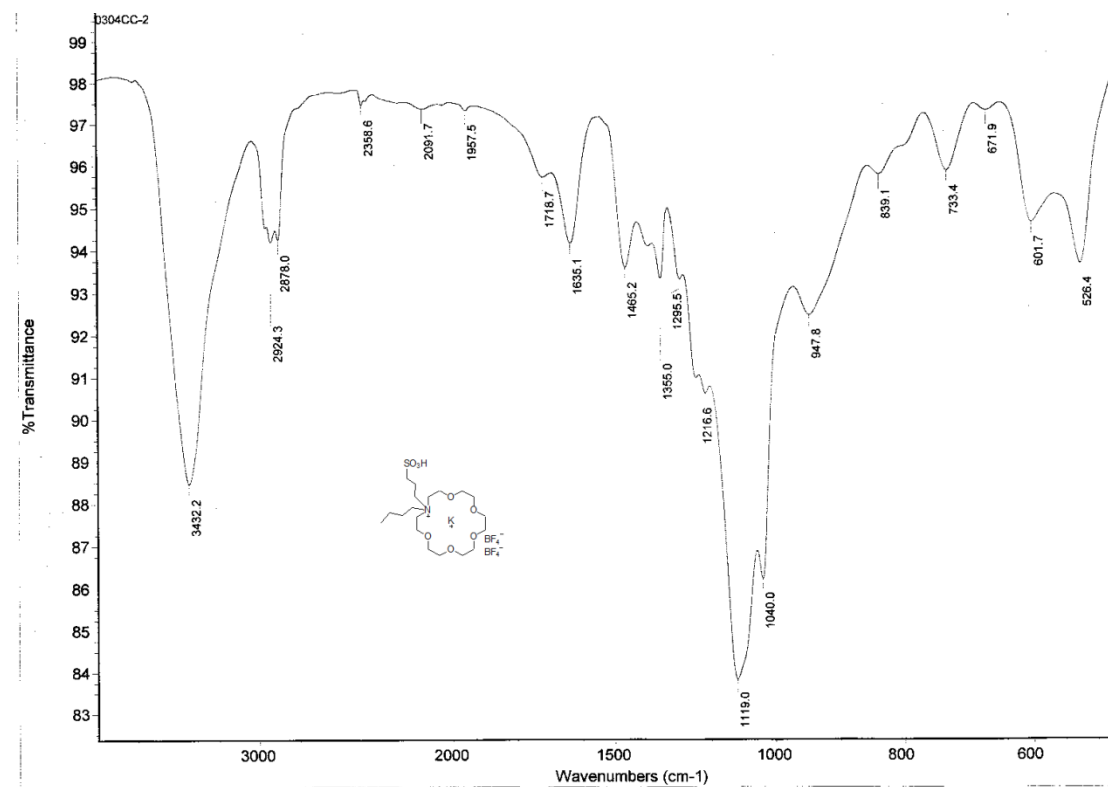
Chemical Shift (ppm)	Integration
3.943	4.00
3.926	4.00
3.874	4.00
3.818	4.00
3.667	4.00
3.653	4.00
3.634	4.00
3.541	4.00
3.512	4.00
3.498	4.00
3.485	4.00
3.422	4.00
3.404	4.00
3.391	4.00
3.364	4.00
2.941	24.29
2.922	24.29
2.907	24.29
2.899	24.29
2.889	24.29
2.154	2.25
2.139	2.25
2.129	2.25
1.656	2.22
1.372	2.35
1.347	2.35
1.323	2.29
1.299	2.29
0.930	3.09
0.906	3.09
0.881	3.09



