

## Organic-Inorganic Hybrid Ionic Liquids for High Temperature CO<sub>2</sub> Capture

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Task specific ionic liquids(TSILs) have great potential for CO<sub>2</sub> capture at room temperature but, at higher temperature, as a reason of thermal stability the adsorption capacity decreases. In this work, 1-ethyl-3-methylimidazolium amino acid {[EMIM][AA]} organic-inorganic hybrid material was synthesized via grafting method in order to enhance the applicability of ionic liquid with thermally robust inorganic substrate for the high temperature CO<sub>2</sub> capture. The material analysis was carried out by using XRD, SEM, <sup>13</sup>C-NMR, <sup>29</sup>Si-NMR and CO<sub>2</sub>-TPD. The developed material is expected to exhibit fast adsorption-desorption kinetics as well as good capacity in high temperature CO<sub>2</sub> capture. This work was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (Grant number 2009-0093816).