

## Effect of Anion Variation on the CO<sub>2</sub> Capture Performance of Pyridinium Containing Poly(ionic liquid)s

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**Abstract :** Climate change due to escalating carbon dioxide concentration in the atmosphere is an issue of paramount importance that needs immediate attention. CO<sub>2</sub> capture and sequestration (CCS) is a promising route to mitigate climate change and adsorption is the most widely recognized technology owing to possible energy savings relative to the conventional absorption techniques. In this conference, the potential of a new family of solid sorbents for CO<sub>2</sub> capture and separation will be presented. Novel pyridinium containing poly(ionic liquid)s (PILs) were synthesized with varying anions i.e bis(trifluoromethylsulfonyl)imide and hexafluorophosphate. The resulting polymers were characterized using NMR, XRD, TGA, BET surface area and microscopic techniques. Furthermore, CO<sub>2</sub> adsorption measurements at two different temperatures were also carried out and revealed great potential of these PILs as CO<sub>2</sub> scavengers.

**Keywords :** climate change, CO<sub>2</sub> capture, poly(ionic liquid)s, CO<sub>2</sub>/N<sub>2</sub> selectivity

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