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(54) Title: METHODS FOR MONITORING IONIC LIQUIDS USING VIBRATIONAL SPECTROSCOPY

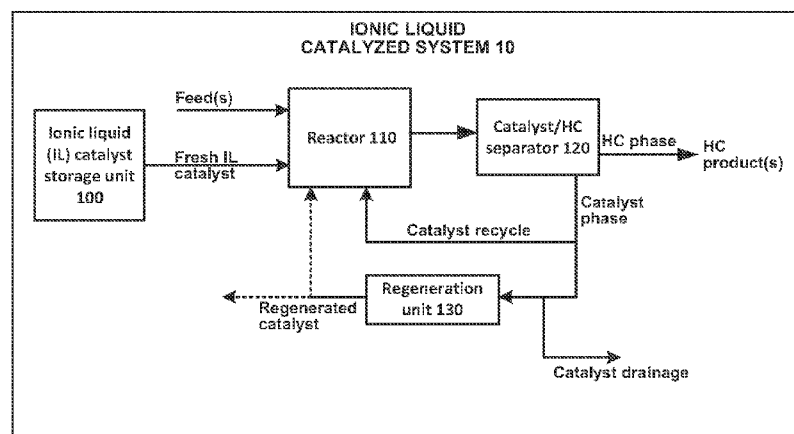


FIG. 1

(57) Abstract: Methods for monitoring ionic liquids using vibrational spectroscopy may involve contacting an infrared (IR) transmissive medium with the ionic liquid, recording an IR spectrum of the ionic liquid, and quantifying at least one chemical characteristic of the ionic liquid based on the IR spectrum. The IR spectrum may be recorded ex situ or in situ. Methods for controlling ionic liquid catalyzed processes are also disclosed, wherein a condition of the ionic liquid may be determined during such processes based on IR spectral analysis of the ionic liquid.