

## Supplementary Information

### Mass Transfer Kinetics and Liquid-Liquid Equilibrium of DES-Aromatic-Aliphatic Ternary Systems With Accurate COSMO Model Predictions

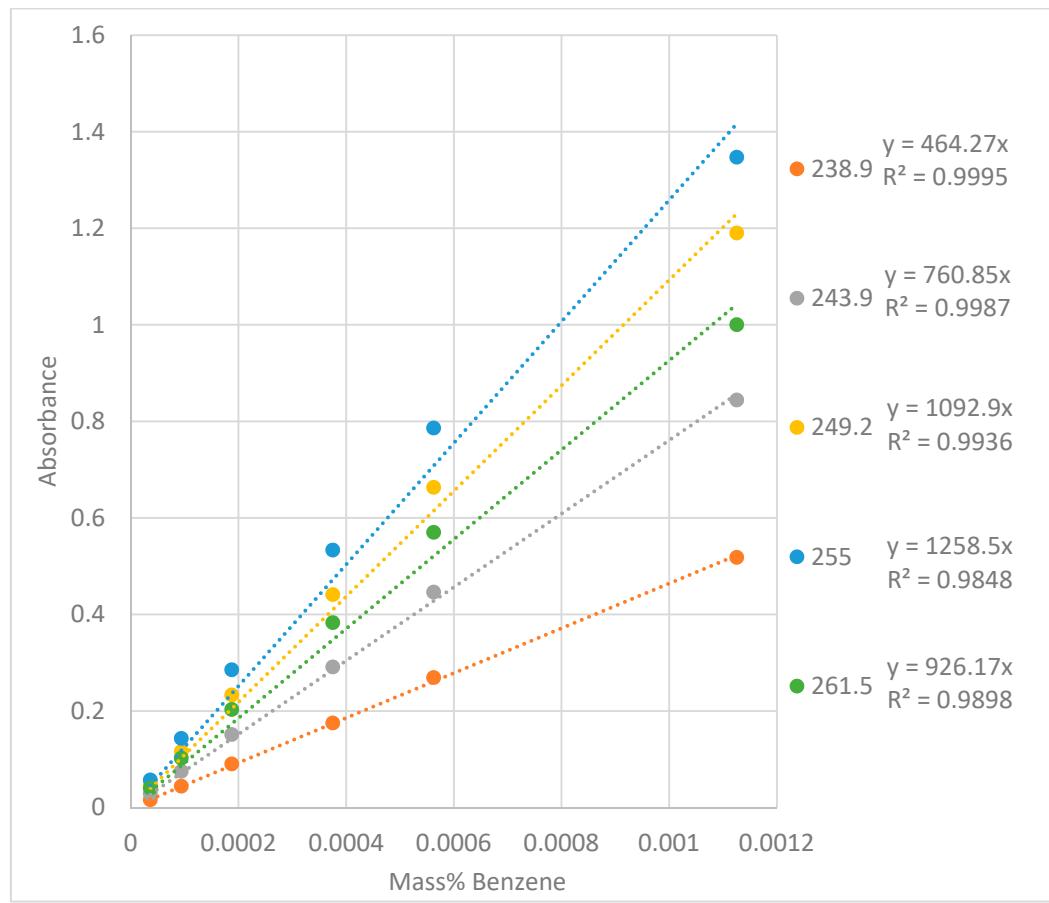


Figure S1. Beer-Lambert Relation for Benzene in Cyclohexane at Notable Absorbance Peaks

