Supporting Information

Anthracene + Pyrene Solid Mixtures: Eutectic and Azeotropic Character

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Table S1. Melting temperatures of previously reported binary organic component mixtures that form two eutectics.

System	$T_{fus,1}$/K	$T_{fus,2}$/K	$x_{1,e1}$	$T_{fus,e1}$/K	$x_{1,e2}$	$T_{fus,e2}$/K
p-dimethylaminobenzaldehyde (1) + resorcinol (2)[8]	348	382.6	0.2695	322.05	0.7209	317.05
2,4-dinitrophenol (1) + naphthalene (2)[9,10]	353	378	0.3158	358	0.5	367
p-benzoquinone (1) + pyrene (2)[11]	388	423	0.324	392	0.792	376
m-dinitrobenzene (1) + pyrene (2)[11]	362	423	0.301	363	0.702	361
m-nitrobenzoic acid (1) + pyrene (2)[11]	413	423	0.299	403	0.902	413
m-dinitrobenzene (1) + phenothiazine (2)[12]	362	457	0.302	345	0.699	343
m-nitrobenzoic acid (1) + phenothiazine (2)[12]	413	457	0.438	400	0.8	390

Table S2. Enthalpy of fusion of previously reported binary organic component mixtures that form one eutectic.

System	$\Delta_{fus}H_1$/J·g^{-1}	$\Delta_{fus}H_2$/J·g^{-1}	x_1	$\Delta_{fus}H_e$/J·g^{-1}	E_{inter} /J·g^{-1}
benzamide (1) + benzoic acid (2)[6]	191.04	152.70	0.5122	144.68	-27.66
o-chloro benzoic acid (1) + benzoic acid (2)[7]	175.86	152.70	0.3292	137.44	-22.88

Table S3. Enthalpy of fusion of previously reported binary organic component mixtures that form two eutectics.

System	$\Delta_{fus}H_1$/J·g^{-1}	$\Delta_{fus}H_2$/J·g^{-1}	$x_{1,e1}$	$\Delta_{fus}H_{e1}$/J·g^{-1}	$E_{inter,1}$/J·g^{-1}	$x_{1,e2}$	$\Delta_{fus}H_{e2}$/J·g^{-1}	$E_{inter,2}$/J·g^{-1}
p-dimethylaminobenzaldehyde (1) + resorcinol (2)[8]	126.01	207.07	0.2695	140.11	-45.12	0.7209	133.12	-15.52
p-benzoquinone (1) + pyrene (2)[11]	181.32	86.03	0.324	58.81	-58.09	0.792	141.76	-19.74
m-dinitrobenzene (1) + pyrene (2)[11]	143.95	86.03	0.301	55.22	-48.25	0.702	84.14	-42.55
m-nitrobenzoic acid (1) + pyrene (2)[11]	95.14	86.03	0.299	79.79	8.96	0.902	83.25	10.99
m-dinitrobenzene (1) + phenothiazine (2)[12]	143.95	142.52	0.302	80.59	-62.37	0.699	90.71	-52.81
m-nitrobenzoic acid (1) + phenothiazine (2)[12]	95.14	142.52	0.438	72.36	-49.41	0.800	87.58	-17.03

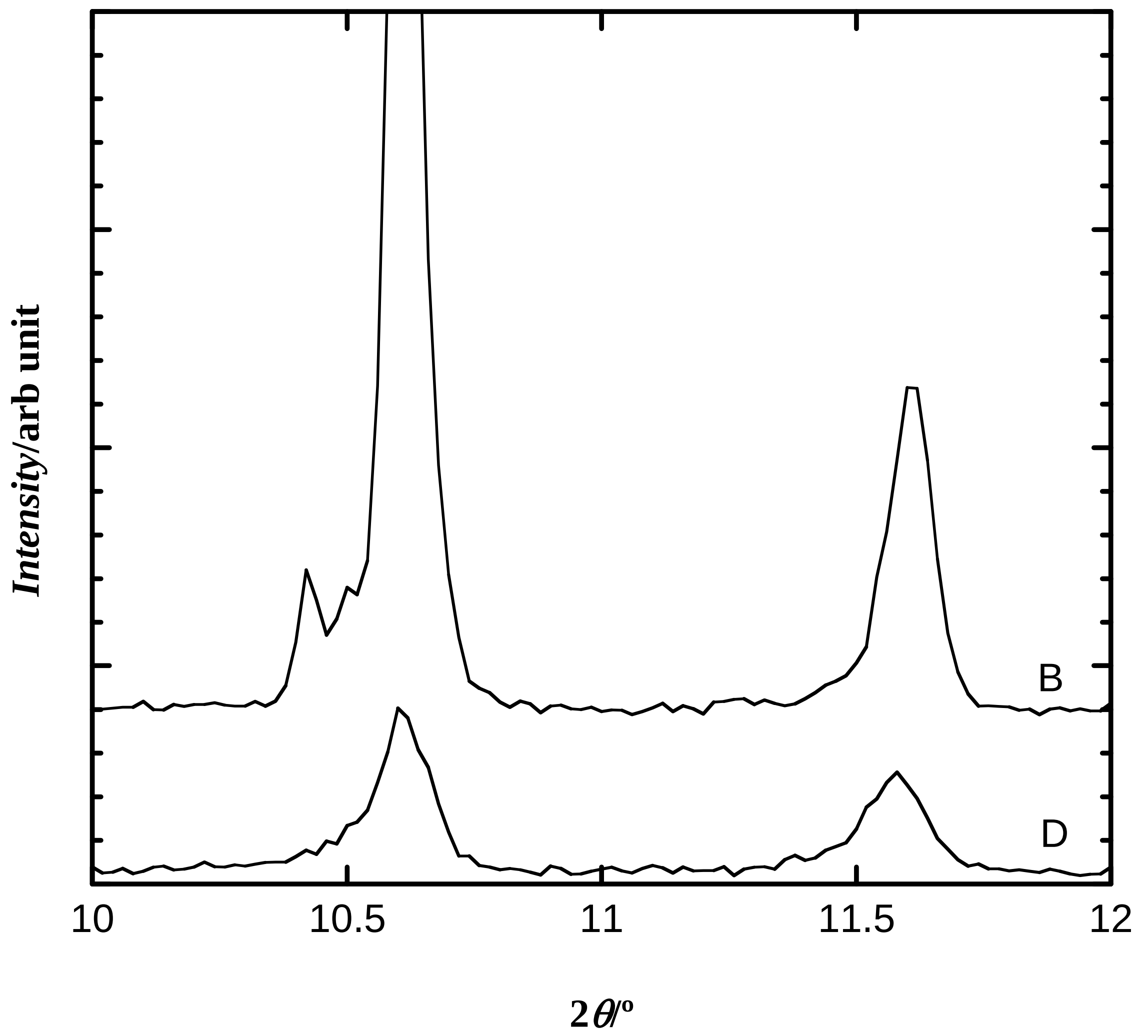

Figure S1. Magnified portion of X-ray diffraction pattern from Figure 4 that shows the modified-pyrene peaks in the eutectic anthracene (1) + pyrene (2) mixture: B, pure (2); D, eutectic mixture x_1 = 0.22.

