

## **Biocompatible Ionic Liquids in Liquid-Liquid Extraction of Lactic Acid: A Comparative Study**

**Authors :** Konstantza Tordova, Ivan Svinyarov, Milen G. Bogdanov

**Abstract :** Ionic liquids consisting of pairs of imidazolium or phosphonium cation and chloride or saccharinate anion were synthesized and compared with respect to their extraction efficiency towards the fermentative L-lactic acid. The acid partitioning in the equilibrated biphasic systems of ionic liquid and water was quantified through the extraction degree and the partition coefficient. The water transfer from the aqueous into the ionic liquid-rich phase was also always followed. The effect of pH, which determines the state of lactic acid in the aqueous source was studied. The effect of other salting-out substances that modify the ionic liquid/water equilibrium was also investigated in view to reveal the best liquid-liquid system with respect to low toxicity, high extraction and back extraction efficiencies and performance simplicity.

**Keywords :** ionic liquids, biphasic system, extraction, lactic acid

**Conference Title :** ICCCECP 2015 : International Conference on Chemistry, Chemical Engineering and Chemical Process

**Conference Location :** Venice, Italy

**Conference Dates :** April 13-14, 2015