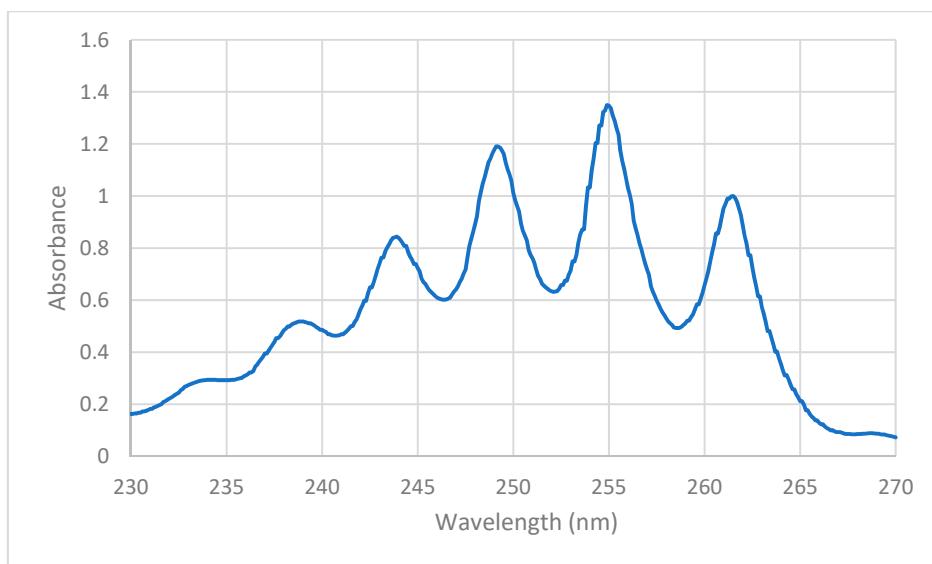


Figure S2. UV-Vis Spectra for Benzene in Cyclohexane

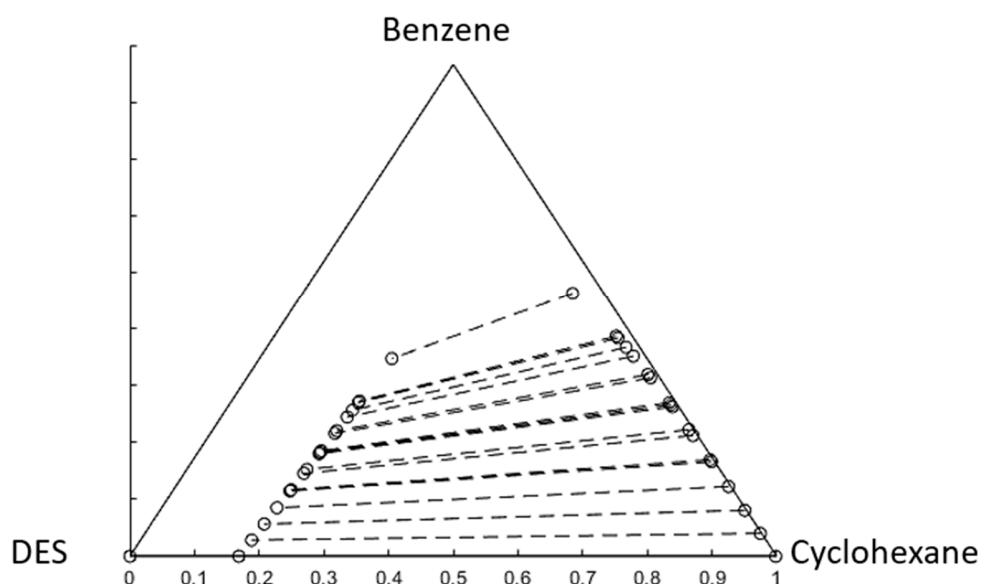
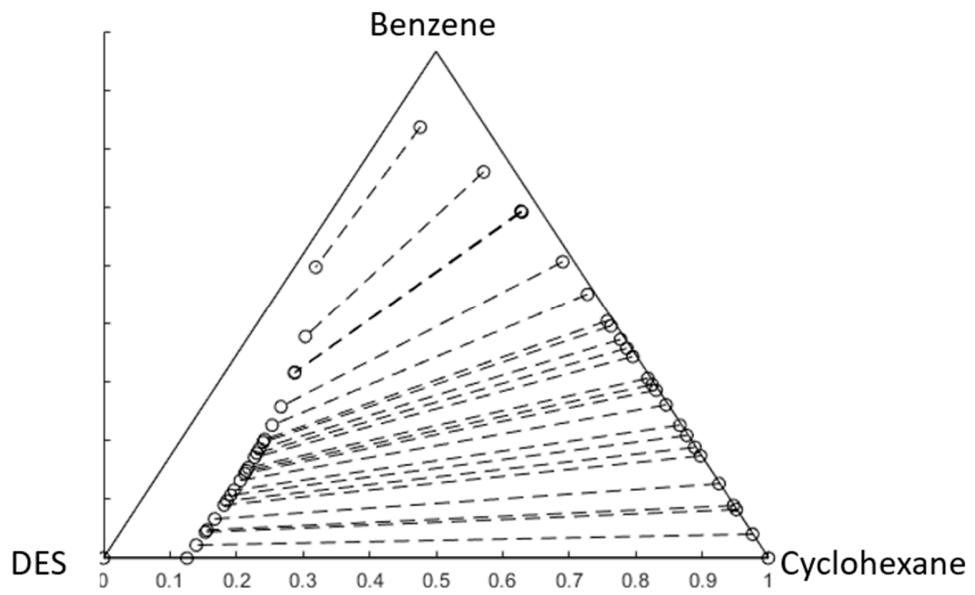
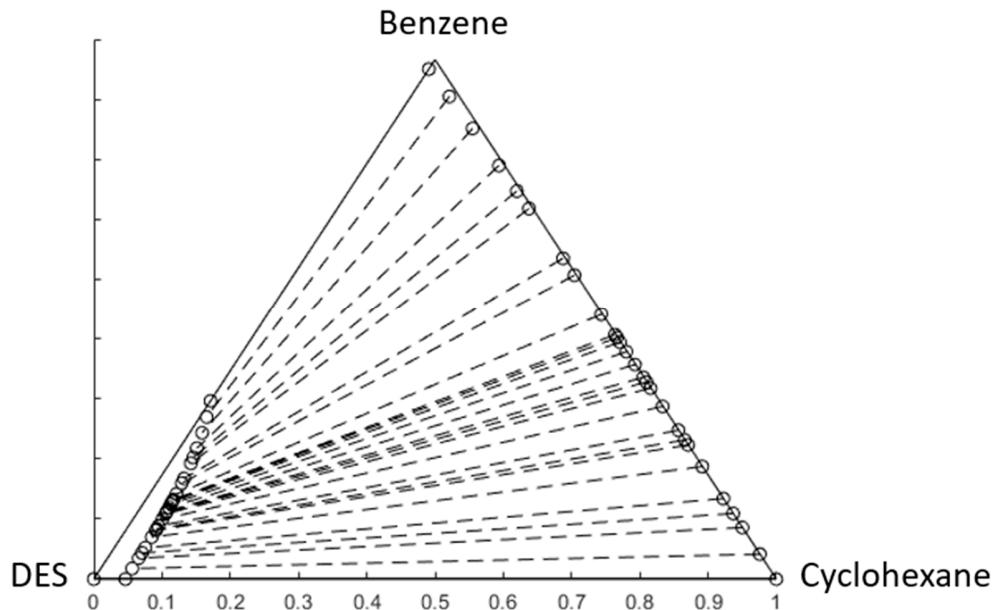


