Hydroxyl-ionic liquid act as a robust heterogeneous catalyst for chemical fixation of CO_2 into cyclic carbonates

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The rapid increases of CO_2 emission due to fossil fuels has led to the urgent need to utilize CO_2 into valuable products. In this work, we present a simple approach towards the cycloaddition reaction of CO_2 and propylene oxide into propylene carbonate over one spot synthesized hydroxyl-ionic liquid. The as-synthesized catalyst was characterized by spectroscopic methods. The catalytic properties of ionic liquid were studied through reaction parameters such as the amount of catalyst, temperature, pressure and time. Also, we have examined the substrates scope for the ionic liquid. The ionic liquid has exhibited excellent catalytic performance under the mild reaction condition.