Hi Martin,

Thanks for the all the editorial work and kind comments about the manuscript. Apologies for the mistakes you picked up (commentary below, in red). Changes made.

Cheers and Thanks

Authors

**Associate Editor Decision: Publish subject to technical corrections** (20 Dec 2018) by Martin Steinbacher
Comments to the Author:
Dear Dan,

I carefully went through your replies and the resubmitted manuscript. To my mind, you thoroughly addressed the reviewers’ concerns. I appreciate that you tried to reduce the length of the manuscript even if it was shortened by only a fraction of the 50% reduction suggested by reviewer 2. I agree with you that AMT is the right platform for this type of rather detailed technical description (which was kind of criticized by reviewer #1). Your contribution is providing very valuable information and can be considered to be a key reference for future users of similar FTIR systems.

I just stumbled upon a few more minor issues and technical corrections which I suggest to be made prior to publication:

Authors reply in red:

I am wondering why you abbreviate “quality assurance and quality control” as “QC/QA” and not as “QA/QC”; QA/QC is the more common term and also corresponds to the spelled-out order.

Thanks for pointing this out, a mistake. All references should be “QA/QC” and have been changed.

Figure 3 is labelled with a topleft (a). Remove the label.

Label removed. New Figure 3.

Page 12 still contains a crossed-out sentence &Page 25 still contains a crossed-out sentence.

Oops, thanks for pointing these out. Removed.

Figure 12: y-axis range, panel c: start at 290 or 300 ppb? Y-axis range, panel a: start at 1600 ppb, move legend to panel b (if there is no space for the legend in panel a anymore)

Panel A range: 1600 to 2600 ppb. Legend moved to panel B. Panel C range: 290 to 400 ppb. New Figure 12 (also included FTIR event in legend).

Re the grey vertical dashed lines illustrating the instrument events which are only explicitly mentioned in the caption of Figure 3: I wouldn’t add the same statement in all other captions of the figures containing these lines but you may find some space for the legend “FTIR instrument events ---“ in one of the panels of each subsequent figure.

FTIR instrument events legend added to the appropriate figures.

Especially Fig. 16 (but also several others figures showing some boxplot; Figs. 3, 4, 11, 14): I couldn’t find any explanation what the boxes, whiskers and ticks represent.

Sorry, an oversight. Explanation of the Box whisker plots is now explicitly given in figure 3 legend (like the FTIR instrument events legend). Hope this is ok, saves repetition in Figure legends 4, 11, 13, 14 & 16.

Figure 3 legend now reads (new text in bold):

“Figure 3. Cell temperature measurements. From January 2007 to September 2010 cell temperature measurements were made with an LM335 integrated circuit sensor attached to the outside of the cell. The invitro PT100 temperature measurements started in September 2010 and then replaced with a Type-J thermocouple in April 2013 (measurements outside the range 31-35 °C were filtered out). Box plots provide a statistical summary prior and post LM335 temperature sensor change. The box spans the interquartile range. The median is marked by a horizontal line inside the box. The whiskers are the two horizontal lines joined to the outside of the box and represent 1.5 times the interquartile range added to (subtracted from) the median. The unconnected horizontal line above (below) the whisker is the maximum (minimum) observation. Vertical grey dashed lines indicate an event in which changes to FTIR hardware, operating conditions or analysis were made (FTIR instrument events explained in Sect. 5.10).”

Kind regards,

Martin Steinbacher