SUPPLEMENTARY MATERIAL

Table S1. LLE and LLLE data for the ternary system water + [P$_{6\,6\,6\,14}$][DCA] + hexane at T = 298.15 K and 0.1 MPa (mass fractions).

Biphasic region I

	Upper Phase			Lower Phase	
ω_1	ω_2	ω_3	ω_1	ω_2	ω_3
0.030	0.970	0.000	1.000	0.000	0.000
0.027	0.957	0.016	1.000	0.000	0.000
0.025	0.911	0.064	1.000	0.000	0.000
0.024	0.847	0.130	1.000	0.000	0.000
0.022	0.771	0.207	1.000	0.000	0.000
$u(\omega_1)=0.001$	$u(\omega_2)=0.002$	$u(\omega_3)=0.002$	$u(\omega_1)=0.001$	$u(\omega_2)=0.001$	$u(\omega_3)=0.001$

Biphasic region II

	Upper Phase			Lower Phase	
ω_1	ω_2	ω_3	ω_1	ω_2	ω_3
0.000	0.000	1.000	0.000	0.709	0.291
0.000	0.000	1.000	0.009	0.717	0.274
$u(\omega_1)=0.001$	$u(\omega_2)=0.001$	$u(\omega_3)=0.001$	$u(\omega_1)=0.001$	$u(\omega_2)=0.002$	$u(\omega_3)=0.002$

Triphasic region

|	Upper Phase			Medium Phase			Lower Phase	
ω_1	ω_2	ω_3	ω_1	ω_2	ω_3	ω_1	ω_2	ω_3
0.000	0.000	1.000	0.020	0.724	0.255	1.000	0.000	0.000
$u(\omega_1)=0.001$	$u(\omega_2)=0.001$	$u(\omega_3)=0.001$	$u(\omega_1)=0.001$	$u(\omega_2)=0.002$	$u(\omega_3)=0.002$	$u(\omega_1)=0.001$	$u(x_2)=0.001$	$u(\omega_3)=0.001$

Standard uncertainties: $u(P)$ = 5 kPa, $u(T)$ = 0.05 K.

Table S2. LLE and LLLE data for the ternary system water + [P$_{6\,6\,6\,14}$][DCA] + hexane at T = 323.15 K and 0.1 MPa (mass fractions).

Biphasic region I

	Upper Phase			Lower Phase	
ω_1	ω_2	ω_3	ω_1	ω_2	ω_3
0.032	0.968	0.000	1.000	0.000	0.000
0.025	0.953	0.022	1.000	0.000	0.000
0.020	0.891	0.089	1.000	0.000	0.000
0.019	0.830	0.151	1.000	0.000	0.000
0.020	0.730	0.250	1.000	0.000	0.000
$u(\omega_1)=0.001$	$u(\omega_2)=0.002$	$u(\omega_3)=0.002$	$u(\omega_1)=0.001$	$u(\omega_2)=0.001$	$u(\omega_3)=0.001$

Biphasic region II

	Upper Phase			Lower Phase	
ω_1	ω_2	ω_3	ω_1	ω_2	ω_3
0.000	0.000	1.000	0.000	0.688	0.312
0.000	0.000	1.000	0.003	0.694	0.303
0.000	0.000	1.000	0.016	0.687	0.297
$u(\omega_1)=0.001$	$u(\omega_2)=0.001$	$u(\omega_3)=0.001$	$u(\omega_1)=0.001$	$u(\omega_2)=0.002$	$u(\omega_3)=0.002$

Triphasic region

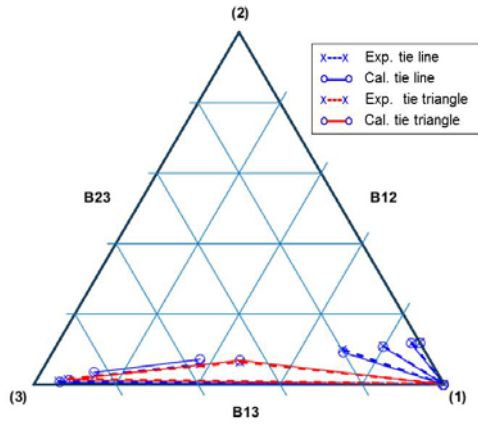|	Upper Phase			Medium Phase			Lower Phase	
ω_1	ω_2	ω_3	ω_1	ω_2	ω_3	ω_1	ω_2	ω_3
0.000	0.000	1.000	0.021	0.684	0.295	1.000	0.000	0.000
$u(\omega_1)=0.001$	$u(\omega_2)=0.001$	$u(\omega_3)=0.001$	$u(\omega_1)=0.001$	$u(\omega_2)=0.002$	$u(\omega_3)=0.002$	$u(\omega_1)=0.001$	$u(x_2)=0.001$	$u(\omega_3)=0.001$