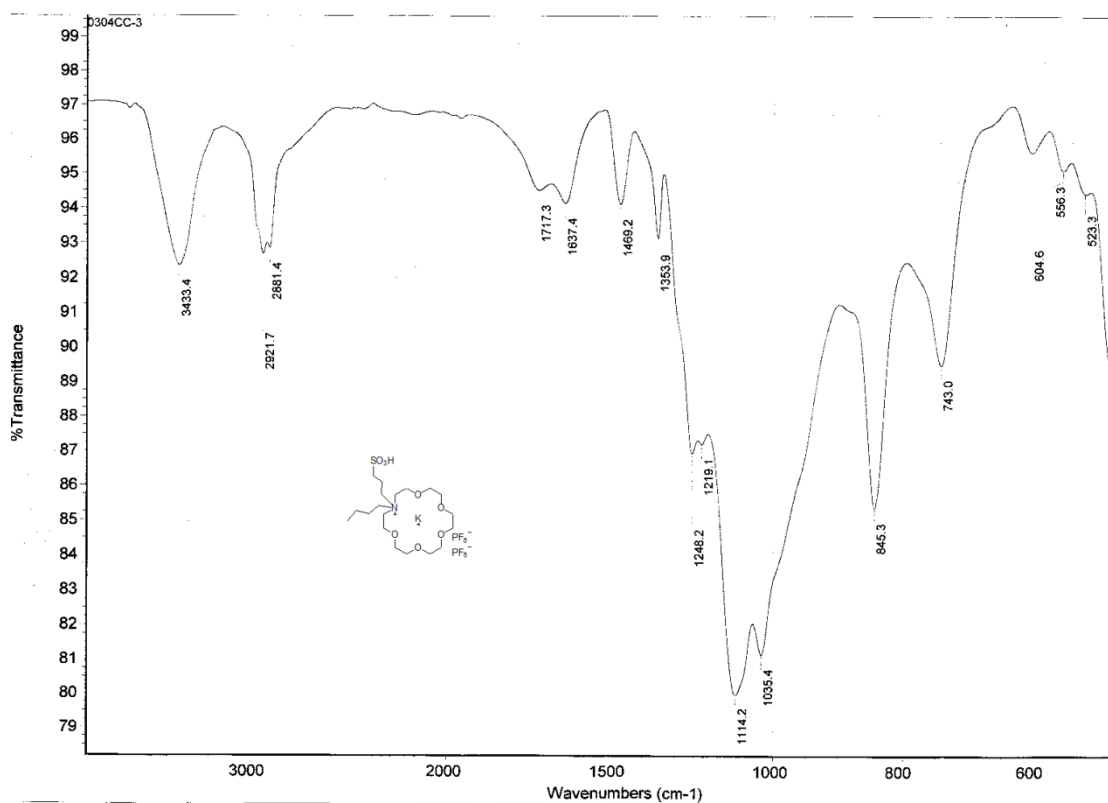
IR Spectra of aCECIL-1



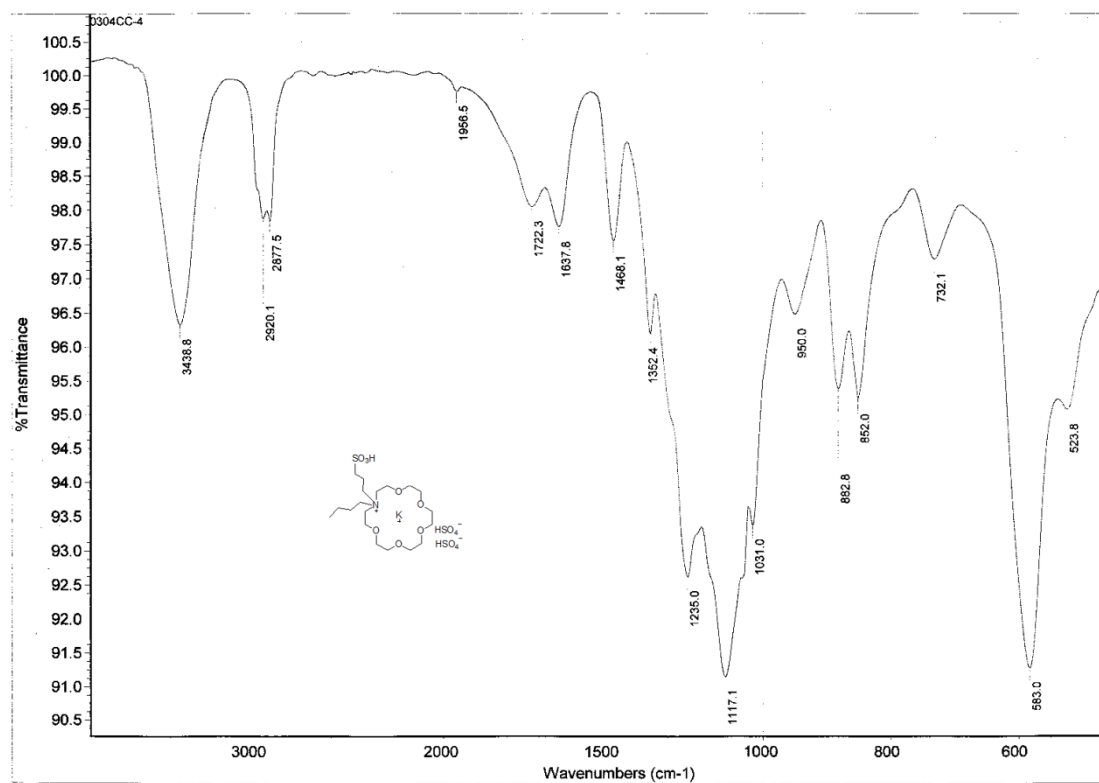
