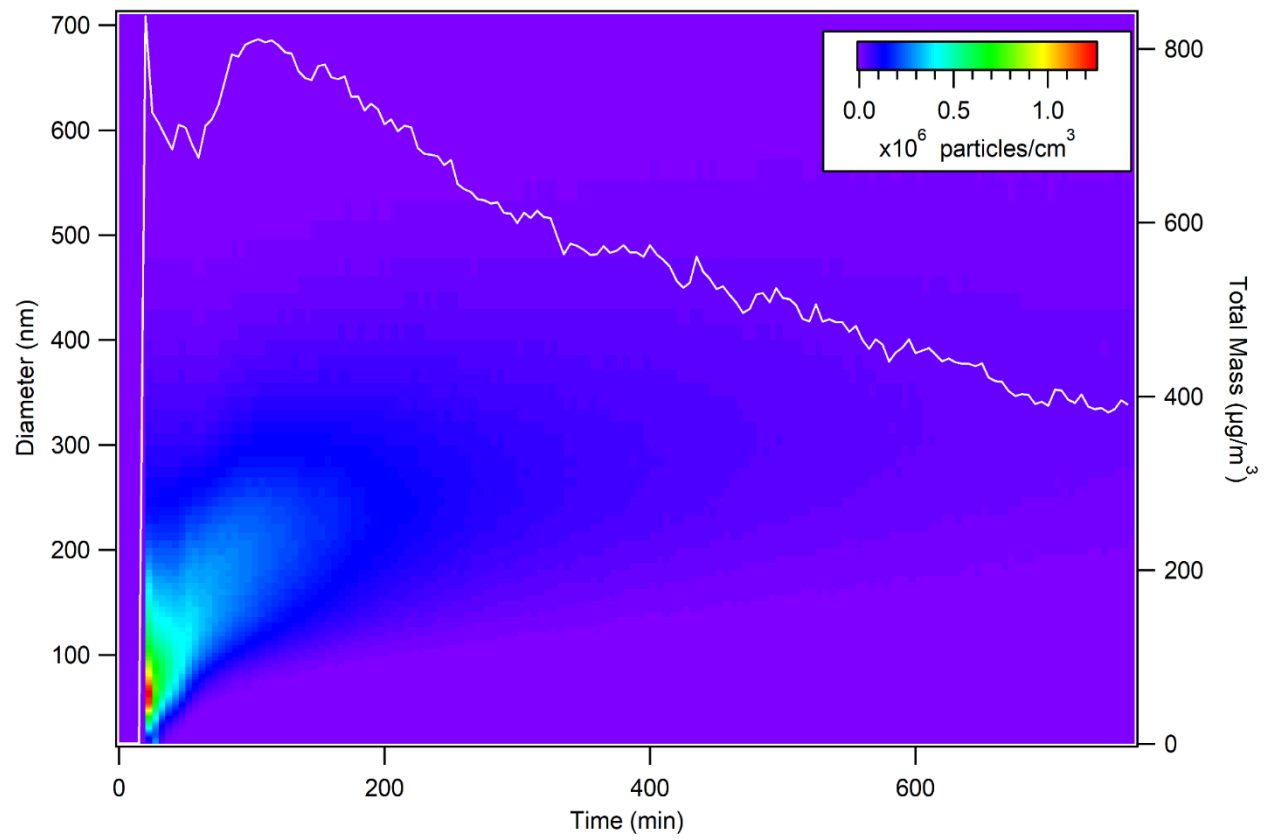


a) Acacia combustion, oven temperature 500 °C



b) Eucalyptus combustion, oven temperature 500 °C

