

Review of Coupling a gas chromatograph simultaneously to a flame ionization detector and chemical ionization mass spectrometer for isomer-resolved measurements of particle-phase organic compounds

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Comments:

This is a second review of the revised manuscript. The authors have addressed most of my main concerns from the previous version.

My remaining concerns are as follows:

- 1) The use of the FID measurement to calibrate the instrument should be shown, at least as proof-of-concept. It does not need to be explored fully, but a figure or calculation for at least one peak needs to be included. You have almost done this in lines 230-233; can you simply add some quantitative information for Analyte 1 and Analyte 2?
- 2) The multi-reagent-ion chemistry is an important part of this manuscript. Can you add a mass defect plot(s), such as Figure R2, comparing the ions detected with I⁻ to ions detected with the mixed reagent ion chemistry? This could be added to the supplement. It would be helpful to show the abundance of non-adduct ions using the standard iodide ionization scheme, and their enhancement with the mixed ion mode. I think this would also help to address some of the questions from the other reviewer.
- 3) It is not entirely clear which figures were replaced or changed in the revised manuscript. For example, will Figure R1 replace the Figure 2 shown in the corrected manuscript? Will Figure R3 be included somewhere in the main text or in the supplement? Please indicate.