IR Spectra of aCECIL-2



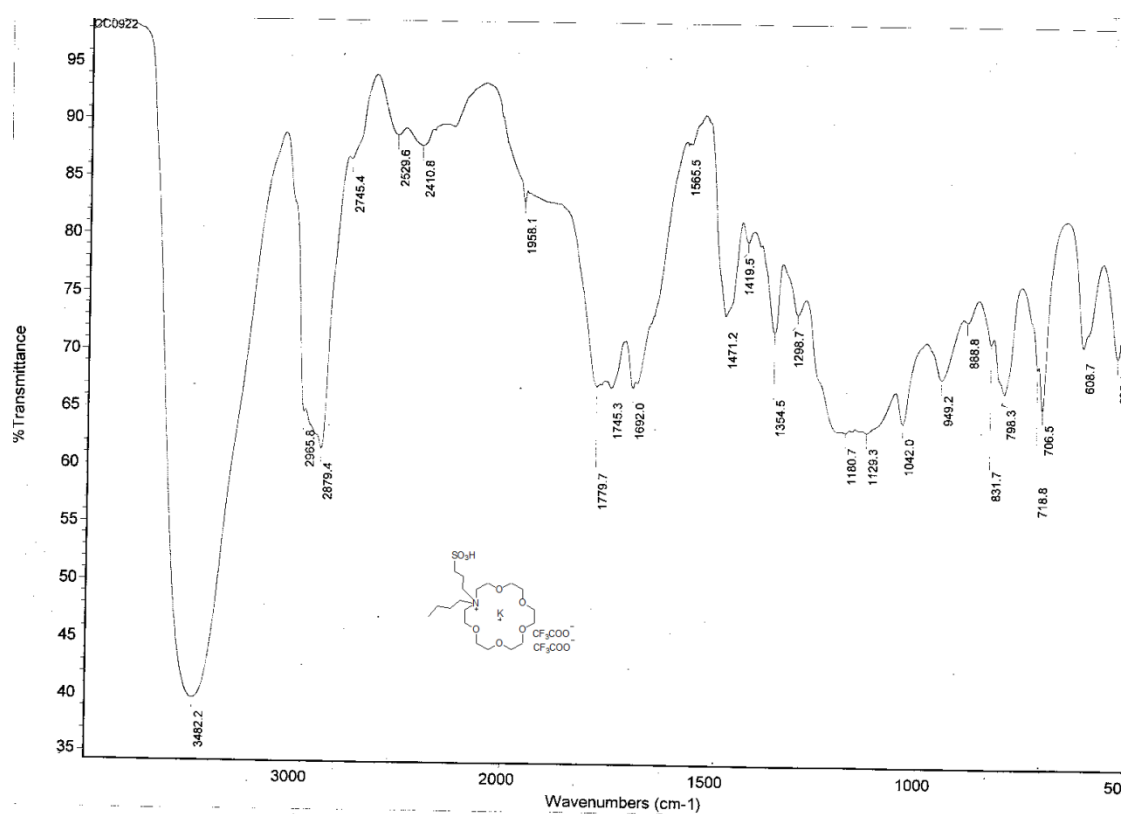