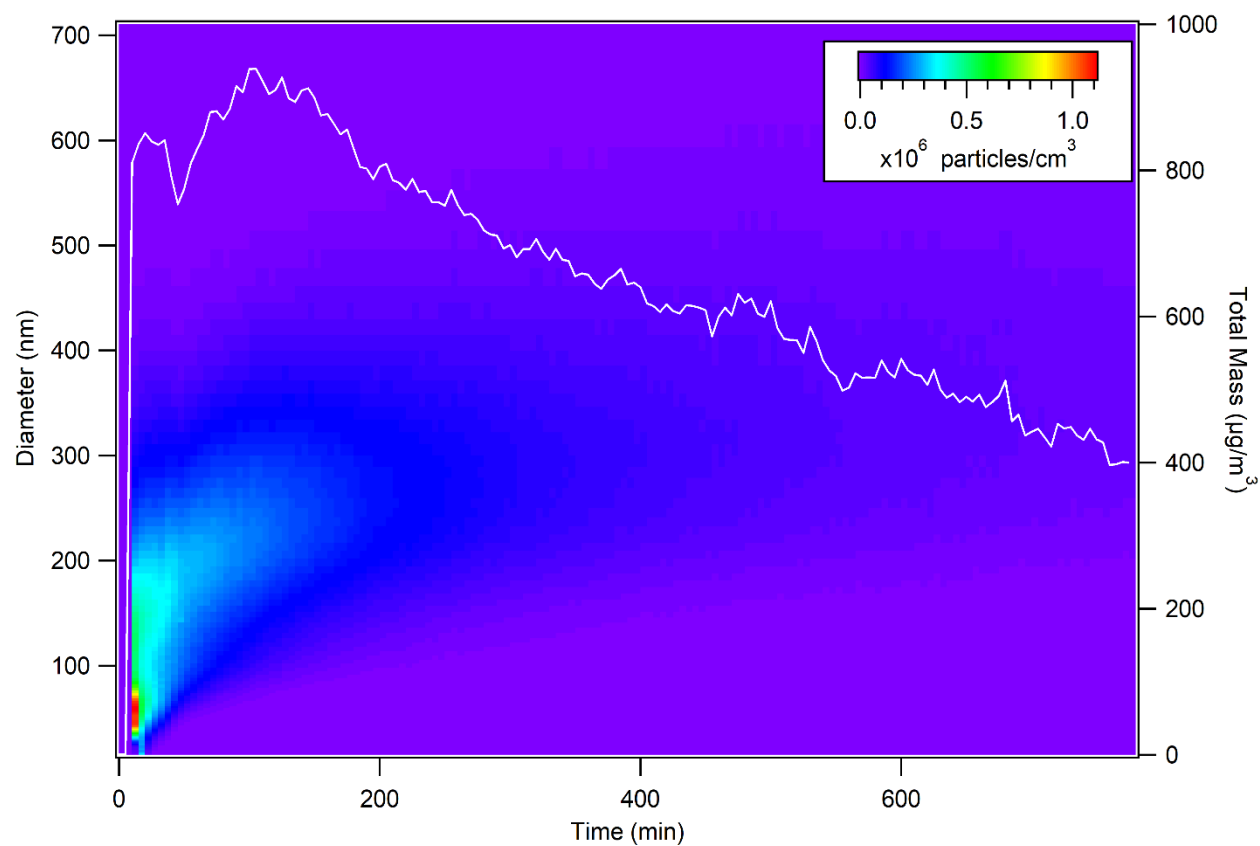
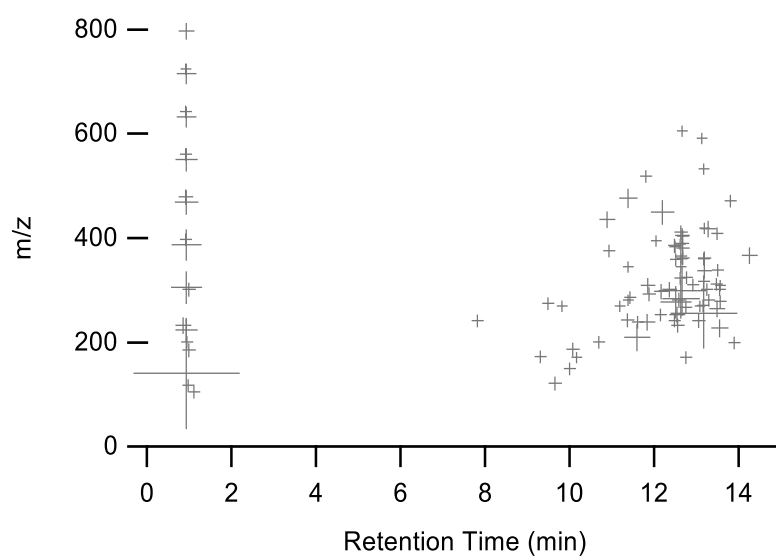
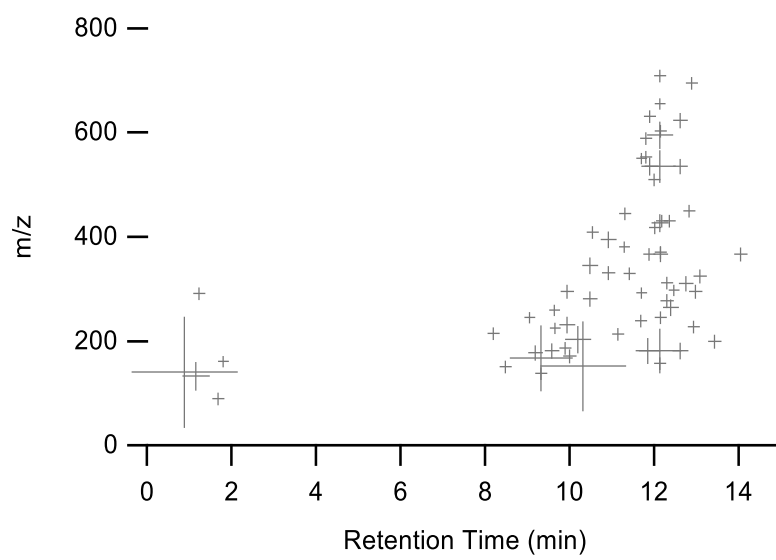
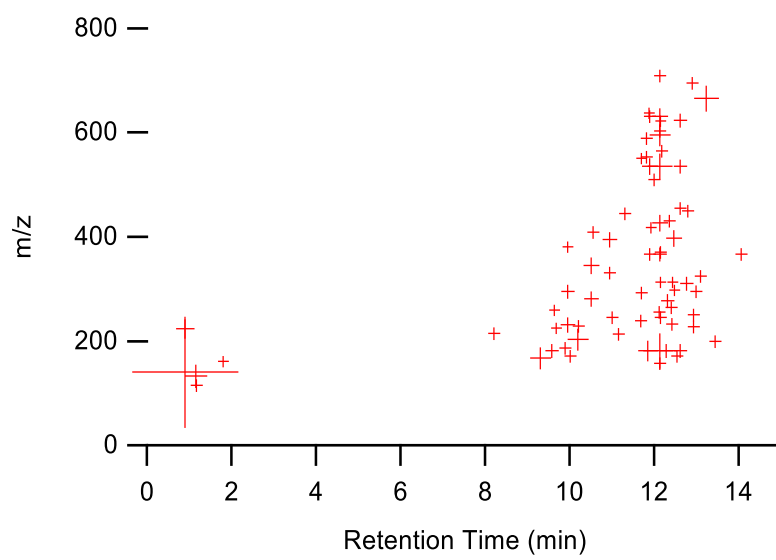