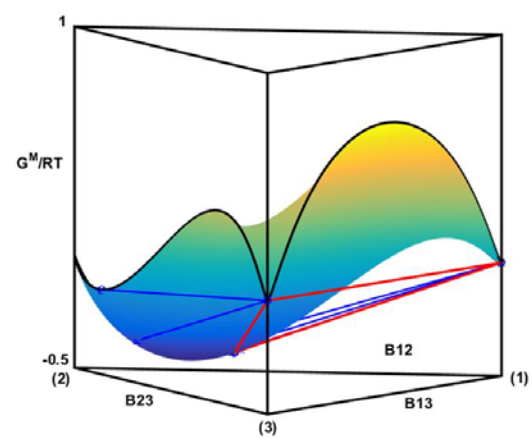Standard uncertainties: $u(P)$ = 5 kPa, $u(T)$ = 0.05 K.
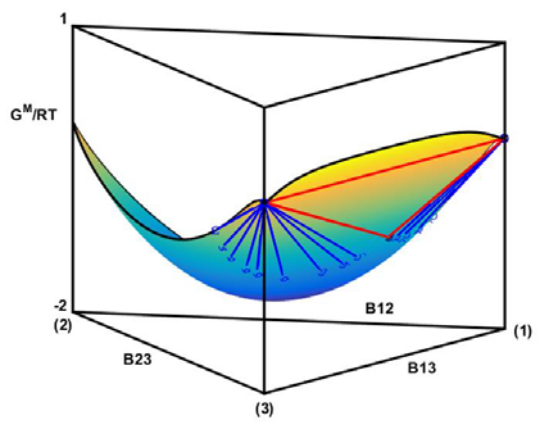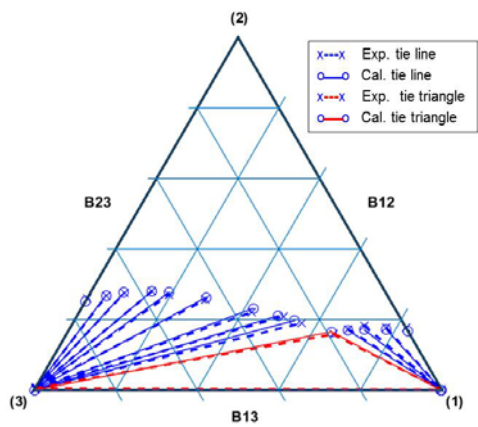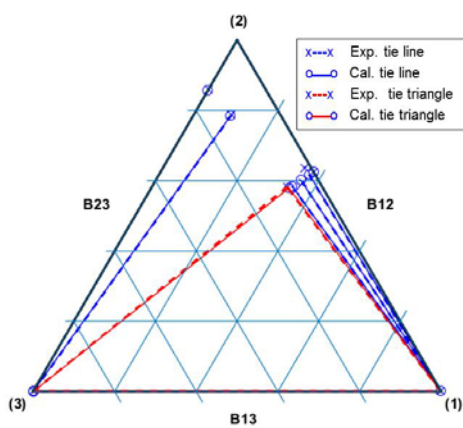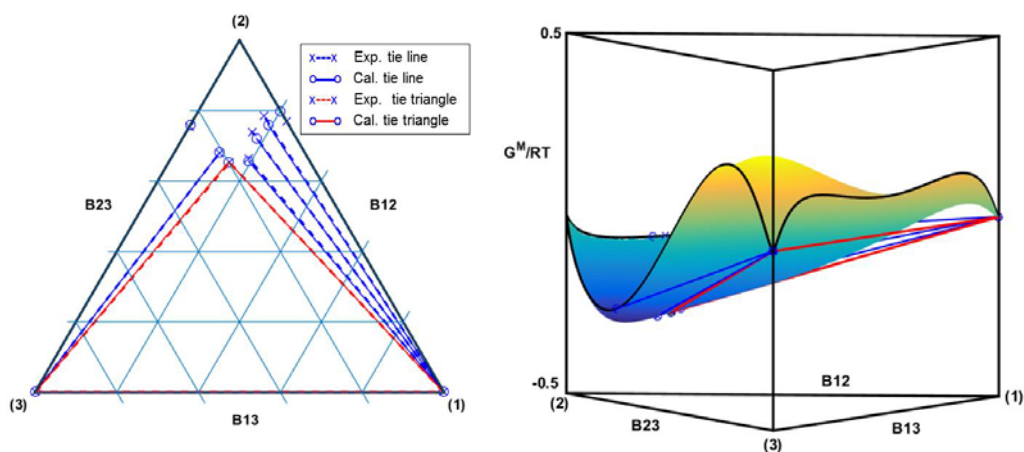
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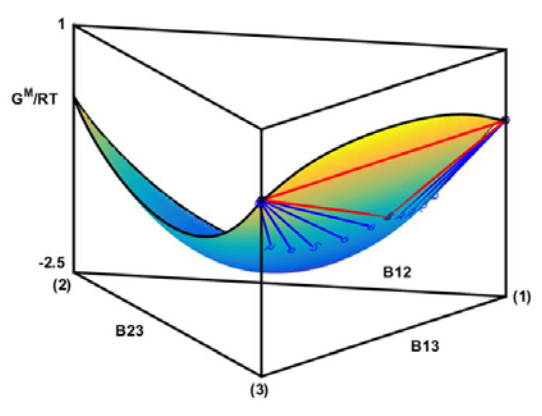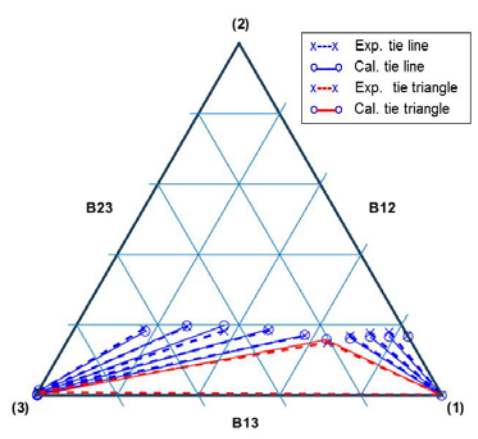
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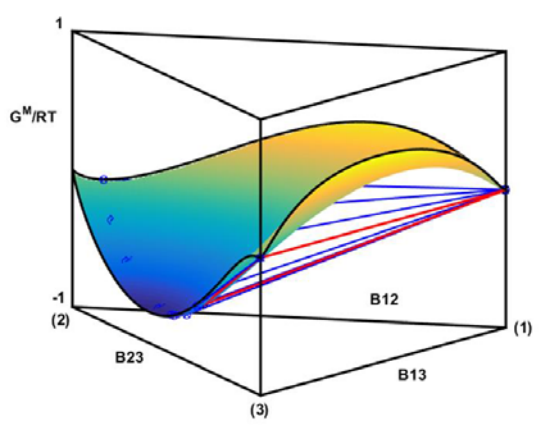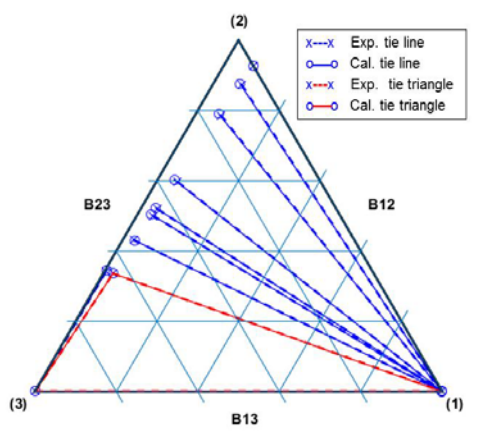
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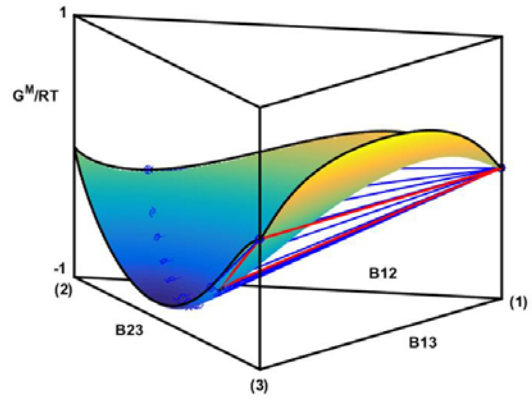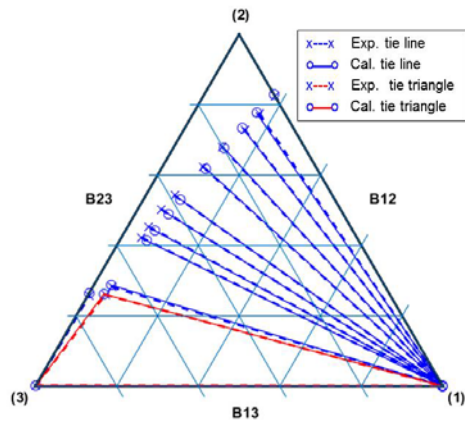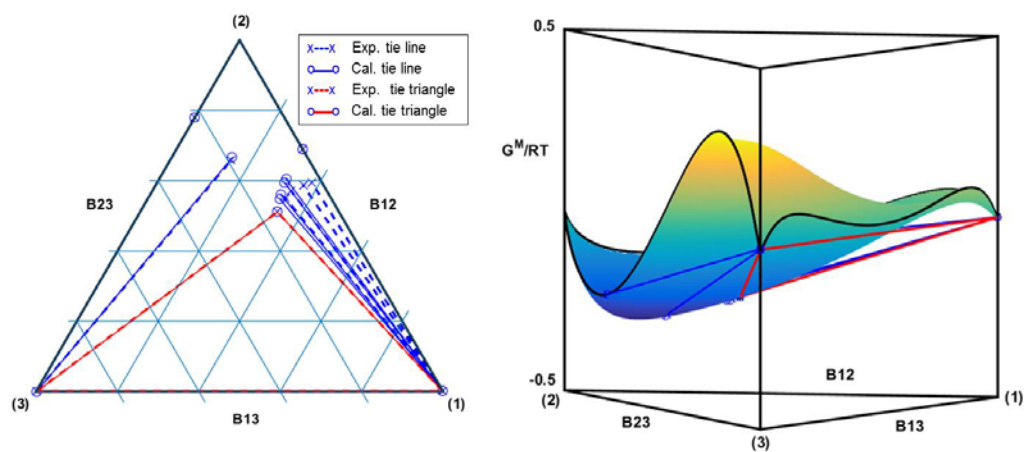
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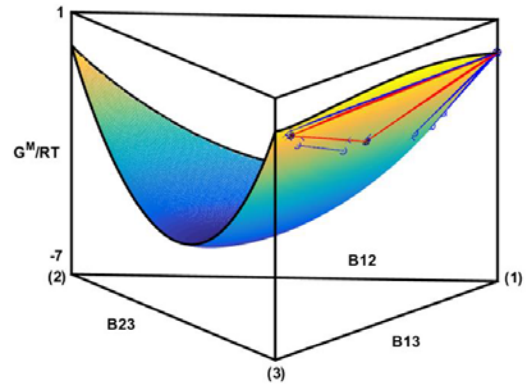