IR Spectra of aCECIL-3



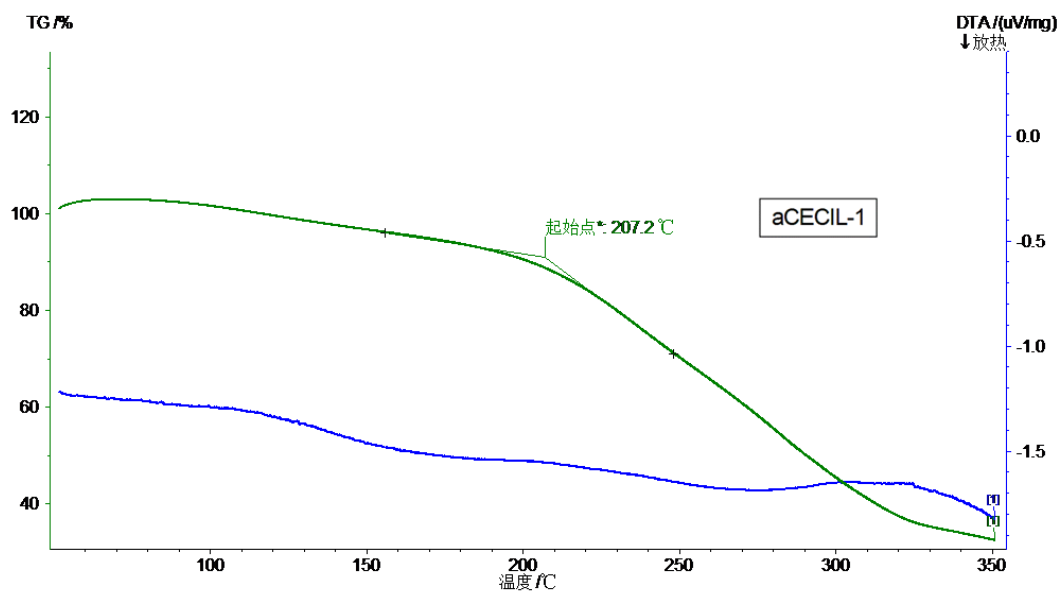
IR Spectra of aCECIL-4