Figure S1. Examples of particle size distributions (number density in $dN/d\log D_p$) and total mass in $\mu\text{g}/\text{m}^3$ as a function of time (min).

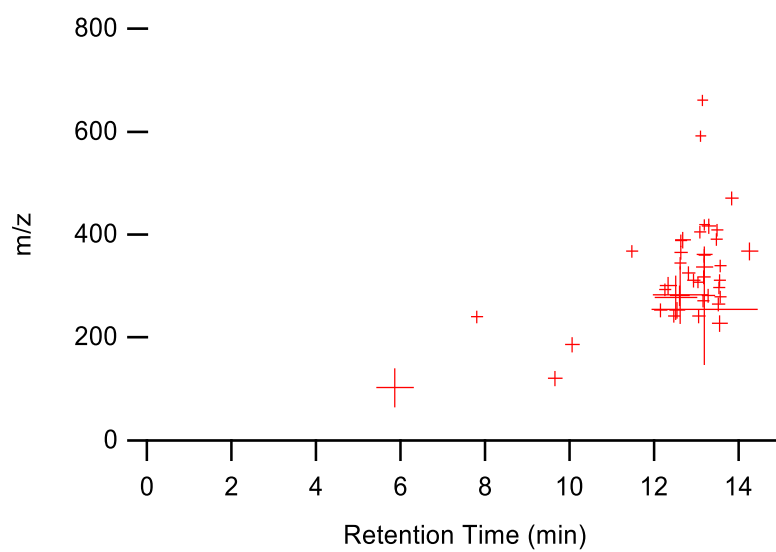
a) Filter blanks



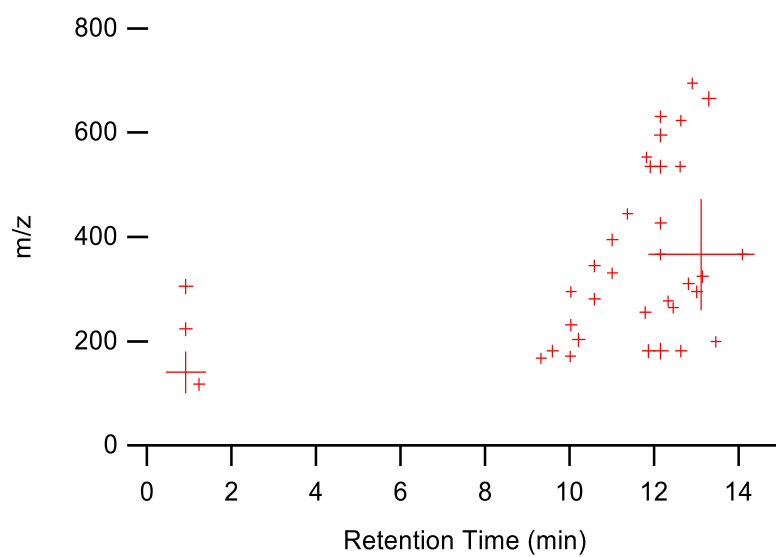
b) Fresh Acacia combusted at 800 °C



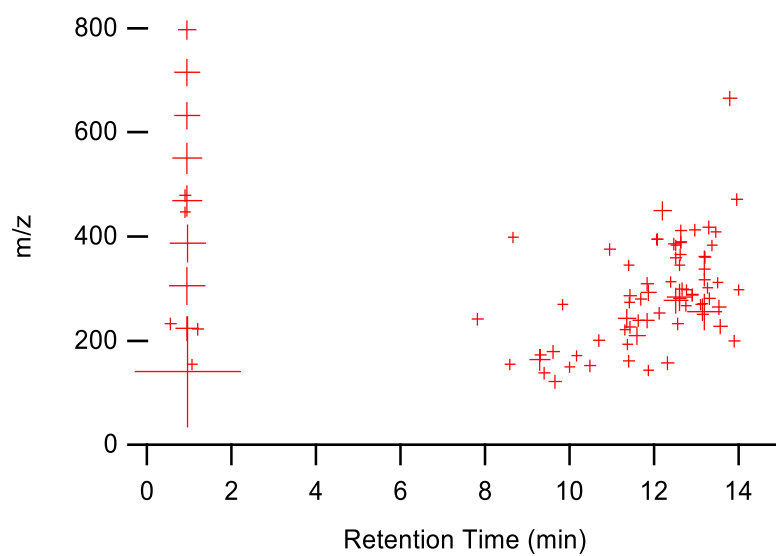
c) Aged Acacia combusted at 800 °C



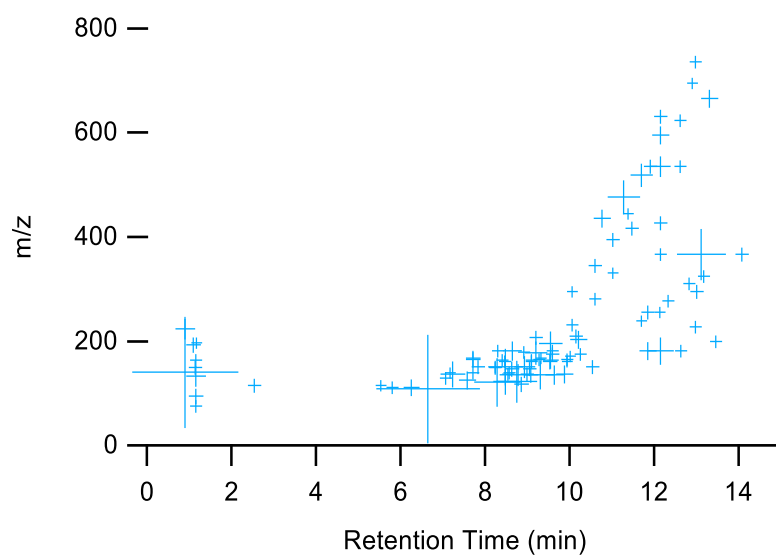
d) Fresh Eucalyptus combusted at 800 °C



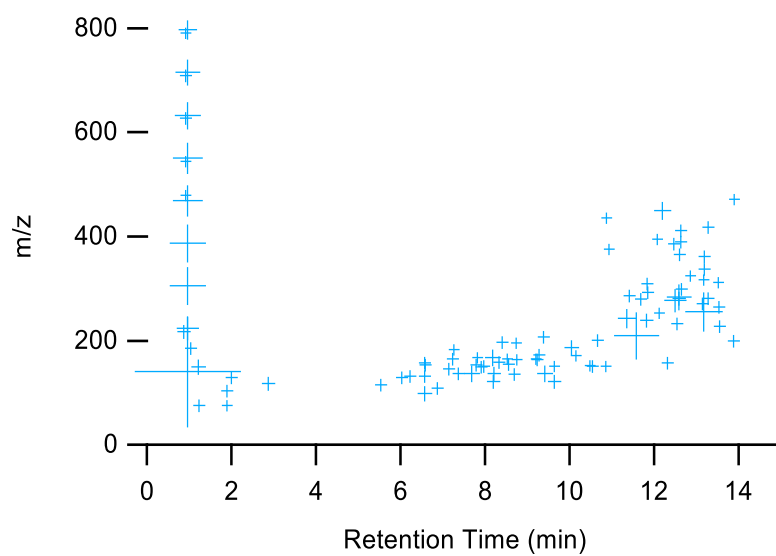
e) Aged Eucalyptus combusted at 800 °C



