Supplementary Materials

Table A1

IGC Conditions	
Injector temperature (°C)	150
Detector temperature (°C)	200
Column temperatures (°C)-surface prop.	40, 50, 60
Column temperatures (°C)-thermodynamic prop.	90, 100, 110
Column length (cm)	25
Column O.D. (inch)	1/4
Column I.D. (inch)	1/6
Mass loaded (g)	2.19
Flow rate (ml/min)	25

Table A2

Okra	
Moisture content	8-10 %
Protein content	9 %
Zeta potential (25^{o}C)	-14.45 mV

Table A3

Probe	$-\Delta H^{sp}$ (Jmol^{-1})	ΔS^{sp} (Jmol^{-1}K^{-1})	R^2
Tetrahydrofuran	9212	-17.8	0.91
Chloroform	15017	-33.9	0.96
Acetonitrile	15057	-38.4	0.99
n-Butanol	14641	-36.3	0.90
Ethanol	12712	-29.9	0.95
Ethyl acetate	6307	-15.7	0.99
Pyridine	6662	-7.5	0.99
Methyl acetate	7609	-18.9	0.98

Table A4

Probes	90 ˚C	100 ˚C	110 ˚C
n-Heptane	18.46	19.02	20.43
n-Octane	15.91	16.55	17.31
n-Nonane	13.77	14.41	15.69
n-Decane	11.38	12.74	13.84
n-Undecane	9.22	10.35	11.39
n-Dodecane	7.23	8.43	9.31
Tetrahydrofuran	19.98	20.69	21.24
Chloroform	18.55	19.53	22.24
Acetonitrile	21.66	22.81	22.98
n-Butanol	15.61	17.06	17.96
Ethanol	22.02	23.22	24.63
Ethyl acetate	20.91	21.98	24.14
Pyridine	14.50	15.75	16.98
Methyl acetate	23.68	25.08	25.00
1,4 Dioxane	17.24	18.23	19.55
1-Propanol	19.74	21.37	22.13
2-Pentanone	18.19	19.15	20.33
Cyclopentanone	15.25	16.44	17.28
1-Nitropropane	16.31	16.70	18.18
Methanol	19.08	19.76	20.39

Table A5

Probes	90 ˚C	100 ˚C	110 ˚C
n-Heptane	-50.84	-50.97	-53.33
n-Octane	-69.84	-69.69	-69.85
n-Nonane	-95.34	-94.49	-95.36
n-Decane	-123.19	-123.55	-123.19
n-Undecane	-108.41	-108.52	-108.41
n-Dodecane	-103.99	-104.43	-103.99
Tetrahydrofuran	-63.27	-63.48	-63.27
Chloroform	-183.69	-181.39	-183.74
Acetonitrile	-66.53	-67.82	-66.51
n-Butanol	-117.34	-118.07	-117.34
Ethanol	-130.17	-129.90	-130.18
Ethyl acetate	-160.94	-159.51	-160.97
Pyridine	-123.69	-123.73	-123.70
Methyl acetate	-66.55	-68.50	-66.52
1,4 Dioxane	-115.27	-114.84	-115.28
1-Propanol	-119.90	-121.06	-119.89
2-Pentanone	-106.94	-106.64	-106.95
Cyclopentanone	-101.14	-101.60	-101.13
1-Nitropropane	-92.80	-91.36	-92.83
Methanol	-65.68	-56.65	-56.81

Table A6

Probes	90 ˚C	100 ˚C	110 ˚C
n-Heptane	19.37	19.04	19.60
n-Octane	19.34	19.05	18.90
n-Nonane	19.69	19.34	19.65
n-Decane	19.80	20.13	20.21
n-Undecane	20.08	20.11	20.08
n-Dodecane	20.51	20.57	20.32
Tetrahydrofuran	17.96	17.82	17.53
Chloroform	16.16	16.30	18.19
Acetonitrile	21.17	21.46	20.78
n-Butanol	18.96	19.22	18.97
Ethanol	20.82	20.92	21.25
Ethyl acetate	19.87	20.05	21.32
Pyridine	16.94	17.25	17.55
Methyl acetate	20.85	21.38	20.46
1,4 Dioxane	18.44	18.51	18.93
1-Propanol	20.67	21.16	20.80
2-Pentanone	19.45	19.49	19.77
Cyclopentanone	19.16	19.39	19.28
1-Nitropropane	20.36	19.78	20.30
Methanol	16.45	16.09	15.69