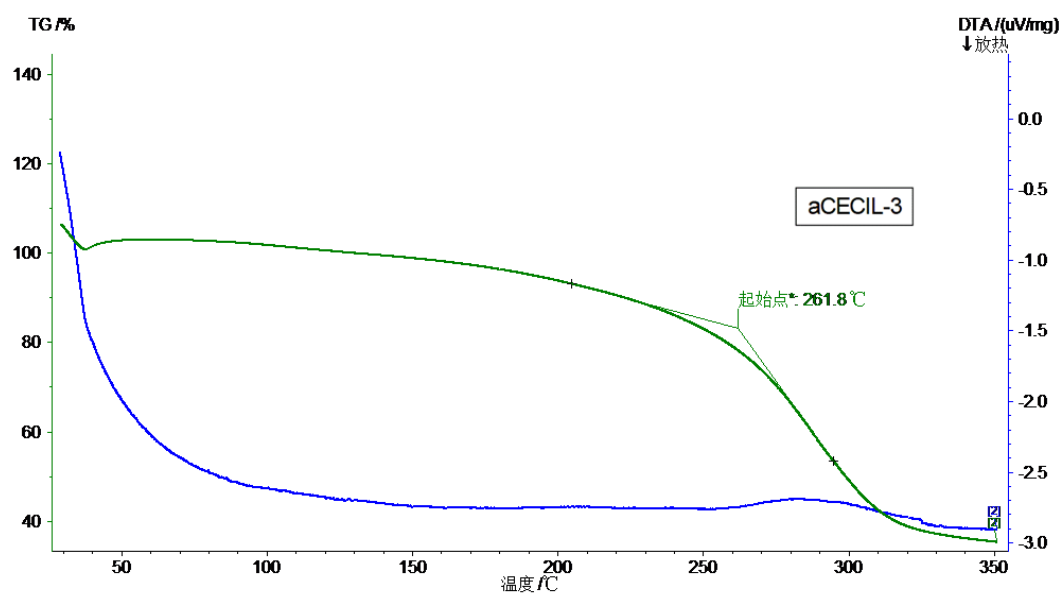
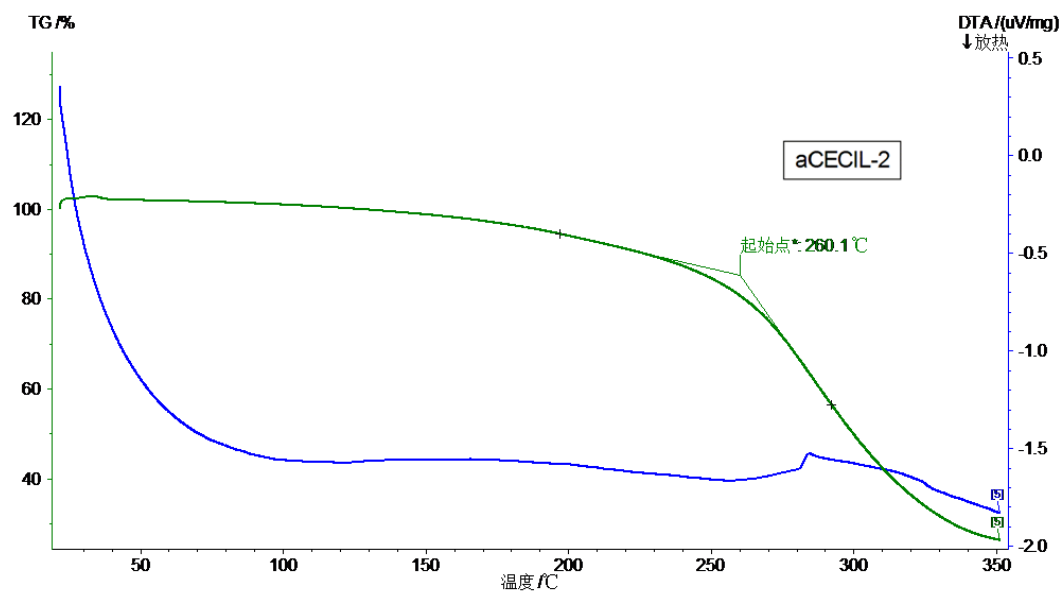