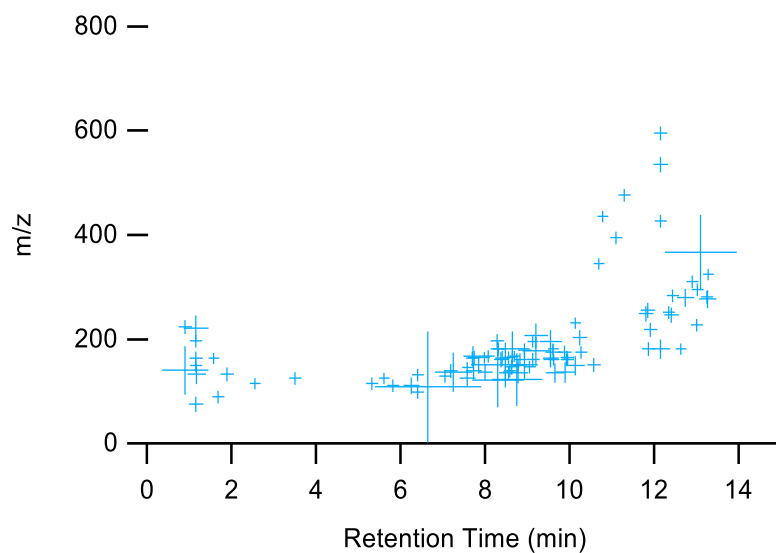
f) Fresh Acacia combusted at 500 °C



g) Aged Acacia combusted at 500 °C



h) Fresh Eucalyptus combusted at 500 °C



i) Aged Eucalyptus combusted at 500 °C

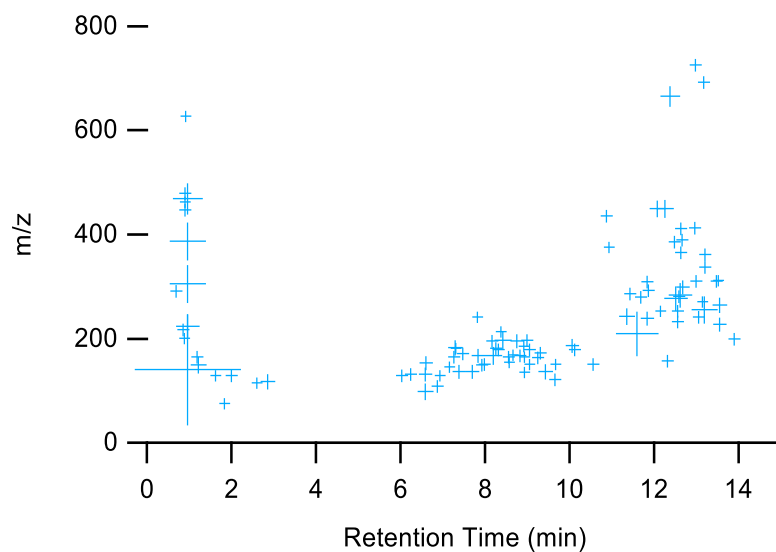
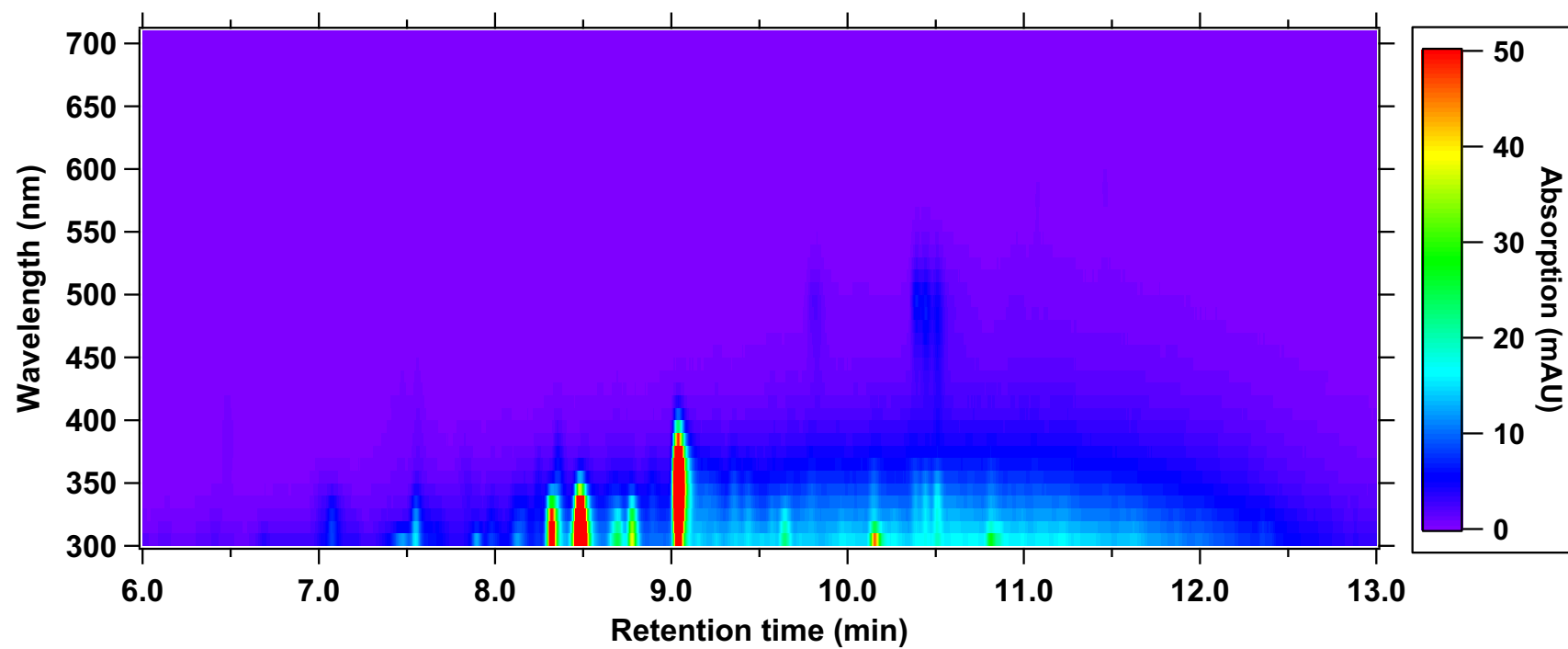
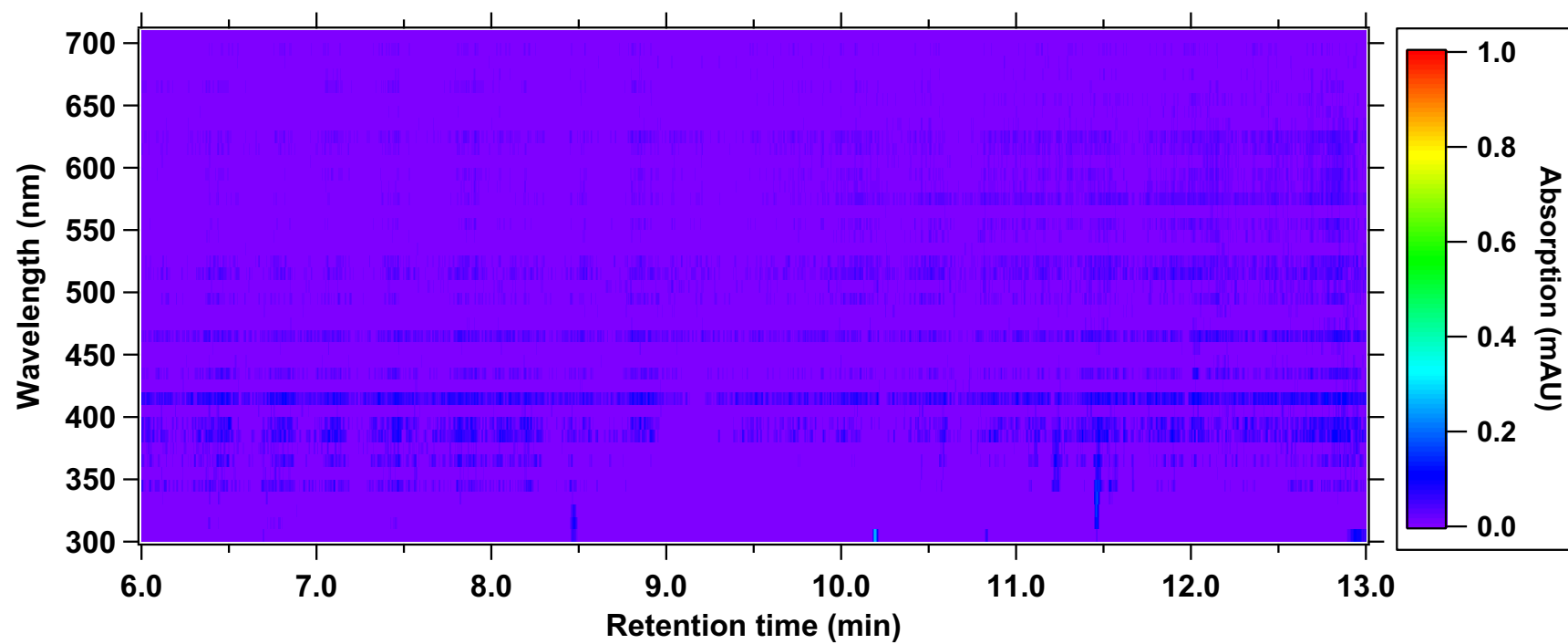


Figure S2. Chromatograms of m/z against retention time. Marker size is proportion to the ion intensity (peak height) for aged and fresh Acacia and Eucalyptus when combusted at 500 °C and 800 °C.

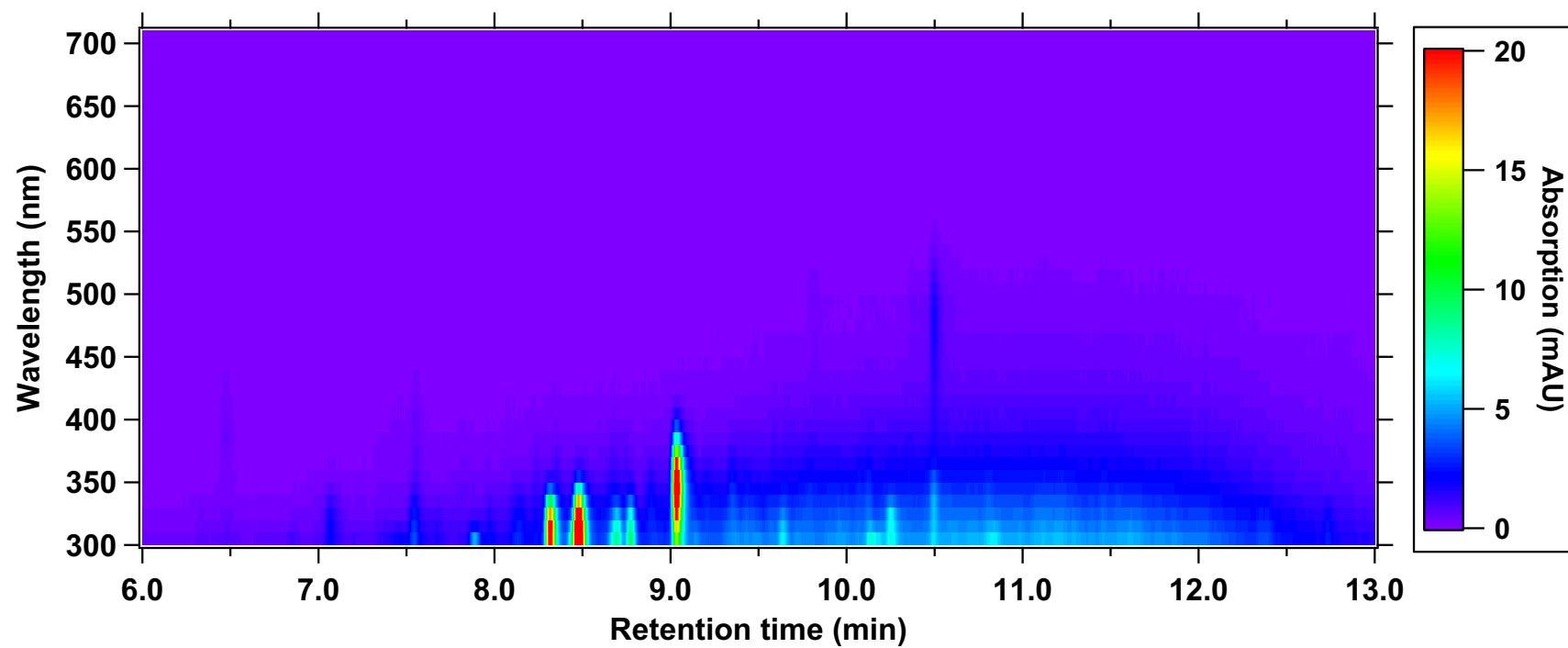
a) Fresh Eucalyptus combusted at 500 °C



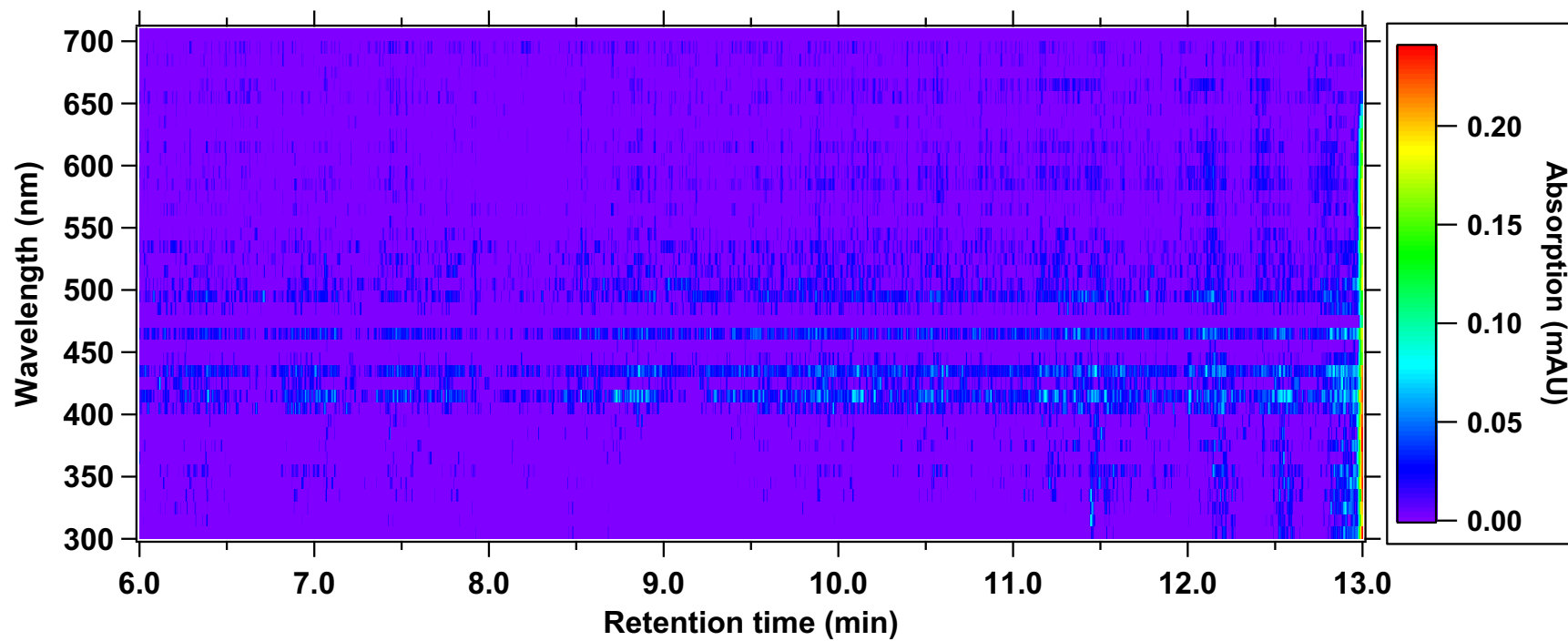
b) Fresh Eucalyptus combusted at 800 °C



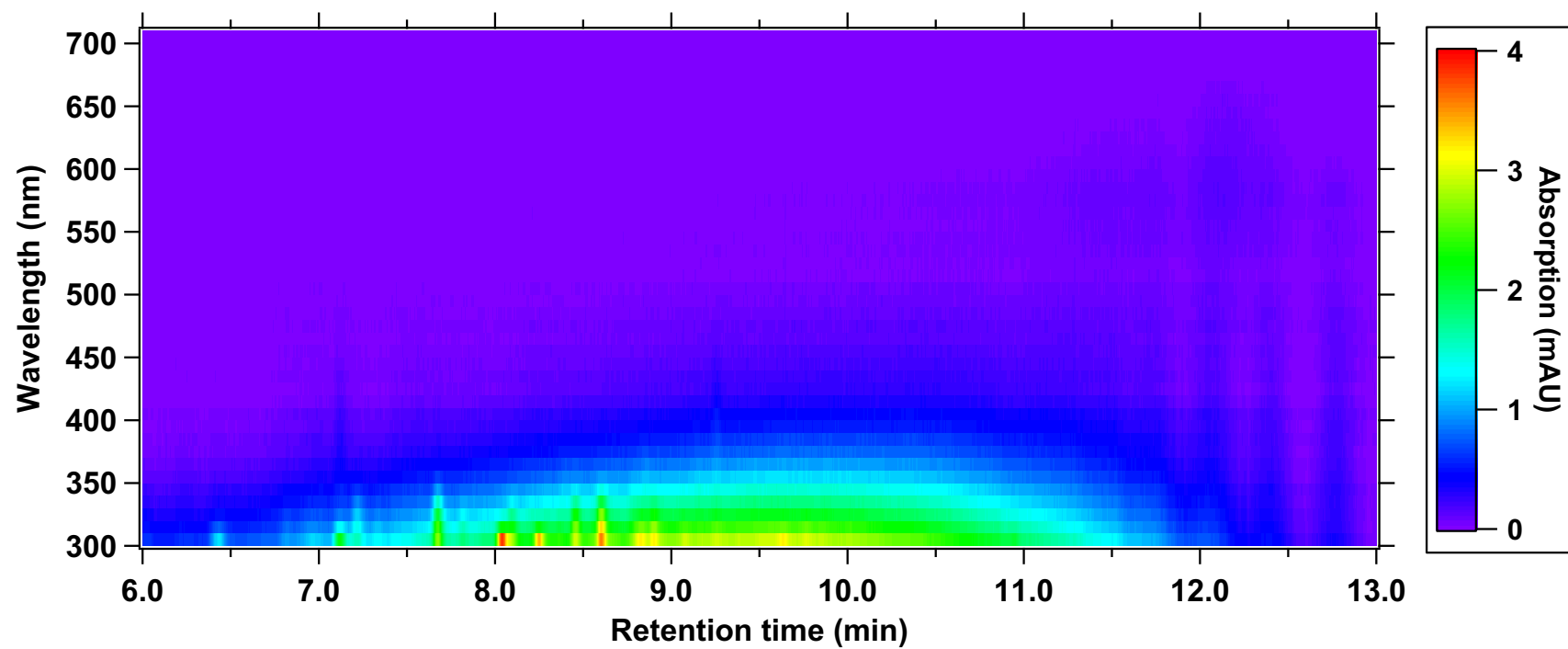
c) Fresh Acacia combusted at 500 °C



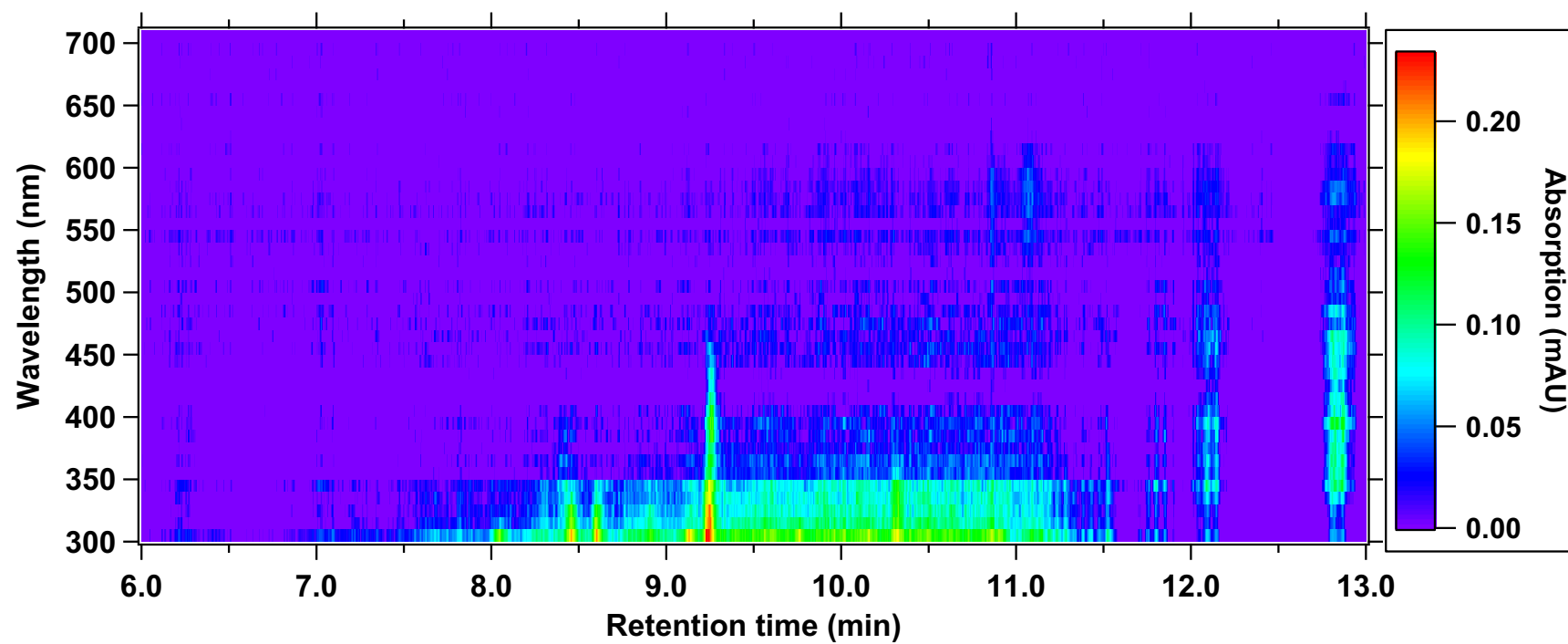
d) Fresh Acacia combusted at 800 °C



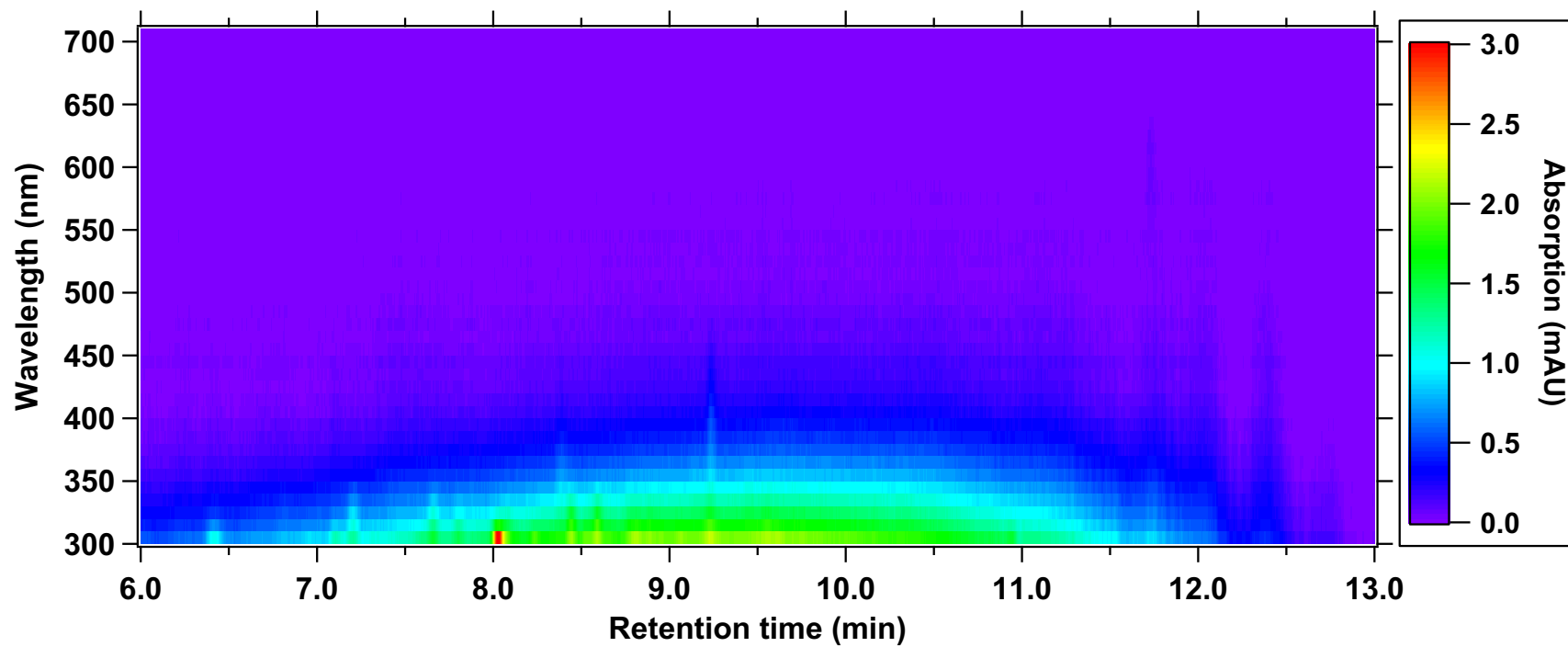
e) Aged Eucalyptus combusted at 500 °C



f) Aged Eucalyptus combusted at 800 °C



