Figure S1. Organic volume fraction remaining (ϕ_V) for increasing thermodenuder temperature. Measurements were made using the SMPS. The organic material was prepared by the ozonolysis of α-pinene. Lines are shown to guide the eye. The values of M_{org} shown in the figure legend and measured by the AMS are the mass concentrations prior to thermodenuder treatment.

Figure S2. Unit-mass-resolution organic mass spectra for the four poles of the study's experimental conditions. These poles were the lowest and highest M_{org} of the study, with experiments in each case using the thermodenuder set to 100 °C or alternatively bypassing the thermodenuder .

Figure S3. Dependence of (a) m/z 44, (b) m/z 43, and (c) m/z 55 on M_{org}. Results are shown for different values of M_{org} measured after heat treatment. The lines are shown to guide the eye.

Experiment number	α-pinene (ppb) [a]	M_{org} (T) (μg m^{-3})					κ_{org} (25 °C, S)		κ_{org} (60 °C, S)		κ_{org} (80 °C, S)		κ_{org} (100 °C, S)	
		Bypass	25 °C	60 °C	80 °C	100 °C	0.2%	0.3%	0.2%	0.3%	0.2%	0.3%	0.2%	0.3%
1	8	1.4	0.9	0.8	0.7	0.5	0.104[b]	0.103	0.107	0.105	0.105	0.105	0.105	0.102
2	24	5.7	3.9	3.4	2.6	2.0	0.100	0.096	0.098	0.098	0.097	0.094	0.095	0.091
3	32	9.5	6.4	5.5	4.4	3.2	0.106	0.109	0.104	0.098	0.096	0.094	0.087	0.085
4	60	25	17	15	12	9.0	0.102	0.099	0.099	0.098	0.094	0.094	0.084	0.080
5	80	37	25	22	17	13	0.105	0.103	0.101	0.102	0.095	0.097	0.079	0.079

Table S1. List of experiments and corresponding results. [a]The α-pinene concentration was calculated from the injection rate. [b]Corresponding diameter ranges are around 135 nm (S = 0.2%, 25 °C) and 100 nm (S = 0.3%, 25 °C), respectively

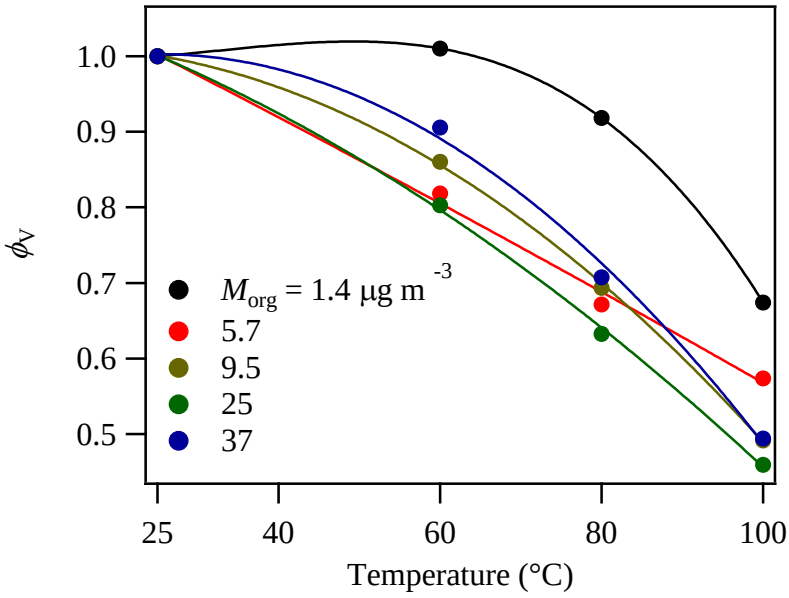

Figure S1

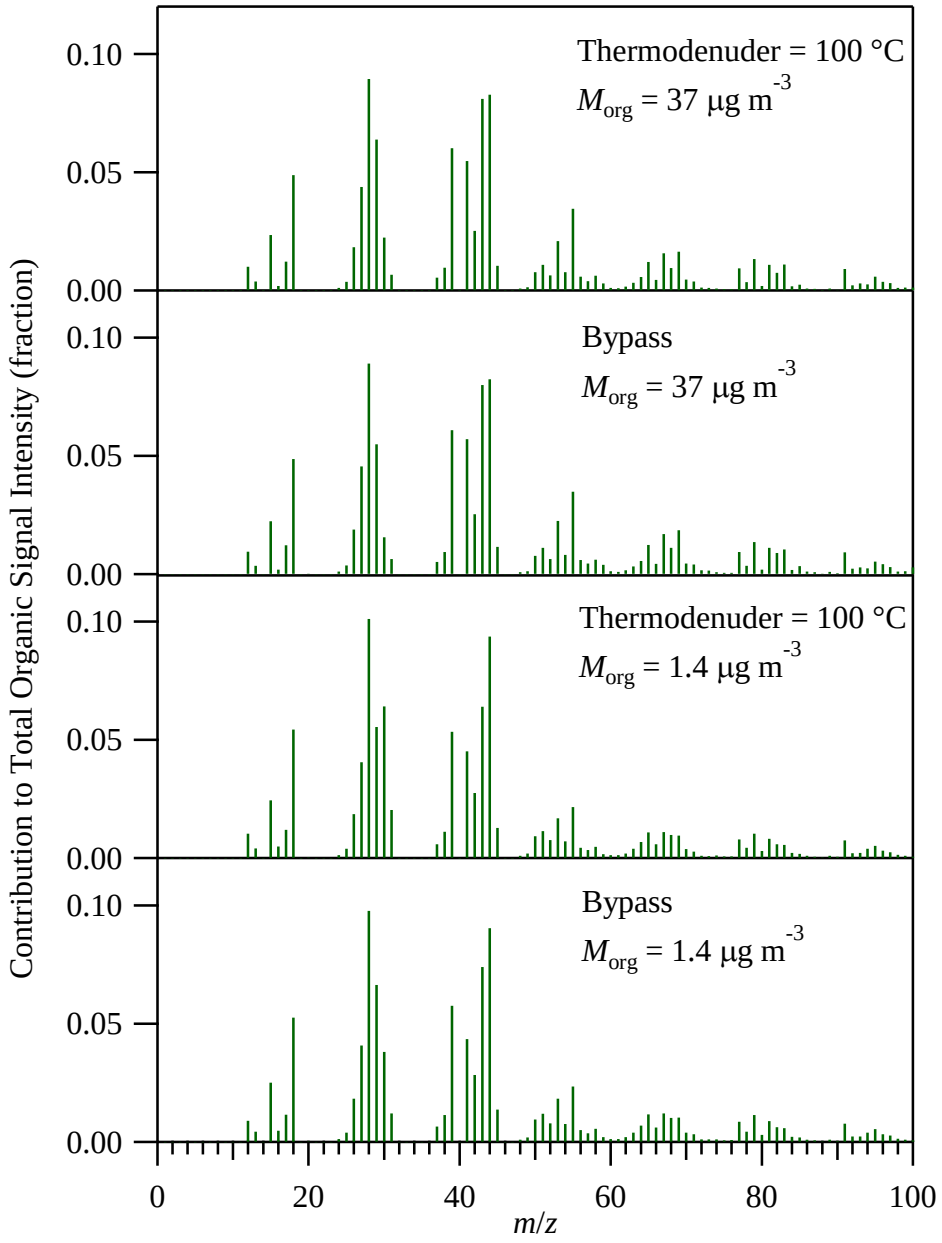
Thermodenuder = 100 °C
M_{org} = 37 μg m^{-3}
Bypass
M_{org} = 37 μg m^{-3}
Thermodenuder = 100 °C
M_{org} = 1.4 μg m^{-3}
Bypass
M_{org} = 1.4 μg m^{-3}
Contribution to Total Organic Signal Intensity (fraction)
0.10
0.05
0.00
0
20
40
60
80
100
m/z

