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# Solvent recovery and deacidification by organic solvent nanofiltration: Experimental investigation and mass transfer modeling

Kathrin Werth, Paul Kaupenjohann, Michael Knierbein, Mirko Skiborowski \*

TU Dortmund University, Department of Biochemical and Chemical Engineering, Laboratory of Fluid Separations, Emil-Figge-Straße 70, 44227 Dortmund, Germany

kathrin.werth@bci.tu-dortmund.de

mirko.skiborowski@bci.tu-dortmund.de

\*Corresponding author. Tel.: +49 231 755 2670; Fax: +49 231 755 3035.

## ABSTRACT

Non-edible oils, waste oils and animal fats are promising feedstocks for more economic and ecological production processes. However, the composition of these low-quality oils, especially the content of free fatty acids, strongly fluctuates requiring the development of flexible process concepts. Therefore, this study investigates the potential of organic solvent nanofiltration for important applications in the oleochemical industry. It is shown that an efficient recovery of non-polar extraction solvents is possible for a wide range of low-quality oils. Commercially available PDMS-based membranes enable high solvent fluxes and rejection of triglyceride and fatty acids. In deacidification experiments, high selective

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