g) Aged Acacia combusted at 500 °C



h) Aged Acacia combusted at 800 °C

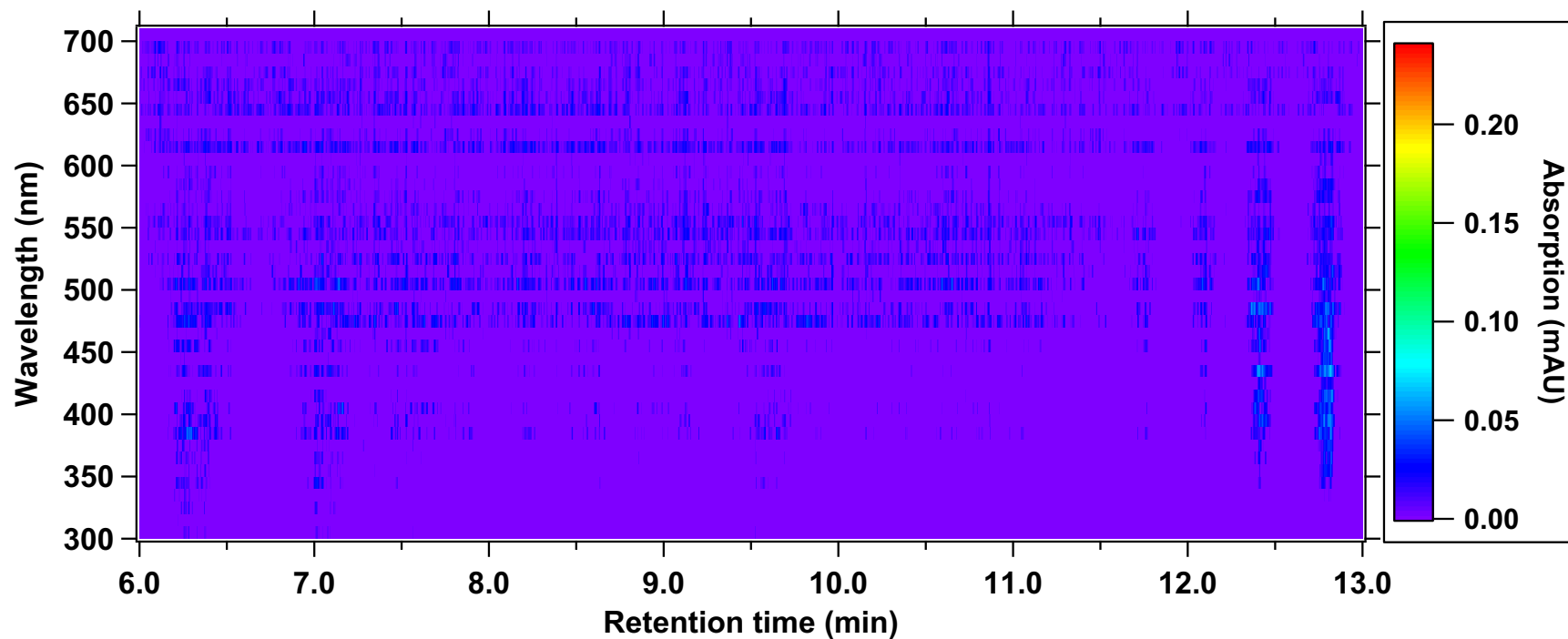


Figure S3. Chromatograms of UV/Visible absorption vs wavelength and retention time for each fuel, age, and burning condition. All spectra have been background subtracted.

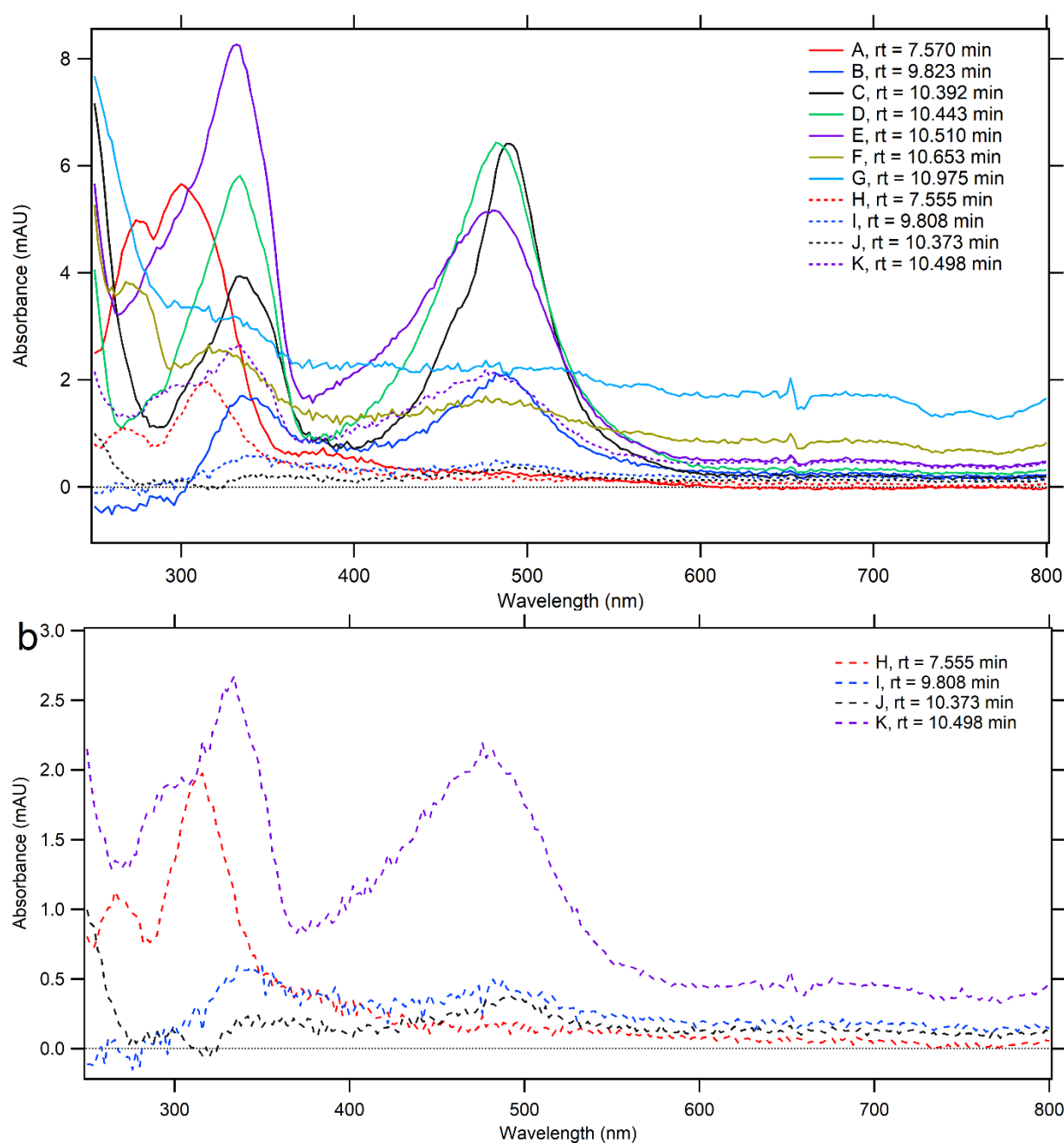


Figure S4. The UV/Visible absorption spectra corresponding to peaks in Figure 6, with those associated with Eucalyptus plotted with solid lines and those associated with Acacia with dashed lines. Peaks were background subtracted against nearby “off-peak” retention times; specifically 7.62 min for peak A, 9.717 min for peak B, 10.312 min for peaks C-G, 7.483 min for peak H, 9.726 min for peak I, and 10.323 min for peaks J and K. As can be seen in Figure 6, a nearby retention time free of absorbers in the 500-510 region was not always readily available, so caution should be used when utilizing these spectra.

