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Thermodynamics and selectivity of separation based on activity coefficients at infinite dilution of various solutes in ionic liquid [HMMIM][BF<sub>4</sub>]

Zhuang-Zhuang He, Jia-Yu Zhai, Han Mu, Miao Zhang, Ying Yu, Jia-Li Zheng, Yu-Hai Jiao, Ming-Lan Ge, Rui-Xiang Wu

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## HIGHLIGHTS

- ▶ Measurements of activity coefficients at infinite dilution using GLC.
- ▶ The (gas-liquid) partition coefficients were calculated.
- ▶ The excess thermodynamic functions, entropies, and Gibbs energies were calculated.
- ▶ The solubility parameter of the IL [HMMIM][BF<sub>4</sub>] was determined.
- ▶ Selectivity and capacity for hexane (*i*)/benzene (*j*), cyclohexane (*i*)/benzene (*j*).
- ▶ The linear free energy relationship (LFER) analysis of the results was performed.

1. The Title: Thermodynamics and selectivity of separation based on activity coefficients at infinite dilution of various solutes in ionic liquid [HMMIM][BF<sub>4</sub>]

2. The Authors: Zhuang-Zhuang He<sup>a, b</sup>, Jia-Yu Zhai<sup>a</sup>, Han Mu<sup>a</sup>, Miao Zhang<sup>a, b</sup>, Ying Yu<sup>a</sup>, Jia-Li Zheng<sup>a</sup>, Yu-Hai Jiao<sup>a</sup>, Ming-Lan Ge<sup>a, b\*</sup>, Rui-Xiang Wu<sup>a</sup>

3. <sup>a</sup>: *College of Chemical Engineering, Beijing Institute of Petrochemical Technology, Beijing 102617, China*; <sup>b</sup>: *Beijing Key Laboratory of Fuels Cleaning and Advanced Catalytic Emission Reduction Technology, Beijing 102617, China*

\*Corresponding author

\*E-mail: [geminglan@bipt.edu.cn](mailto:geminglan@bipt.edu.cn), [yunlucky@126.com](mailto:yunlucky@126.com).

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