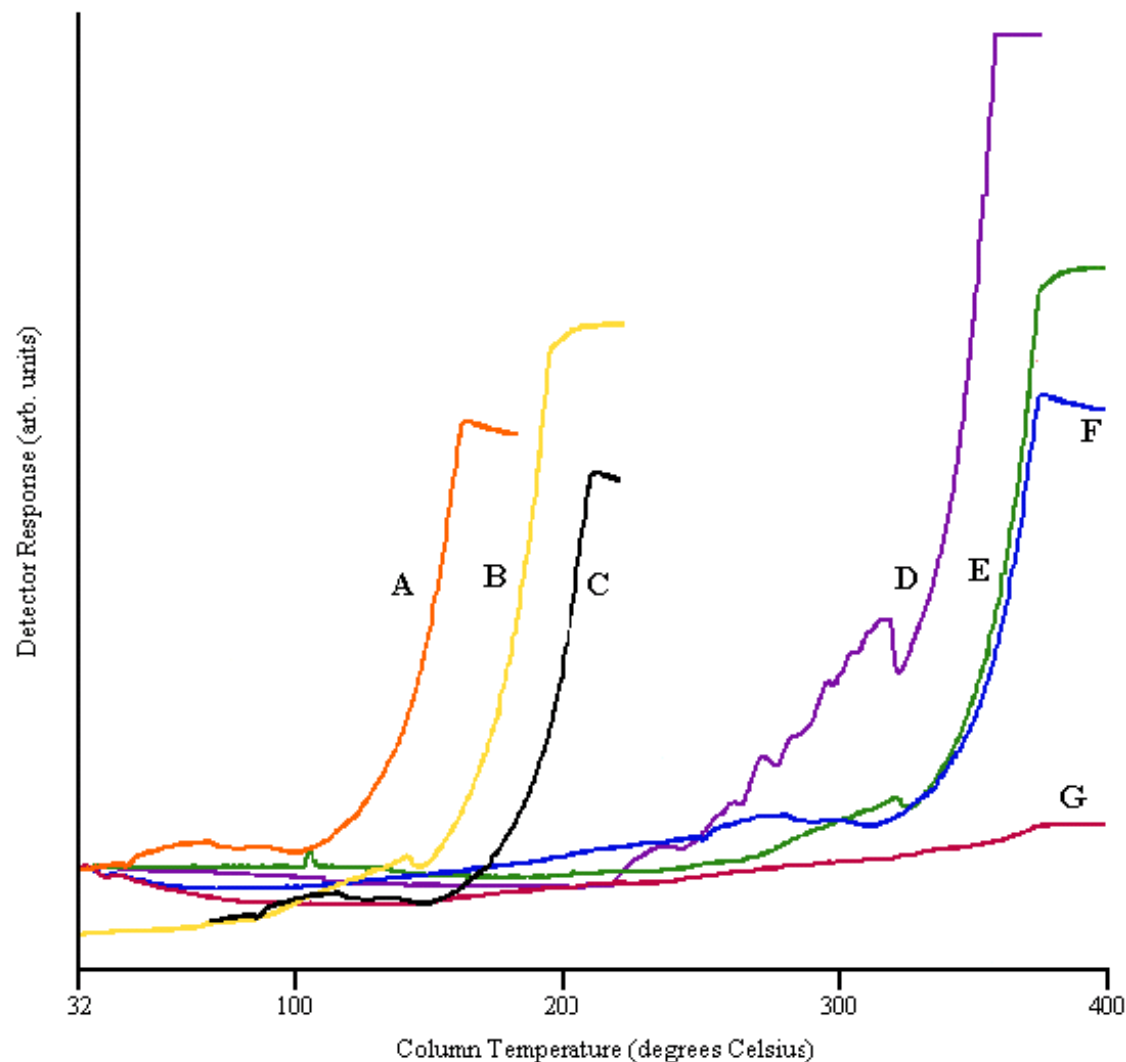


# Uses of RTILs

- ❖ Novel solvents in organic synthesis and liquid-liquid extraction
- ❖ Matrixes in Matrix-Assisted Laser Desorption Ionization (MALDI) mass spectrometry
- ❖ Stationary phases in gas-liquid chromatography
- ❖ Unique solvents for spectroscopic studies
- ❖ Media for electrochemical studies
- ❖ ESI-MS reagents for trace anion detection
- ❖ Stable, tunable solvent for electro-wetting applications
- ❖ Unique supporting electrolyte for sensors



Thermal stability diagram constructed by immobilizing a thin film of the ionic liquid on the wall of fused silica capillary, heating under a constant flow of helium, and detecting volatilization/decomposition products using an ultra-sensitive flame ionization detector. The plot illustrates the fact that the geminal dicationic ionic liquids (D-G) have much higher thermal stabilities than conventional ionic liquids (A-C).

A, 1-butyl-3-methylimidazolium chloride (BMIM-Cl); B, BMIM-PF<sub>6</sub>; C, BMIM-NTf<sub>2</sub>;  
 D, C<sub>9</sub>(bpy)<sub>2</sub>-NTf<sub>2</sub>, **38**; E, C<sub>9</sub>(mim)<sub>2</sub>-NTf<sub>2</sub>, **10**; F, C<sub>12</sub>(benzim)<sub>2</sub>-NTf<sub>2</sub>, **29**;  
 G, C<sub>9</sub>(mpy)<sub>2</sub>-NTf<sub>2</sub>, **35**.