ABSTRACT

METHOD AND SYSTEM TO ADD HIGH SHEAR TO IMPROVE AN IONIC LIQUID CATALYZED CHEMICAL REACTION

In an embodiment, a method is disclosed to increase the activity of an ionic liquid catalyst comprising emulsifying the ionic liquid catalyst with one or more liquid components. In an embodiment, a method is disclosed comprising introducing into a reaction zone a monomer feed and a reduced amount of ionic liquid catalyst and controlling an amount of shear present in the reaction zone to maintain a desired conversion reaction of the monomer. In an embodiment, a catalyzed reaction system is disclosed comprising a reactor configured to receive one or more liquid components and ionic liquid catalyst; a device coupled to the reactor for adding high shear to the liquid components and ionic liquid catalyst; and a controller coupled to the device for adding high shear and configured to control the amount of shear added to a catalyzed reaction zone to maintain a conversion reaction.

Fig. 1