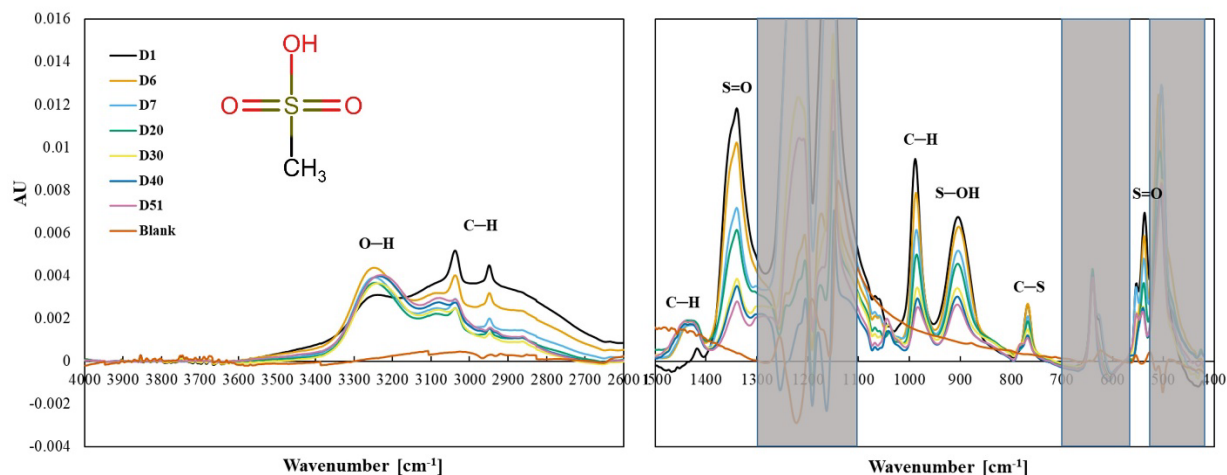
Response to the Reviewers

We thank the reviewers for their comments, and we have addressed them below:

Response to Reviewer #2

- The paper would be improved by the addition of a figure that shows the structures of the materials investigated (and their degradation products) with the acronyms used, rather than just describing the molecules in the text.

Response:

Thank you for this excellent suggestion to improve readability of the paper. We added the molecular structures of the four organic sulfur compounds to the spectra figures. Here is an example of the first figure.

- The details of the infrared measurements must be clarified. Are the filters measured in transmission or by attenuated total internal reflection (ATR) or by some other method?

Response:

Line 231: Add the language "transmission mode" to the below statement.

Transmission mode measurements were made using 512 scans for each filter at 4 cm⁻¹ resolution and ratioed to the most recent (less than 1 h) background spectrum to obtain absorbance spectra using OPUS software (Bruker Optics, Billerica, MA)(Debus et al., 2019).

- Are the spectra presented difference spectra (i.e. [PTFE + sample] - [PTFE])?

Response

To clarify how we manipulated the spectra to remove interferences from PTFE, he following paragraph was modified (bold text) to explain the spectra manipulations that were performed.

To better visualize functional groups in the organosulfur compounds **and minimize the impact of the PTFE scattering and absorption on the spectra, several steps were taken**. Spectra were baseline corrected from 1500 cm^{-1} to 500 cm^{-1}, using blank correction and smoothing spline fitting (Kuzmiakova et al., 2016)   The spectral region from 4000 cm^{-1} to 1500 cm^{-1} were baselined using an automated version of the Kuzmiakova et al., 2016 smoothing spline process in AirSpec (Reggente et al., 2019). Regions with large PTFE absorption (1300-1100 cm^{-1}, 700-600 cm^{-1} and 500-420 cm^{-1}) were grayed out in spectra plots and are not considered for peak identification.