Figure S2

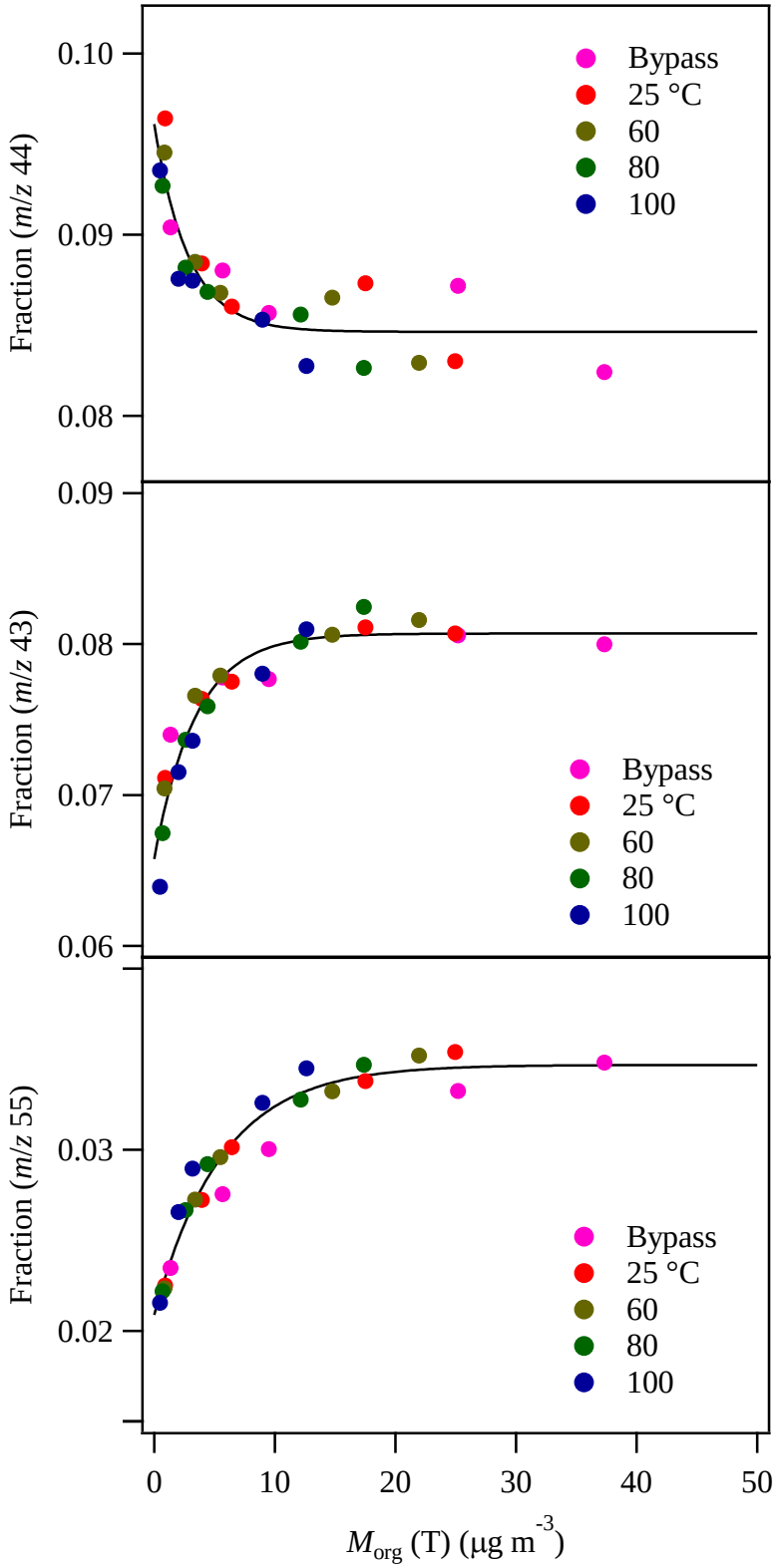
Fraction (m/z 44)
0.10
0.09
0.08
Bypass
25 °C
60
80
100
Fraction (m/z 43)
0.09
0.08
0.07
0.06
Bypass
25 °C
60
80
100
Fraction (m/z 55)
0.03
0.02
Bypass
25 °C
60
80
100
0
10
20
30
40
50
M org (T) (µg m -3)

Figure S3