

Chemical Engineering

September 12-14, 2016 Phoenix, USA

Removal of mixed acids from aqueous solution

Aymn Abdulrahman

University of Jeddah, Saudi Arabia

Carboxylic acids are commonly generated in biorefinery operations such as fermentation or aqueous extraction of hemicellulose feedstocks. In most cases, organic acids are generated as dilute components in aqueous streams. If they can be recovered from solution inexpensively, they may find value as pure chemical products or as starting materials for a wide variety of organic products, including biofuels. Liquid-liquid extraction is a separation method applied to recover mixed carboxylic acids from a fermented wood extract. These acids included: Acetic, propionic, butyric, valeric, caproic and heptanoic acids. An organic solution, such as trialkylphosphine oxide (Cyanex 923, a mixture of four trialkylphosphine oxides), was mixed with fermented wood extract to extract these acids. Although the extraction was highly effective, however it was shown that distillation was not able to recover these acids from the extraction solvent. In this study, after liquid-liquid extraction of the acids from the aqueous phase, the mixed acids are recovered from the organic phase by a back extraction with sodium hydroxide. The mixture is agitated and centrifuged to separate the organic and aqueous phases. Results present the extraction and recovery efficiencies of this method of recovering organic acids.

Biography

Aymn Abdulrahman has completed his PhD from University of Maine, USA. He has worked for 9 months in Arabian Petroleum Supply (APSCO) in Saudi Arabia and then about 2 years in sugar refinery as Shift Manager Trainee. Currently, he is an Assistant Professor and Chairman of Chemical Engineering department at University of Jeddah, Saudi Arabia. He has participated as a Member and a Speaker in the American Institute of Chemical Engineers (AIChE Annual Meeting) in Nashville, Tennessee, USA in the year 2009.

aabulrahman10@hotmail.com

Notes: