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Supplement of

NO_3 chemistry of wildfire emissions: a kinetic study of the gas-phase reactions of furans with the NO_3 radical

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Table S1 Relative $k(NO_3)$ rates for each compound relative to each other for each experiment.

Compound1	**Compound2**	**Reference**	***k*C1/*k*R**	***k*C2/*k*R**	***k*C1/*k*C2**	**Date**
furan	α-angelicalactone	α-pinene	0.25	0.466	0.536	04/05/21
furan	furfural	cyclohexene	2.73	0.153	17.8	07/04/21
furan	-	camphene	2.39	-	-	11/05/21
2-methylfuran	-	2-carene	1.30	-	-	26/03/21
2-methylfuran	pyrrole	2-carene	1.15	3.84	0.30	30/03/21
2-methylfuran	-	α-pinene	3.66	-	-	05/05/21
2-methylfuran	-	TME	0.346	-	-	07/05/21
2,5-dimethylfuran	2-methylfuran	2-carene	5.60	1.26	4.46	01/04/21
2,5-dimethylfuran	pyrrole	2-methylfuran	4.60	3.04	1.52	02/04/21
2,5-dimethylfuran	2-methylfuran	TME	2.12	0.398	5.33	19/04/21
		3-M-3-buten-				21/04/21
furfural	-	1-ol	0.367	-	-	
furfural	-	camphene	0.144	-	-	12/05/21
α-angelicalactone	furan	cyclohexene	5.41	2.46	2.2	08/04/21
pyrrole	-	TME	1.23	-	-	06/05/21
pyrrole	-	TME	1.25	-	-	08/05/21

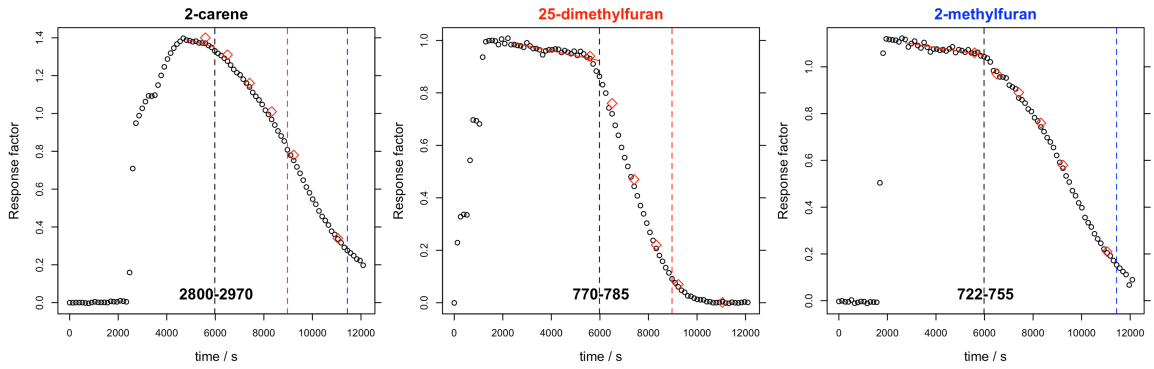

Figure S1 Concentration-time profiles from experiment with 2-carene, 2,5-dimethylfuran and 2-methylfuran. Further plot details are as for Figure 1 in the main manuscript.

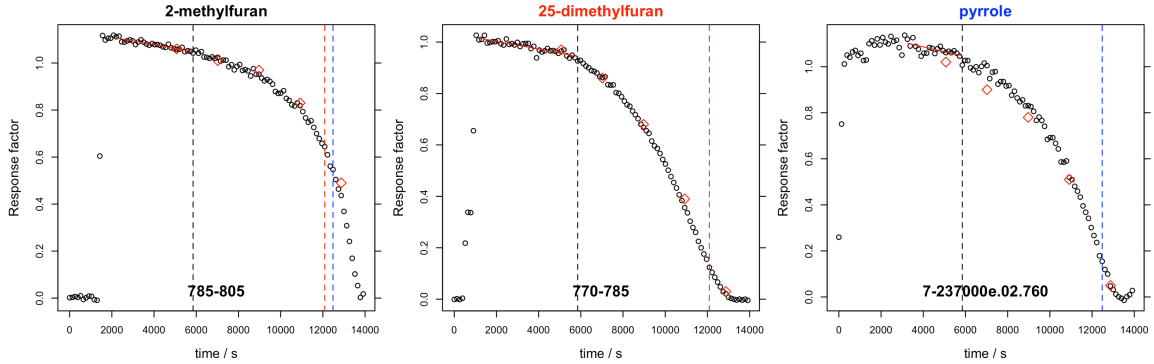

Figure S2 Concentration-time profiles from experiment with 2-methylfuran, 2,5-dimethylfuran, and pyrrole. Further plot details are as for Figure 1 in the main manuscript.