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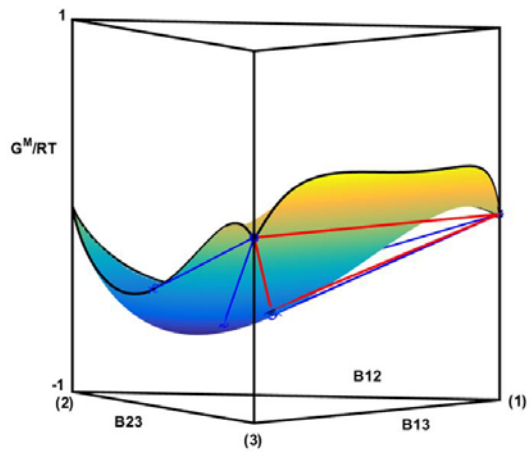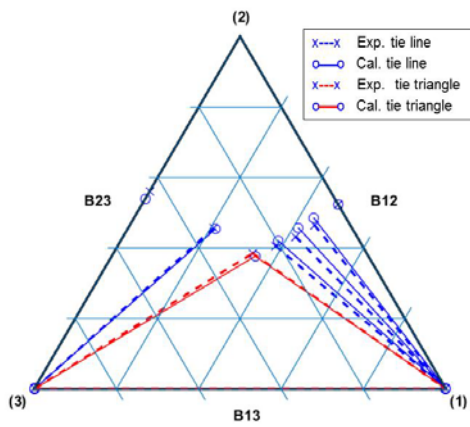
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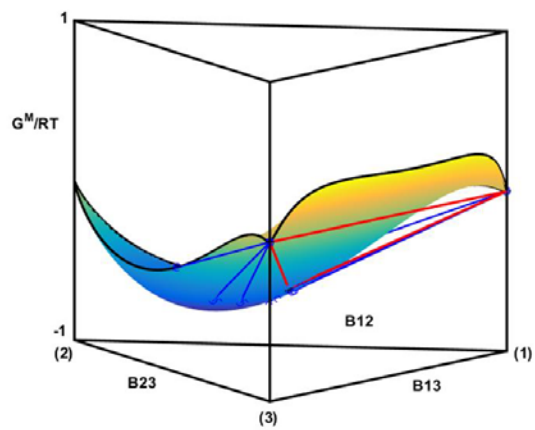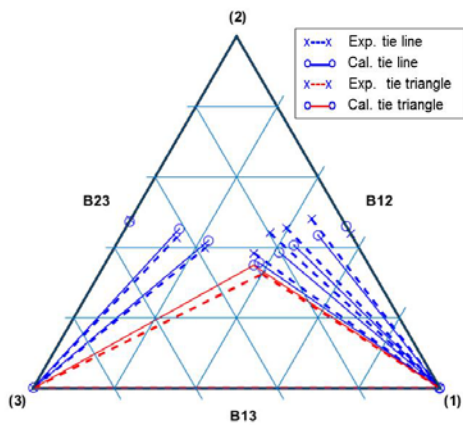
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