Table A7

Probes	90 °C			100 °C			110 °C		
	δ_d	δ_p	δ_h	δ_d	δ_p	δ_h	δ_d	δ_p	δ_h
n-Octane	14.9	0	0	14.8	0	0	14.7	0	0
n-Nonane	15.1	0	0	15.0	0	0	14.9	0	0
n-Decane	15.2	0	0	15.1	0	0	15.0	0	0
n-Undecane	15.5	0	0	15.4	0	0	15.3	0	0
n-Dodecane	15.5	0	0	15.4	0	0	15.3	0	0
Tetrahydrofuran	16.1	5.4	7.6	15.9	5.4	7.6	15.8	5.4	7.5
Chloroform	17.0	3.0	5.5	16.9	2.9	5.4	16.8	2.9	5.4
Acetonitrile	14.5	17.1	5.8	14.4	16.9	5.7	14.3	16.8	5.7
n-Butanol	15.4	5.5	15.2	15.3	5.4	15.1	15.2	5.4	15.0
Ethanol	15.1	8.4	18.6	15.0	8.4	18.4	14.9	8.3	18.3
Ethyl acetate	15.0	5.0	6.9	14.9	5.0	6.8	14.8	5.0	6.7
Pyridine	18.3	8.5	5.7	18.2	8.4	5.7	18.1	8.4	5.6
1,4 Dioxane	18.3	1.7	7.1	18.2	1.7	7.1	18.1	1.7	7.0
1-Propanol	15.4	6.5	16.7	15.3	6.5	16.6	15.2	6.4	16.5
2-Pentanone	15.3	7.3	4.5	15.2	7.2	4.5	15.1	7.2	4.4
Cyclopentanone	17.3	11.5	5.0	17.2	11.4	5.0	17.1	11.4	5.0
1-Nitropropanone	15.9	11.8	5.3	15.8	11.7	5.2	15.7	11.6	5.2
Methanol	14.5	11.8	21.3	14.3	11.7	21.2	14.2	11.6	21.0
Water	15.3	15.8	41.8	15.3	15.8	41.7	15.3	15.8	41.6

List of Supplementary Tables

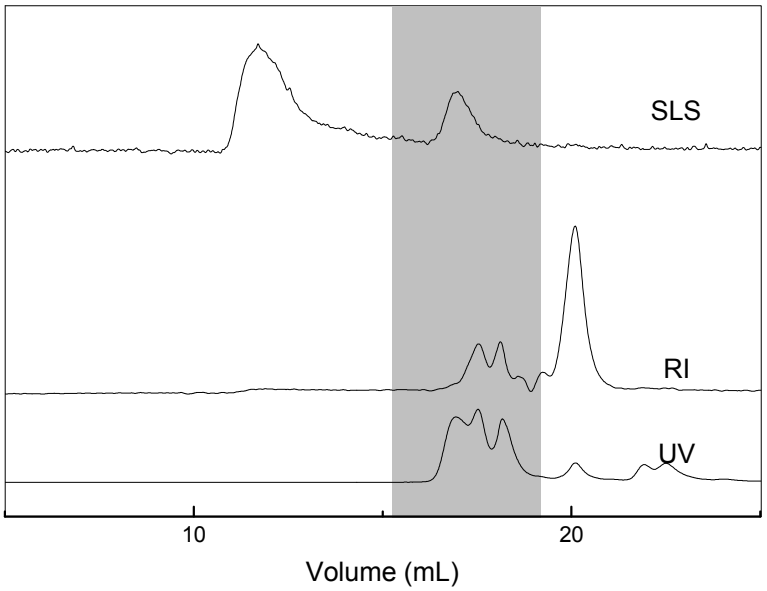

Fig. A1

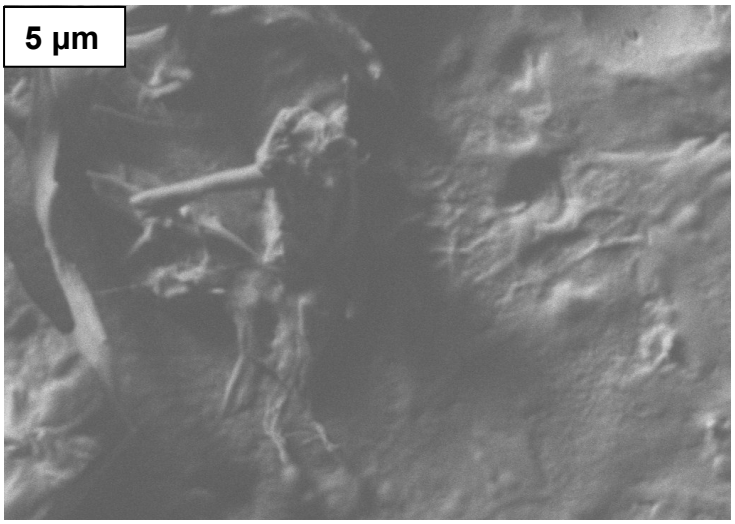

Fig. A2

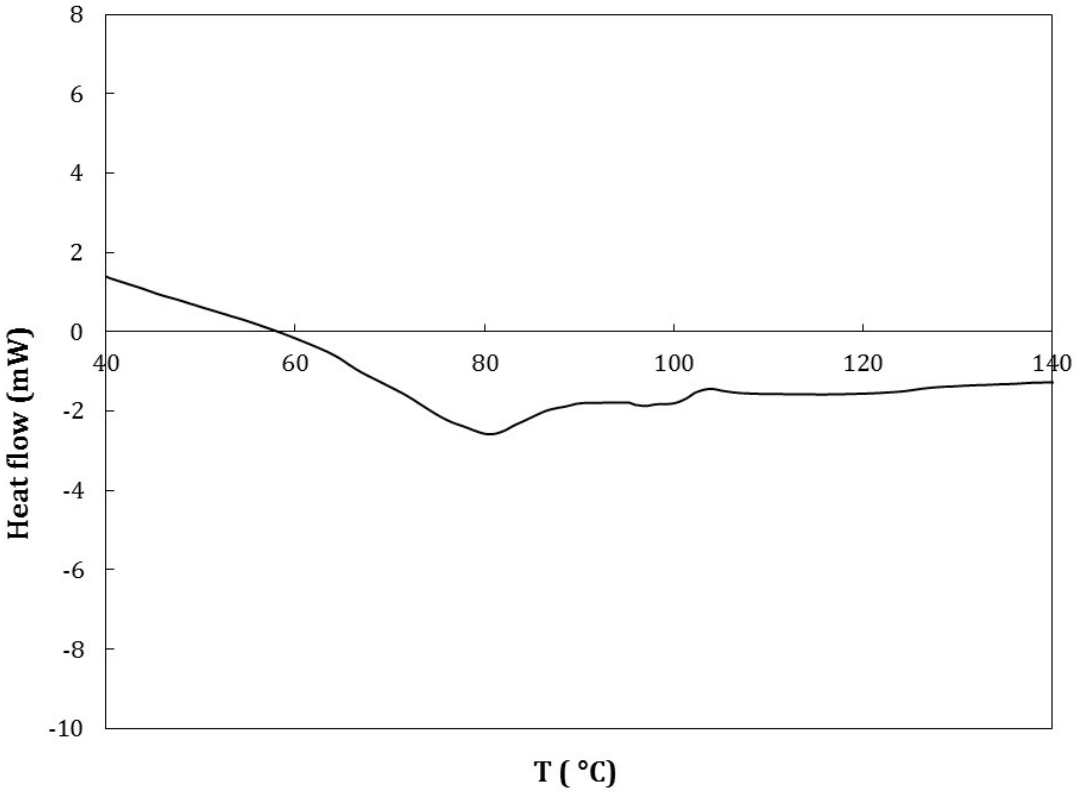

Fig. A3

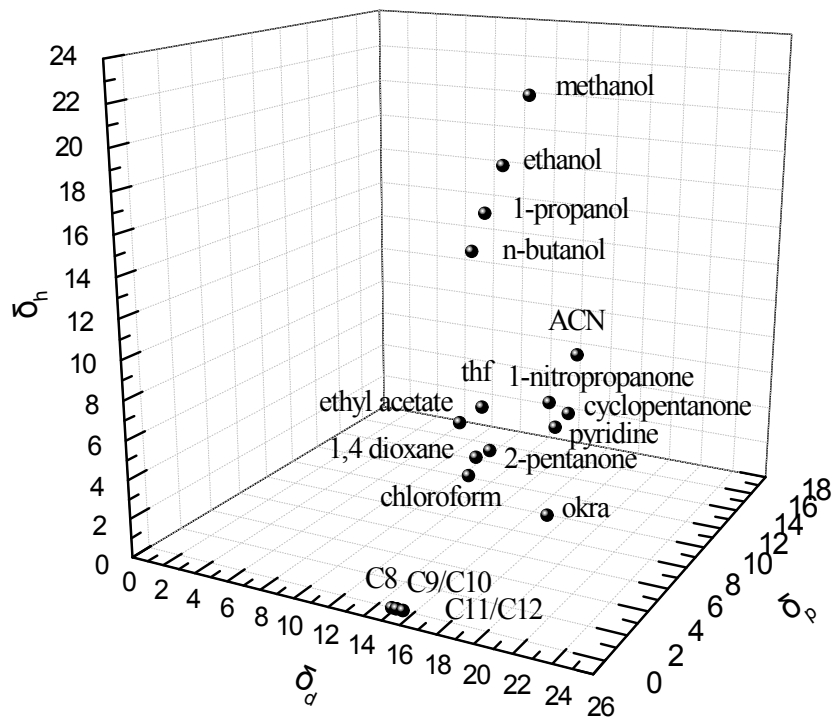
methanol
ethanol
1-propanol
n-butanol
ACN
thf
1-nitropropanone
ethyl acetate
cyclopentanone
pyridine
1,4 dioxane
2-pentanone
chloroform
okra
C8
C9/C10
C11/C12
δn
δd
δp

Fig. A4

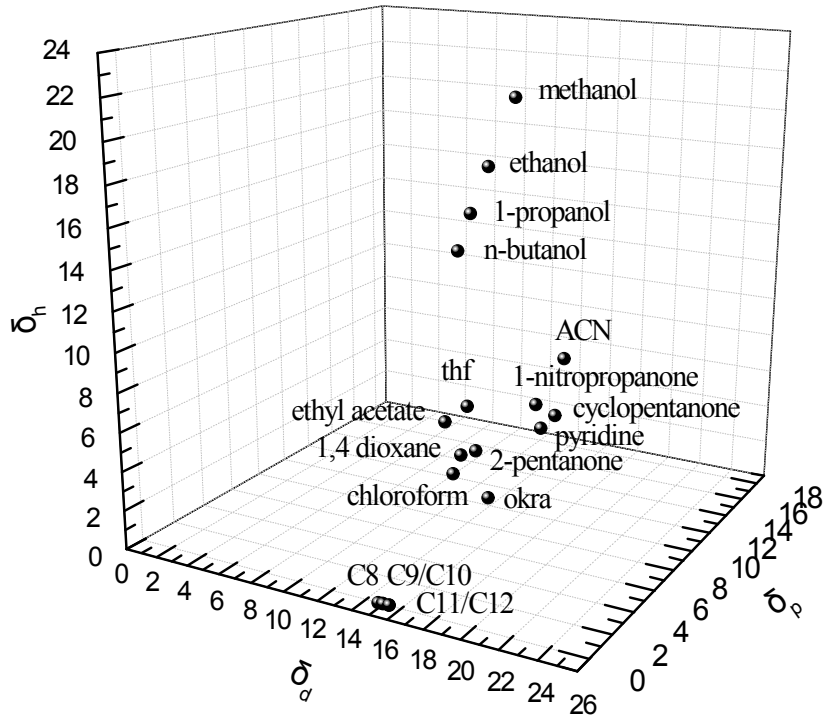
methanol
ethanol
1-propanol
n-butanol
ACN
thf
1-nitropropanone
cyclopentanone
ethyl acetate
pyridine
1,4 dioxane
2-pentanone
chloroform
okra
C8 C9/C10
C11/C12
δh
δd
δp

Fig. A5

List of Supplementary Figures

Fig. A1: Size exclusion chromatograms for the okra extract, as taken by a SEC–MALLS/UV/RI setup. The data presented for SLS (MALLS) are scattering intensities recorded at 90 °C, in an abstract intensity y-scale. The highlighted region corresponds to a region of strong absorbance at 280 nm, as recorded by a UV detector

Fig. A2: Scanning electron microscopy (SEM) image (bar = 5 μm) for okra extract.

Fig. A3: Differential scanning calorimetry (DSC) of okra gum extract.

Fig. A4: Partial solubility parameters in three dimensions (Hansen space) of okra at 100°C.

Fig. A5: Partial solubility parameters in three dimensions (Hansen space) of okra at 110°C.