

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
AMT, 2020-264
Bi et al.

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.