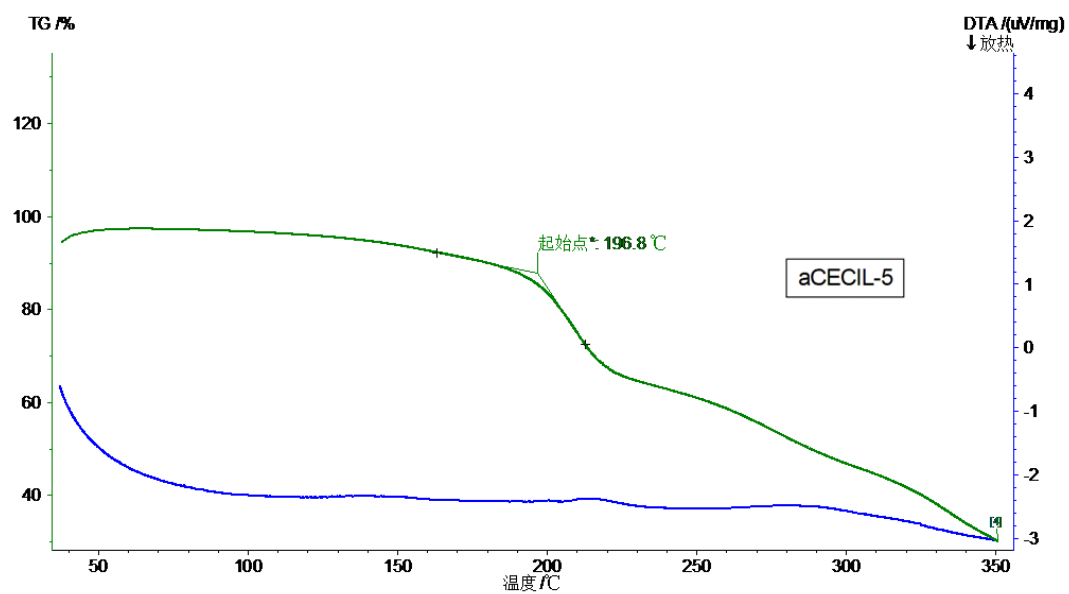
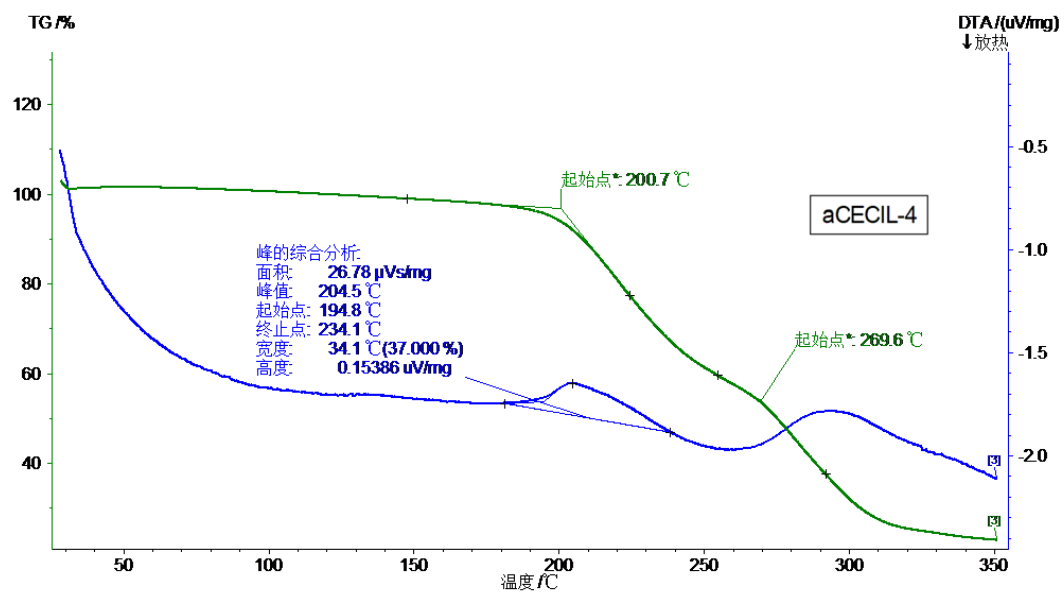
IR Spectra of aCECIL-5



TG of aCECIL-1~5







Generic Display Report

Analysis Info

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Method LOWmass.m
Sample Name default
Comment

Acquisition Date 5/22/2013 16:18:22

Operator ESQ6K
Instrument esquire6000