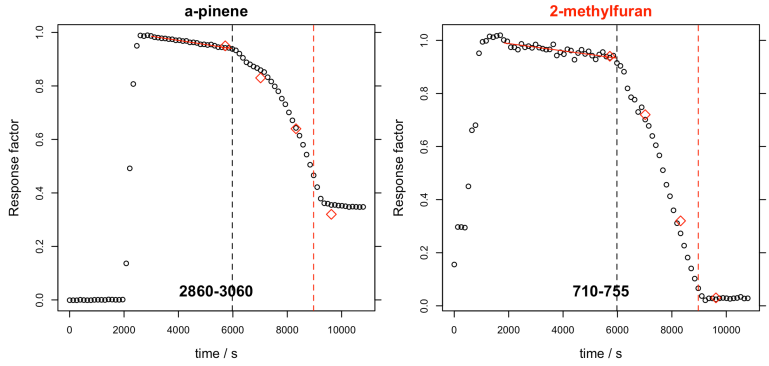

Figure S3 Concentration-time profiles from experiment with α-pinene, and 2-methylfuran. Further plot details are as for Figure 1 in the main manuscript.

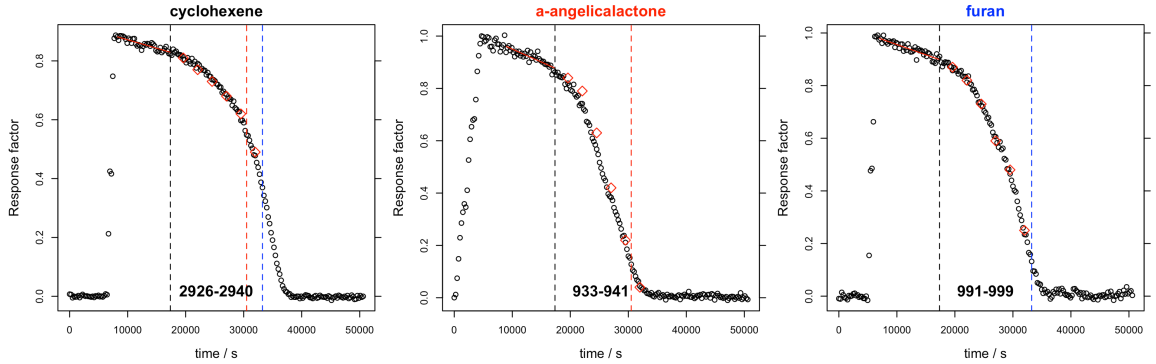

Figure S4 Concentration-time profiles from experiment with α-pinene, and 2-methylfuran. Further plot details are as for Figure 1 in the main manuscript.

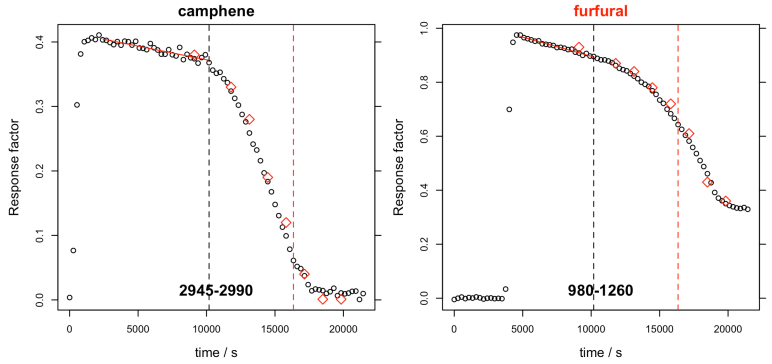

Figure S5 Concentration-time profiles from experiment with camphene, and furfural. Further plot details are as for Figure 1 in the main manuscript.

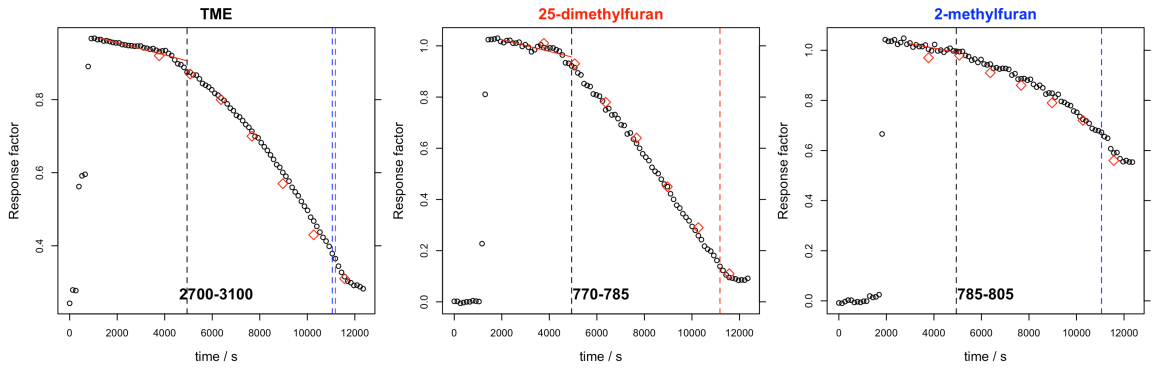

Figure S6 Concentration-time profiles from experiment with 2-methylfuran, 2,5-dimethylfuran, and TME (2,3-dimethyl-2-butene. Further plot details are as for Figure 1 in the main manuscript.

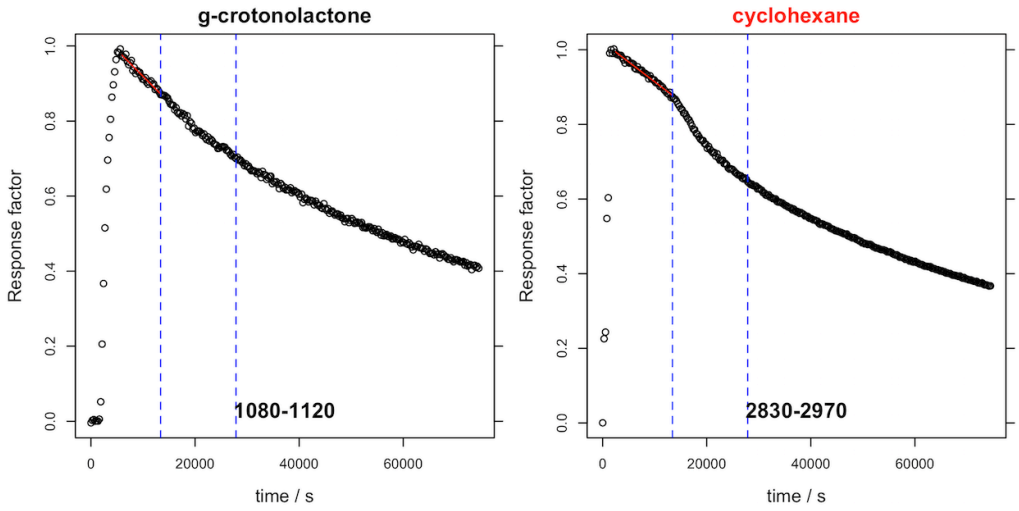

Figure S7 Concentration-time profiles from experiment with γ-crotonolactone, and cyclohexane. Further plot details are as for Figure 1 in the main manuscript.

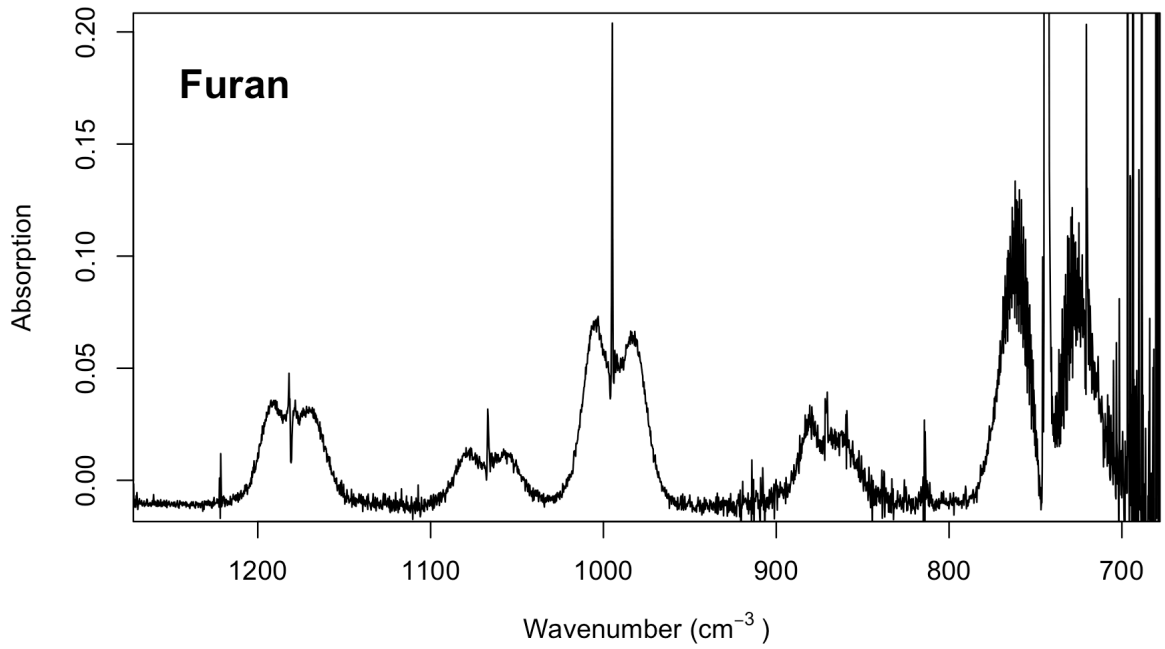

Figure S8 Reference spectrum of furan at a resolution of 0.25 cm^{-1}

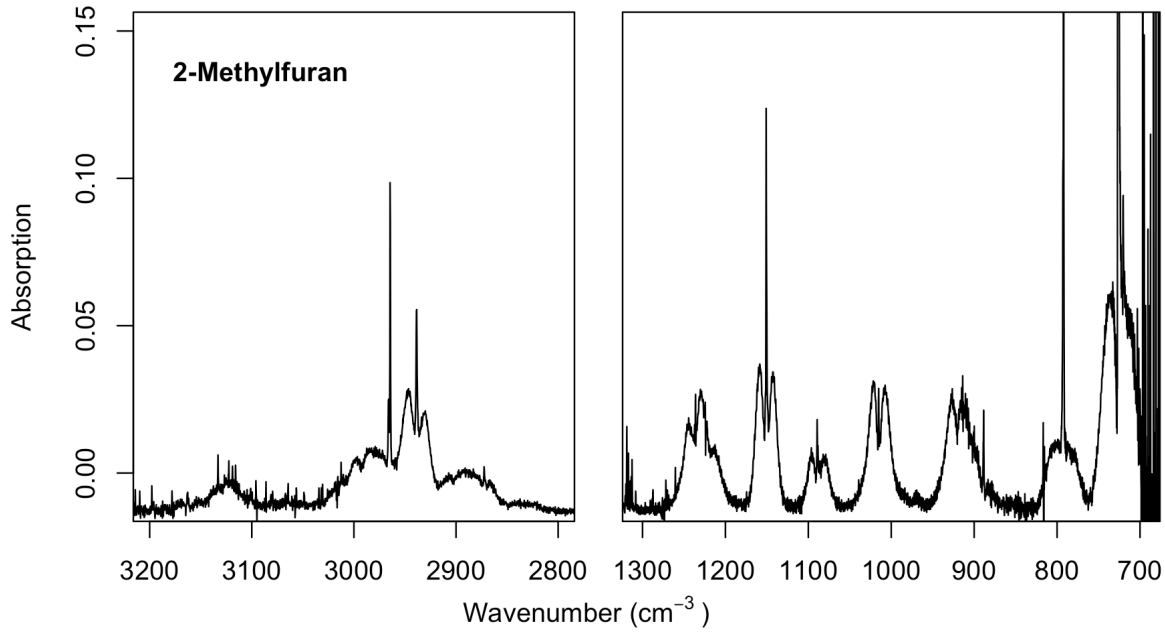

Figure S9 Reference spectrum of 2-methylfuran at a resolution of 0.25 cm^{-1}

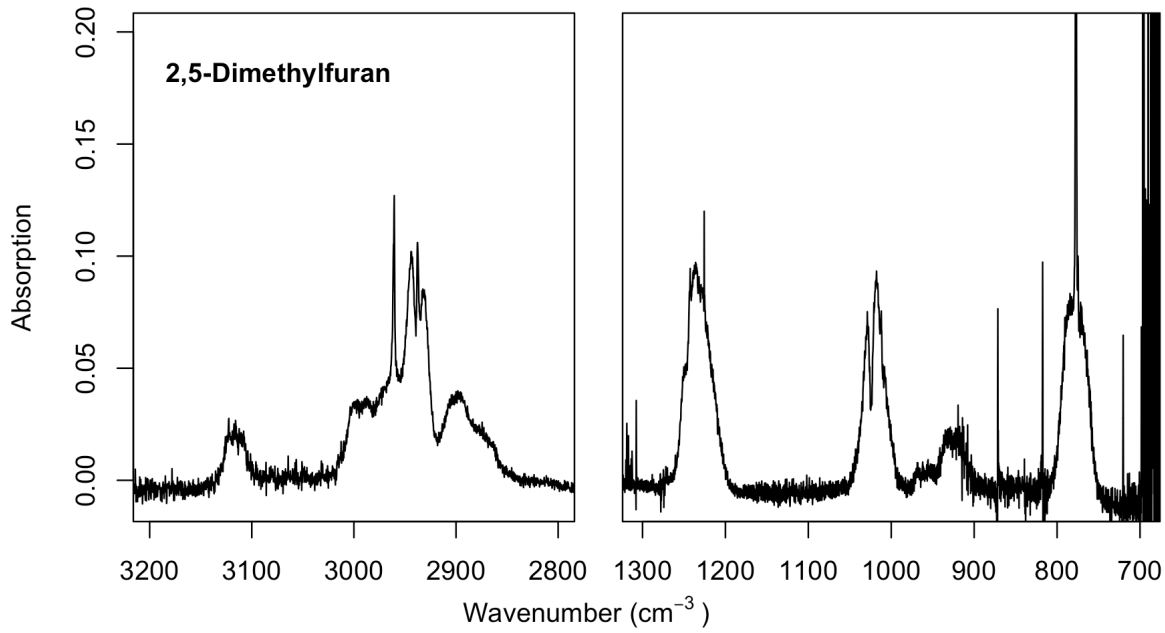

Figure S10 Reference spectrum of 2,5-Dimethylfuran at a resolution of 0.25 cm^{-1}

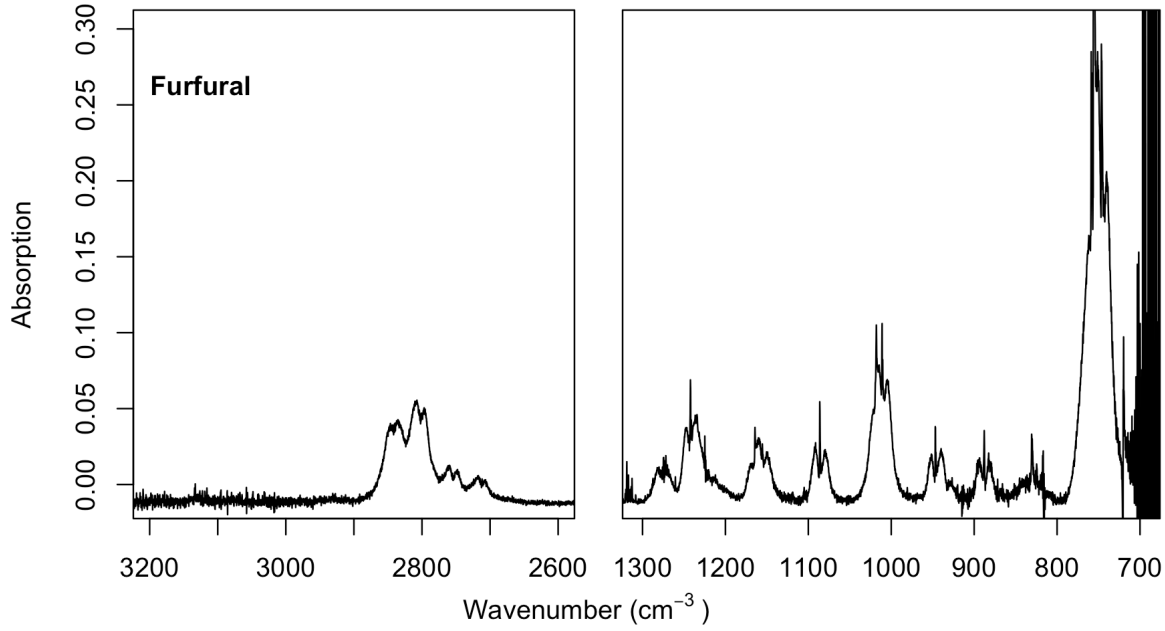

Figure S11 Reference spectrum of furfural at a resolution of 0.25 cm^{-1}

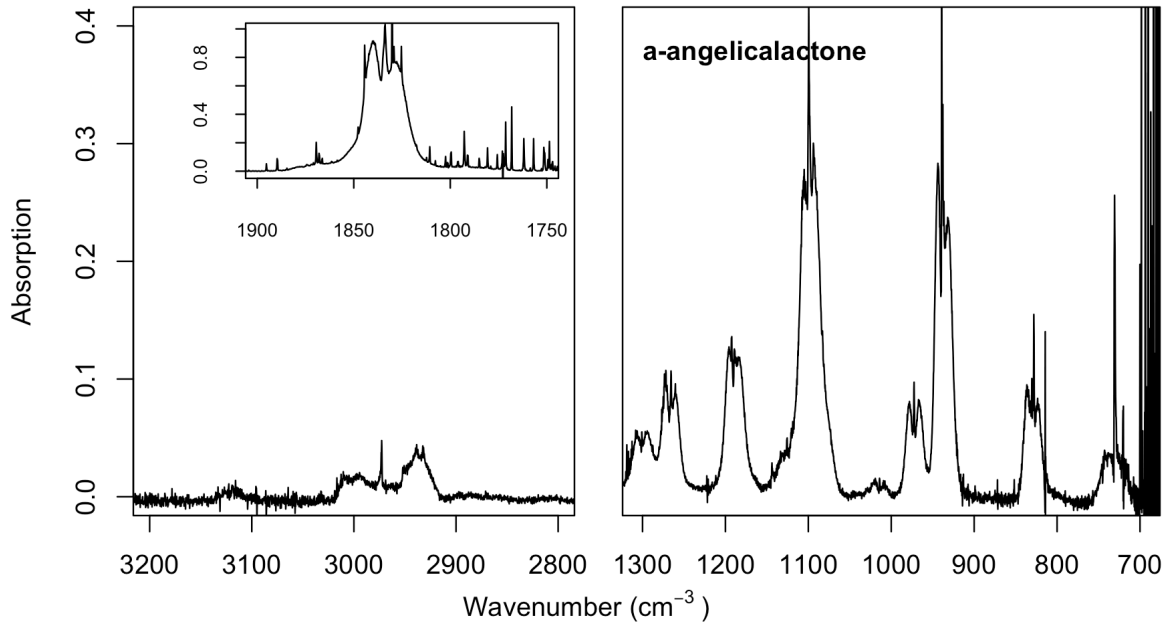

Figure S12 Reference spectrum of α-angelicalactone at a resolution of 0.25 cm^{-1}

