

Review of Jiyan Wu et al.

Jiyan Wu et al. present an improvement of the MARGA (Monitor for AeRosols and Gases in ambient Air) instrument by adding a DTT module thus allowing for a simultaneous measurement of some chemical species present in ambient PM as well as gaseous pollutants. They have provided some interesting results on the effect of light and oxygen environments on DTT activity in online DTT instruments. They have also shown some important data regarding the influence (or lack of) of inorganic ions on DTT activity. I believe this manuscript has some good and important results and also provides an inspiration for future modification of traditional aerosol chemical speciation instruments to add a ROS measuring module which might help in a large-scale comparisons of ROS activity of PM and correlation with their chemical composition. I recommend that this paper be accepted for publication in the journal after incorporating some minor comments.

Following are the minor comments that need to be addressed before publication:

1. Section 2.1 – Please add references for MARGA instrument. Also, a brief description of past studies involving the instrument and what exactly inspired the authors to use MARGA for this study could be added to help the reader better understand the context of the paper.
2. Section 2.2.1 – It would be a good idea to add a flow chart showing the step-by-step operation of the instrument. Would be helpful for the reader to understand the instrument setup and operation
3. Section 2.2.3 – Is the instrument maintenance being done manually? Or is it automated? If it is automated would be better to add the steps in the flow chart as suggested in Point 2
4. Section 3.1.1 – The authors show an improvement of the instrument over other online instruments by comparing how the slope is lower than that of Puthussery et al. and Fang et al. However, it would have been better if the authors could show their own data about experiments conducted side by side (with and without photooxidation). I suggest authors to add this data to further strengthen their point.
5. Section 3.1.2 – Similarly for this section too, the authors can show their own data to show the effects of photooxidation
6. The results from Point 4 and 5 suggested here should be included in the abstract