Technical comments on: acp-2014-294, Aqueous phase oligomerization of methyl vinyl ketone through photooxidation. Part 1: aging processes of oligomers, P. Renard, F. Siekmann, G. Salque, A. Smaani, C. Demelas, B. Coulomb, L. Vassalo, S. Ravier, B. Temime-Roussel, D. Voisin, and A. Monod

Dear authors. Thank you for revising the paper in response to the ACPD discussion. There are some technical issues remaining before formatting the paper for ACP.

General comment: please try to minimize the use of parentheses in the text. It is currently a bit excessive. For example on P1, L15 you can safely remove parentheses around the "in a companion paper". There are many other examples in the text when sentences can be revised to avoid using parentheses.

P2, L5: rephrase to avoid using the awkward adjective "secondarily"

P3, L5: 2-methylglyceric acid is commonly abbreviated as "2-MGA"

P3, L16: replace "increase (up to m/z 1200)" with "up to 1200 Da"

P4, L12: remove "used"

P3, L18: remove unnecessary comma after "al."

P4, L12: remove unnecessary comma after "al."

P4, L25-27: I recommend adding a brief discussion of the concentration of molecular oxygen in the solution. Since the reactor was closed most of the time, oxygen could have been depleted from solution by photolysis.

P4, L31: it is not clear why organic aerosol is italic, why there is LV-OOA next to it, and what is meant by SI2.

P5, L4-8: fix the order in the list (currently skips ii)

P5, L7: I always though that UPLC and UHPLC mean the same thing. Is there a need for using both abbreviations?

P5, L14-15: I am guessing you wanted to say that the resolving power of the mass spectrometer was 18,000. Right now it sounds like your peak is 18,000 of arbitrary units wide.

P5, L20: do you mean the first two most abundant isotopes?

P5, L22: remove unnecessary comma after "al."

P6, L27: "mode, with nitrogen gas (gas flow…)…" -> "mode, using nitrogen gas flow of …"

P6, L28: "Capillary" -> "capillary" and "Sample" -> "sample"

P8, L8-9: "V-mode (up to 2000 at m/z 200)" -> "V-mode with the resolving power of 2000 at m/z 200"

P8, L17-21: These lines repeat the information already stated above; would delete them.

P9, L8: insert "tentative" before "molecular structure"?

P9, L13: "certainly" -> "possibly"

P9, L17: "in a previous study" -> "as done in a previous study"

P9, L23: the term "three-step kinetic behavior" is mentioned here for the first time, so referring to section 3.1.1 does not help. The distinction into three kinetic regimes is not very obvious in Figure 2; I would using this term altogether.

P10, L24-25: I would remove these two lines.

P11: L20: same comment about the term "three-step kinetic behavior" – I would avoid it.

P12, L24-25: remove these two lines because they do not contribute much to the discussion.

P13, L7: "affected to our" -> "of our"

P13, L30: what does "1" refer to?

P15, L14: remove unnecessary comma after "al."

P15, L28: remove unnecessary comma after "al."

P16, L1: "Lee et al., 2011b" -> "Lee et al. (2011b)"

P16, L18: both instances of "respectively" can be removed without change in meaning

P16, L20: "which slope" -> "which has a slope"

P16, L28: "added to the fact" -> "in combination with the fact"

P17, L22: remove unnecessary comma after "al."

Table 1: in my opinion, the last two columns are unnecessary. This sort of information can be conveyed in the text or in the caption. Table 1 caption: " Samples" -> "samples".

Comment on figures: my most significant comments to you are regarding figures. I think they can be significantly improved before the final publication. The higher quality figures you currently have are Figure 4 and Figure 9, both of which are cleanly labeled and have good proportions of axis and tick labels to the size of the figure. The remaining figures have labels that will be too small in the final reproduction. They also have different label styles in different figures and even in different panels of the same figure. Fixing all of this will make the figures look quite a bit better. Specific comments for several figures are provided at the end.

Figure 1: This figure has very limited information content but it will occupy the full page width in the paper because of the way it is formatted. I would recommend removing to cut down on the number of figures or, at the very least, redrawing it so that it is only one-column wide.

Figure 2: Remove subscript "0" from the Y-axis label in panel a. Increase the size of the labels such as panel labels, which are way too small. Use the same font size for tick labels in all the panels. Make the size of panel b the same as those of panels c and d. It is up to you but I think this figure would look batter is panel a is also the same size as the res to the panels and stacked on top of the remaining panels so that the figure can fit into a one-column format.

Figure 3: Similar comments as for Figure 2 – consider stacking all panels vertically. The panel labels are too small and also misplaced. Different font sizes are used for the same objects in different panels.

Figure 5: please check that the normalization is indeed per dlnD not per dlogD. The latter is more common.

Figure 7: "-3" should be a superscript in the Y-axis label. I would extend the range of the X-axis ri 160 min because the point at 150 min is hard to notice on the axis frame. Text size in all labels could be bigger. In the figure caption "represent the sum" is misleading because the errors bars are not additive. You mean to say that the uncertainties were propagated to include errors from different sources?

Figure 8: the "dotted grey triangle" is not visible in this figure. It is not clear what letters "Y" next to "Lee" and next to "Ng" are meant to indicate. Tick labels are disproportionately small relative to the rest of the labels and the frame size.

Figure 10: "-1" should be a superscript in the Y-axis label. Also the axial label should say "concentration" or something like this. Text size in all labels could be bigger.