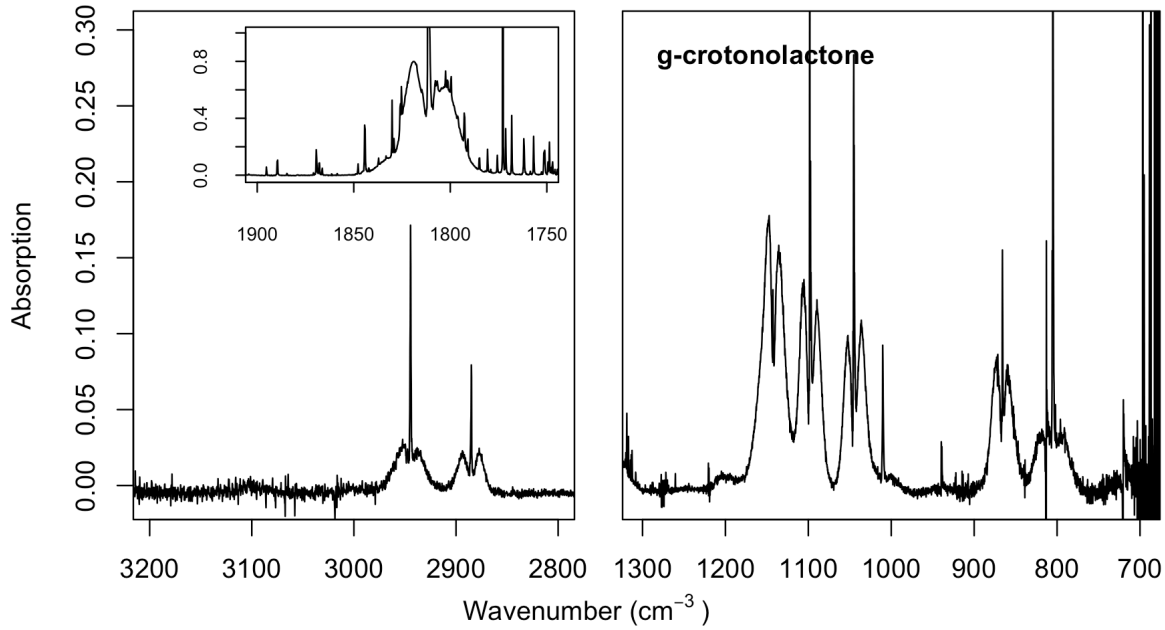

Figure S13 Reference spectrum of γ-crotonolactone at a resolution of 0.25 cm^{-1}

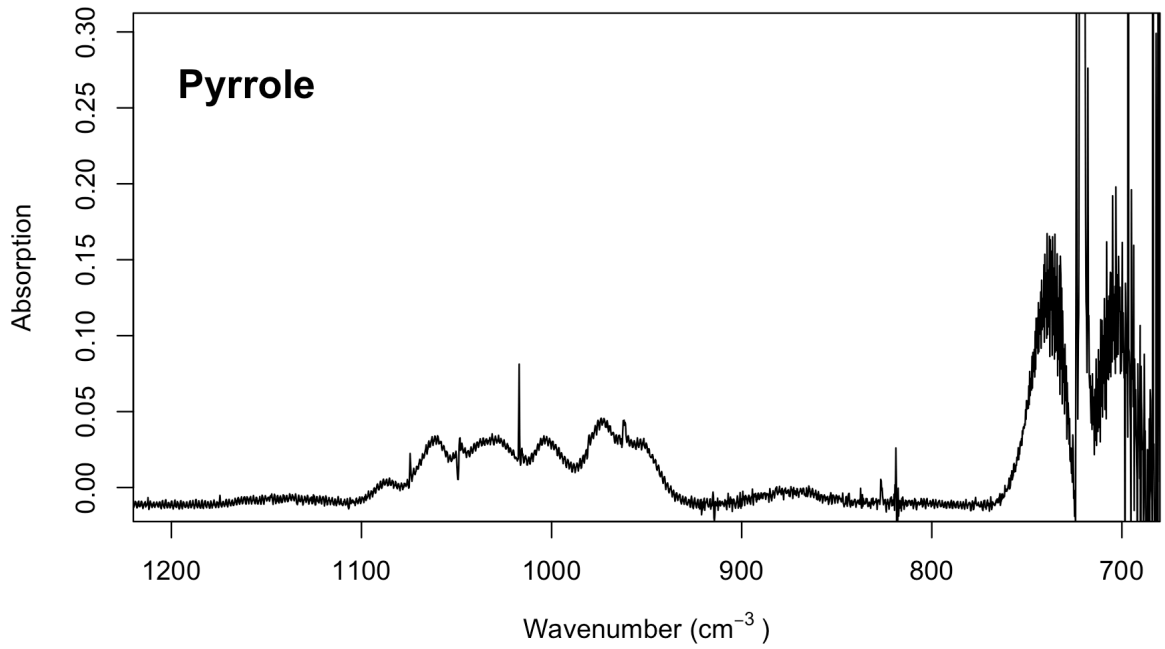

Figure S14 Reference spectrum of pyrrole at a resolution of 0.25 cm^{-1}