Figure S3. Predicted LLE of  $N_{6666}Br:EG$  (1:2), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction



*Figure S4. Predicted LLE of  $N_{6666}Br$ :Gly (1:2), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction*



*Figure S5. Predicted LLE of METPB:EG (1:3), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction*

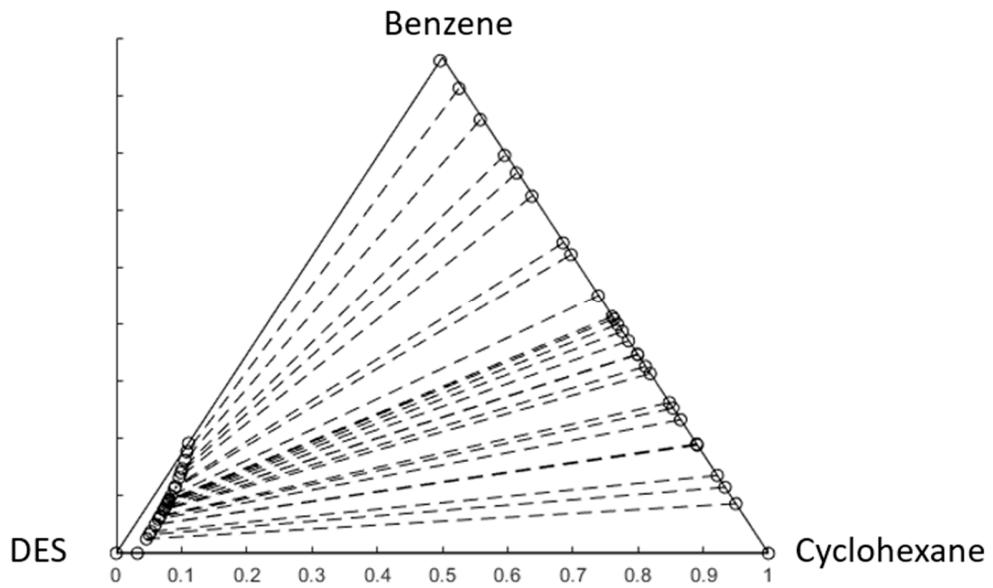


Figure S6. Predicted LLE of METPB:Gly (1:3), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction

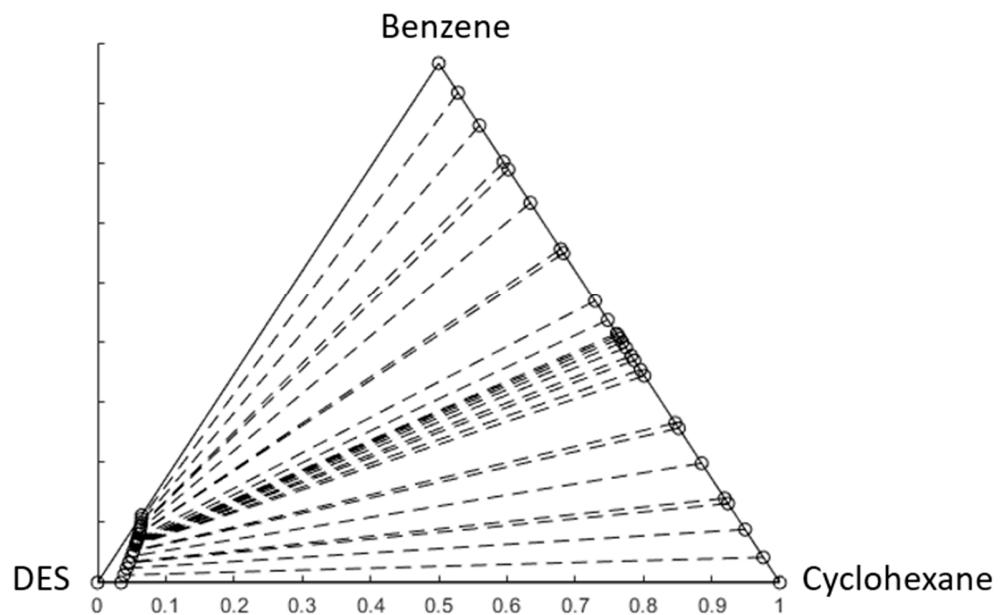


Figure S7. Predicted LLE of ChCl:EG (1:2), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction

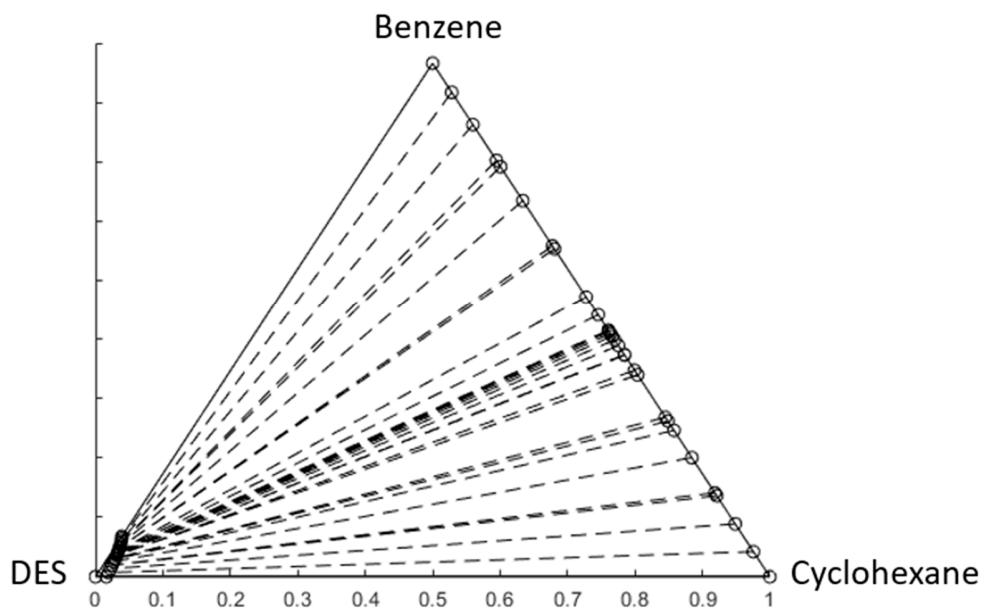


Figure S8. Predicted LLE of ChCl:Gly (1:2), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction