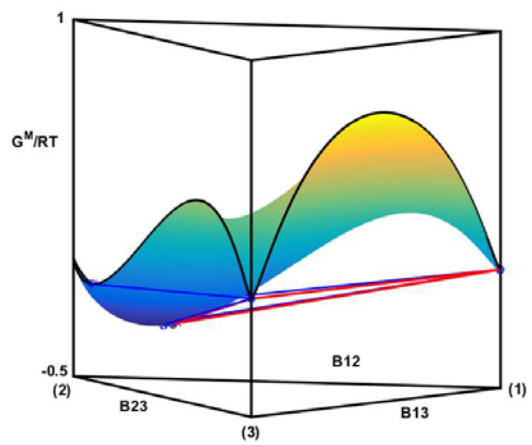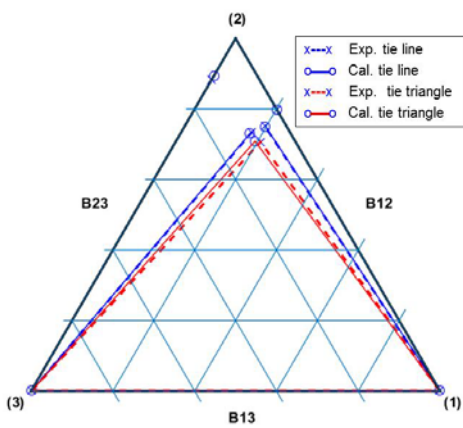
5a)

5b)

6a)

6b)

Figure S1. Experimental and calculated LLE and LLLE (tie-triangle) data (mole fractions) for the systems summarized in Table 4 and the calculated G^M/RT surface obtained using the NRTL model with parameters given in Table 5 (the tie-lines and the tie-triangle are also drawn on the surface).