Doktorantūros studijų galimybė Mikalojaus Koperniko universitete Torunėje (Lenkija)

PhD available within the Horizon MSCA Doctoral Network:
Mem-Fast: Membranes as Enablers for Future Biorefineries: from Fabrication to Advanced Separation Technologies

36 months fully funded project entitled:

"Separation, fractionation and valorisation of fusel oils towards pharmaceuticals, cosmetics, thinners and automotive ingredients."

Fusel oils are by-products of bioethanol production and they are mostly the aqueous mixture of C2-C5 alcohols, constituting 0.10-0.15wt.% of raw ethanol. Owing to the expanding production of bioethanol, there is an expanding need for the processes enabling the utilisation of these side streams. Various research show that fusel oils can contain even up to 150 different compounds and that is considered as raw material for various value-added products. The condition for effective management of fusel oils is their full or partial dehydration, separation and further processing towards the desired products. The main goal of the project is to develop an innovative method for dewatering of fusel oils, using a membrane separation technique (PV in liquid or vapor phase) followed by their separation and further processing (esterification, catalytic dehydration) towards products possessing high market potential (solvents, thinners, biodegradable lubricants, active pharmaceutical ingredients). Chemometrics methods will be utilized for the optimization of the separation process.

Host Institution: Nicolaus Copernicus University in Toruń, Faculty of Chemistry, Toruń, Poland
(sites.google.com/view/membranesncu/)

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