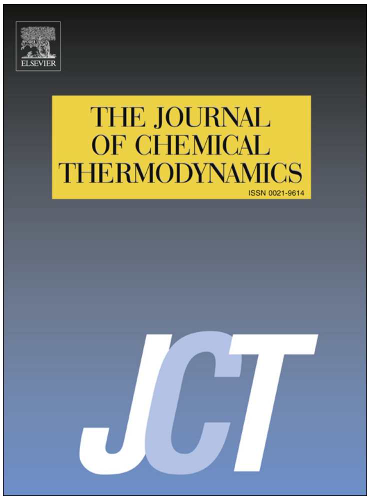

Liquid-liquid equilibrium for mixtures of hexadecane + xylenes + pyrene + solvent at 373.15 K

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Liquid-liquid equilibrium for mixtures of hexadecane + xylenes + pyrene + solvent at 373.15 K

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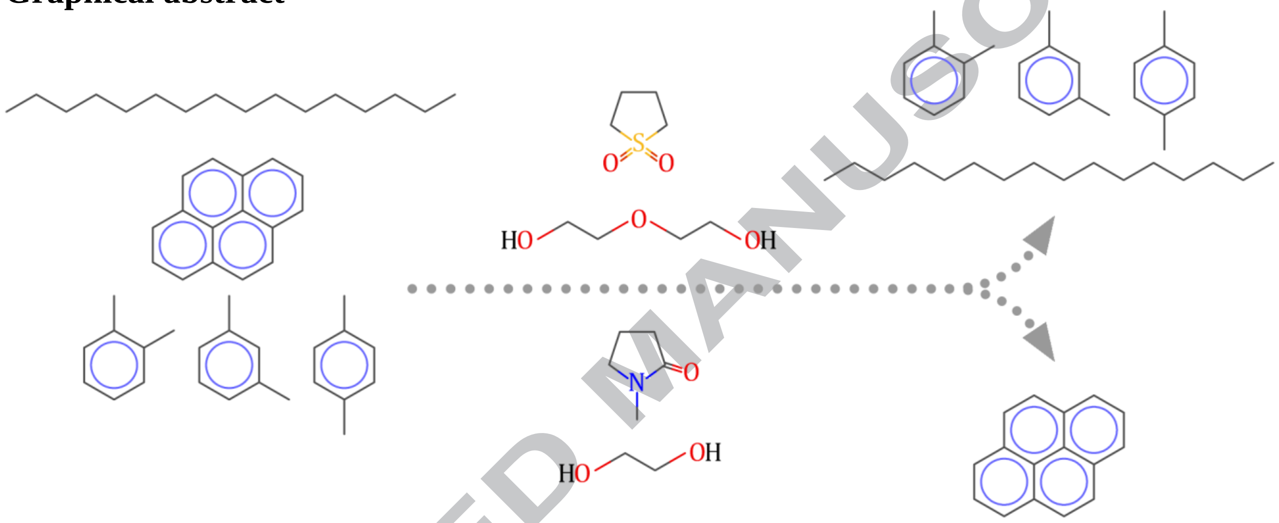
Graphical abstract



Highlights

- LLE for hexadecane/xylenes/pyrene/solvent determined at 373.15 K.
- LLE compositions correlated by UNIQUAC model based on mass fractions.
- Sulfolane presented better capacity/selectivity performance than DEG and NMP/EG.
- Pyrene preferentially extracted relative to xylenes.

Abstract

Liquid-liquid equilibrium tie line data were determined at 373.15 K for a model hydrocarbon mixture consisting of hexadecane + xylenes + pyrene with the solvents sulfolane and diethylene glycol (DEG), and also with the solvent combination *N*-methylpyrrolidone/ethylene glycol (NMP/EG). The measured data were used to estimate binary interaction parameters of the UNIQUAC model. All solvents presented comparable selectivities for pyrene relative to xylenes. Pyrene partition ratios greater than unity were observed for sulfolane only. As a result, from a selectivity/capacity viewpoint, when compared to NMP/EG and DEG, sulfolane is potentially the

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