Materials
All ionic liquid samples including [C8MIm] BF₄ were prepared in our laboratory via established literature methods.¹ Residual halide ions from the immediate synthetic precursor [C8MIm] Cl, were removed by sequential washing with water before drying in-vacuo for 24 hrs (65 °C, 3 × 10⁻² mbar). Prior to investigation in UHV, [H₂O] < 30 ppm. The purity of all samples was also assessed by ¹H, ¹³C NMR, and coulometric Karl Fischer. All spectroscopic data being consistent with that already published.¹

14/02/07: Cooling clean IL in UHV with charge neutraliser off; then turning neutraliser on

- scan number, temperature in celsius, state of IL, time of day
- CPS_22, -35, liquid; 11:19; 11:19
- CPS_25, -53, turning solid; 11:27
- CPS_28, -67, turning solid; 11:35
- CPS_31, -80, solid; 11:43
- CPS_36, -80, solid, charge neutraliser on; 11:57

Note how peaks broaden and reduce in height as the sample charges +ve

shift back on switchin on charge neutraliser
shift during solidification