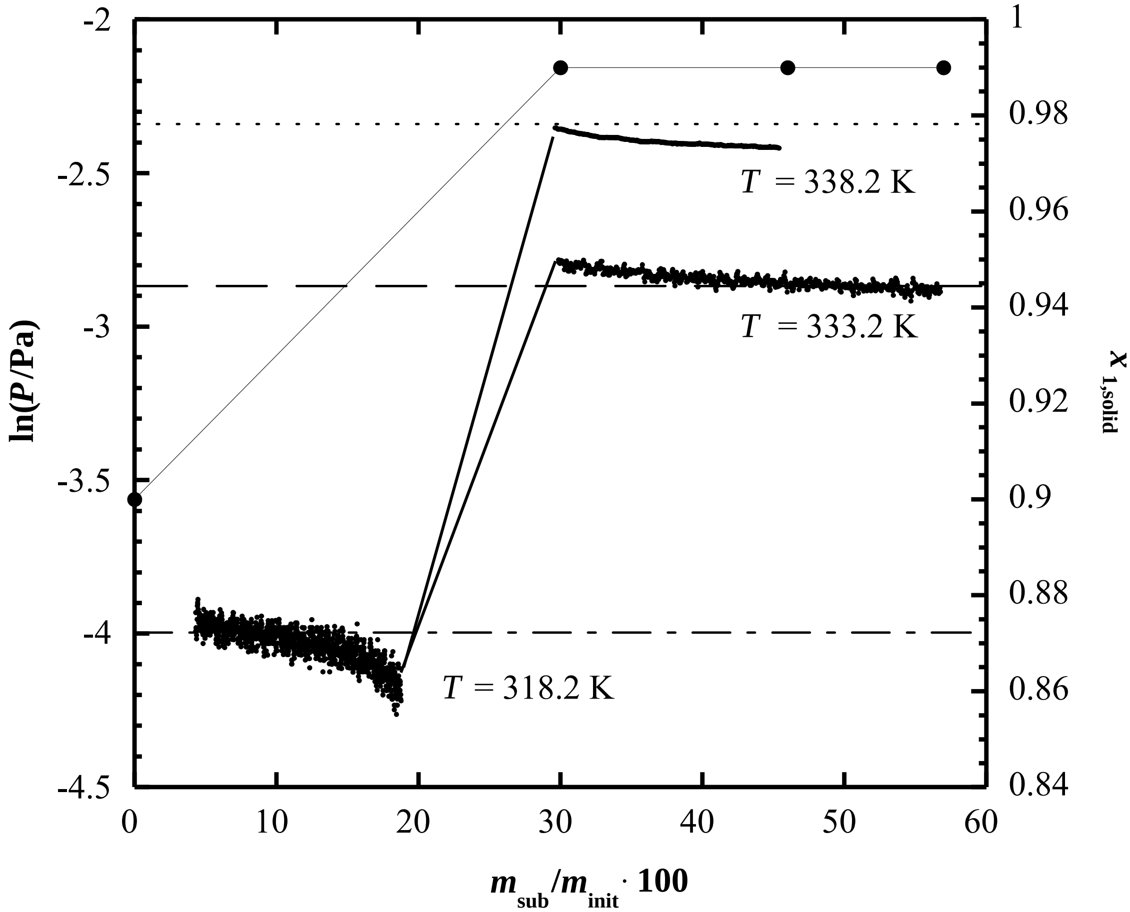

Figure S2. Vapor pressure and composition of an anthracene-rich mixture versus sample mass loss: __, P_{measured}; . . ., $P_{1,\ 338.2\ \text{K}}$; _ _ _, $P_{1,\ 333.2\ \text{K}}$; _._._, $P_{\text{max},\ 318.2\ \text{K}}$; _•_, measured x_1 of solid mixture.

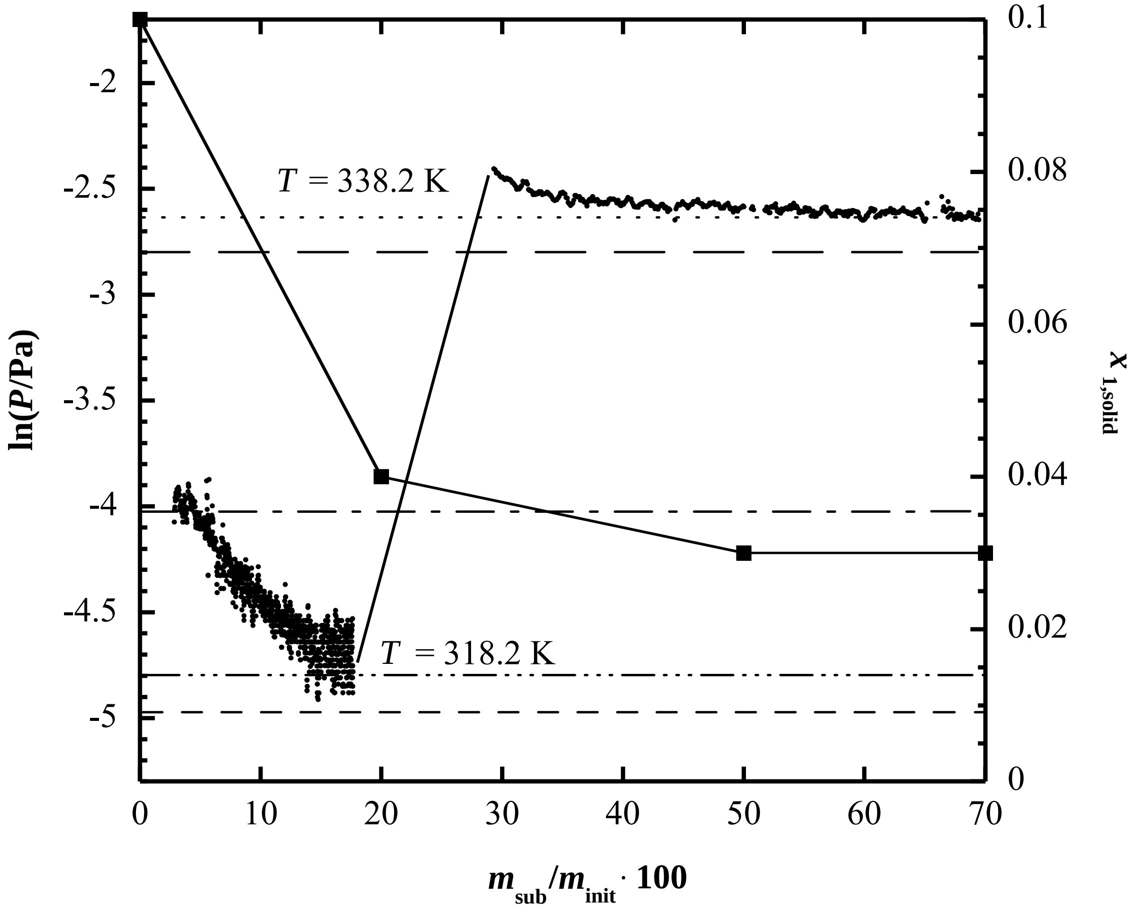

Figure S3. Vapor pressure and composition of a pyrene-rich mixture versus sample mass loss: __, $P_{measured}$; - - -, $P_{2,\ 318.2\ K}$; _ . . . _, $P_{318.2\ K}$ of azeotrope at x_1 = 0.14; _._._, $P_{max,\ 318.2\ K}$; _ _ _, $P_{2,\ 338.2\ K}$; …, $P_{338.2\ K}$ of azeotrope at x_1 = 0.14; -■- measured x_1 of solid mixture.