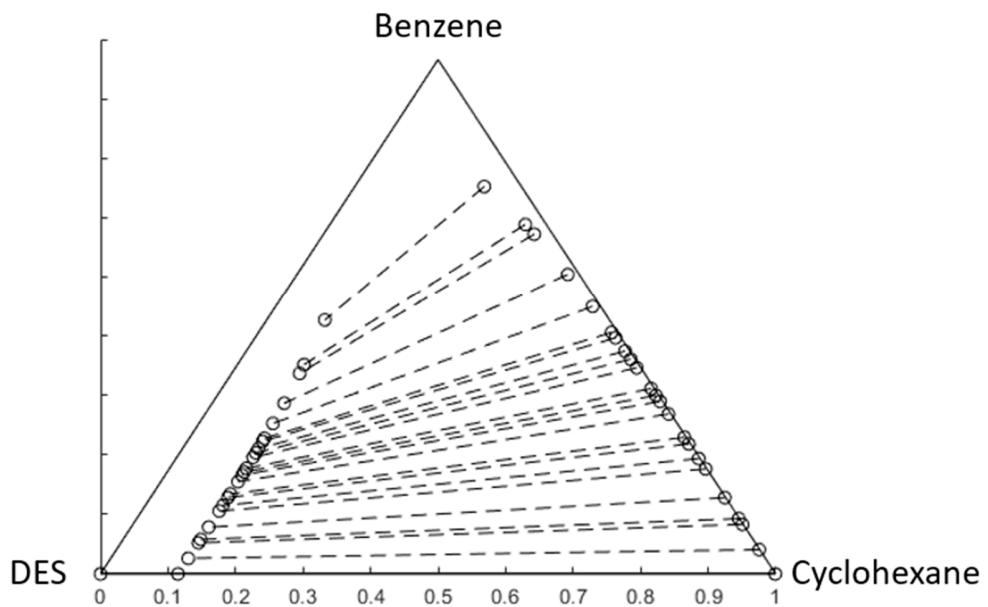


Figure S9. Predicted LLE of N4444Br:EG (1:2), Cyclohexane and Benzene at 25°C. Concentrations in Mass Fraction

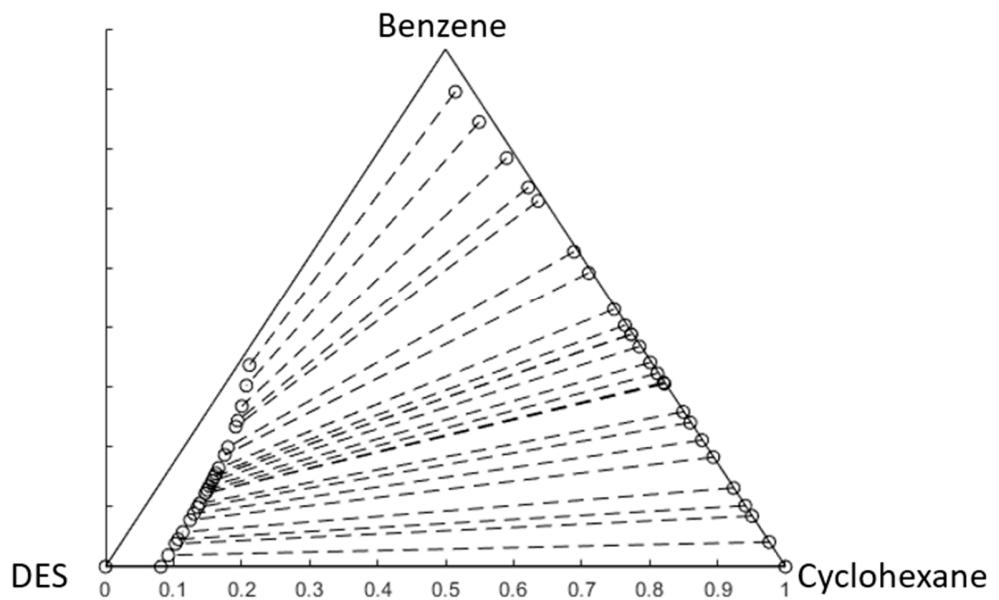


Figure S10. Predicted LLE of *N*<sub>444</sub>Br:Gly (1:2), Cyclohexane and Benzene at 25°C.  
Concentrations in Mass Fraction