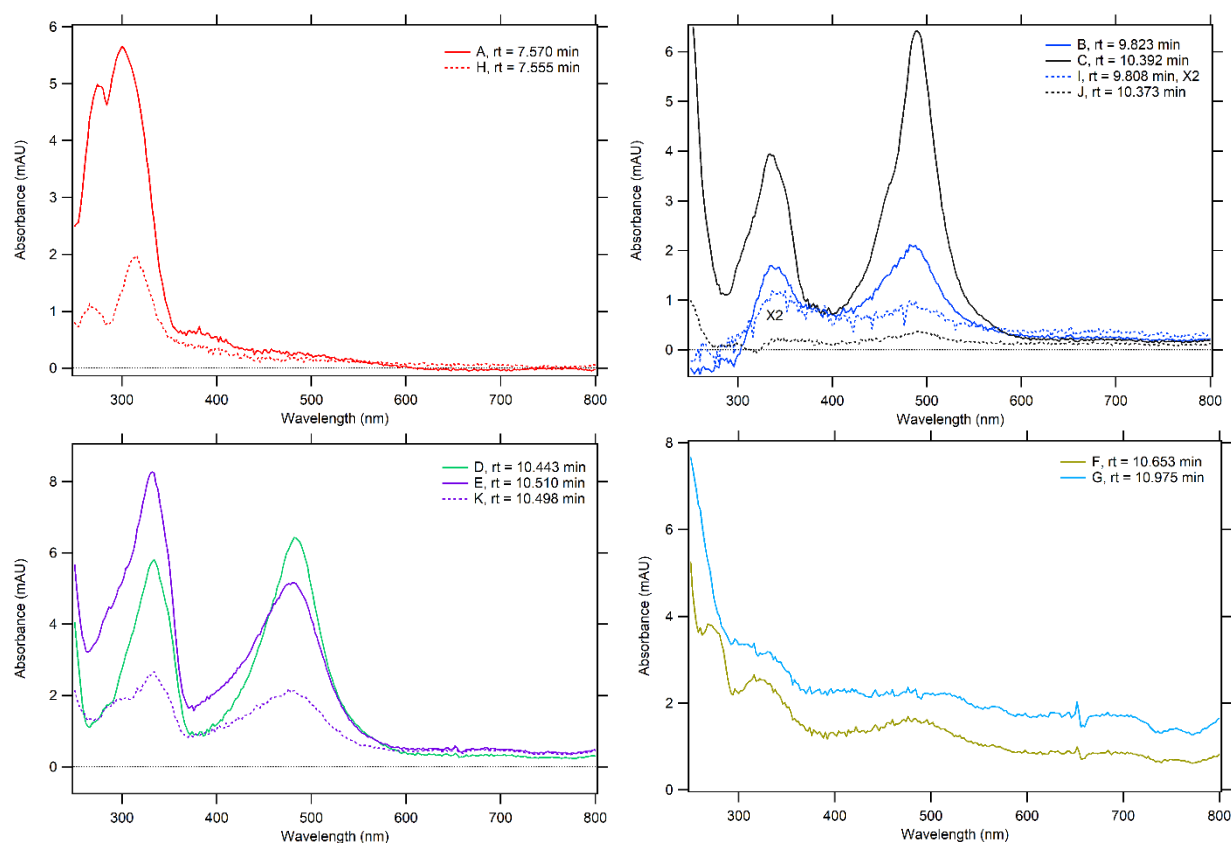


Figure S5. Similar to Figure S4, only comparing chromophores with similar retention times and/or spectral appearance. Letters refer to peaks in Figure 6.

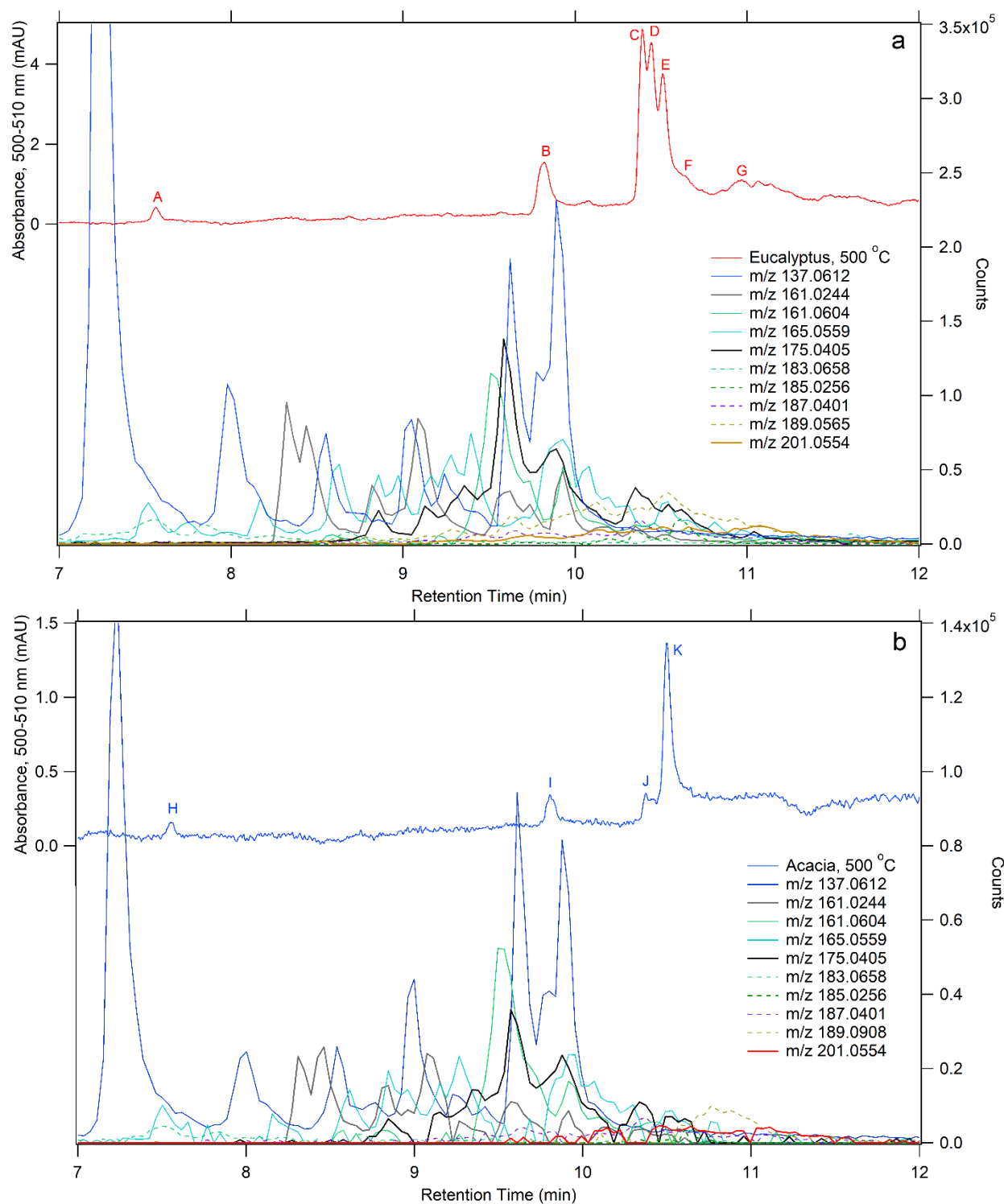


Figure S6. Extracted ion chromatograms for (a) Eucalyptus and (b) Acacia, which have chromatographic features matching the UV/Visible chromatogram for 500-510 nm. Ion chromatograms in bold are likely strong absorbers according to our analysis.