Comment on acp-2021-379
Nga Lee Ng (Editor)

Editor comment on "Particle-phase processing of α-pinene NO$_3$ secondary organic aerosol in the dark" by David M. Bell et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-379-EC1, 2021

I have a few quick comments for the authors to consider:

- It appears that Experiments #1 and #3 were conducted under conditions that were almost identical (Table 1), why is the maximum SOA different by a factor of ~3? Same question applies to the data shown in the figures, how shall the results from Experiments #1 and #3 be explained and interpreted? Shall one expect the results to be comparable or different?

- Line 42-45: For the sentence “When experiments were conducted in the dark....”, it might be better to separate this sentence into two to avoid confusion, as Takeuchi and Ng did not use the changes in elemental ratios (N:C and O:C) to evaluate organic nitrate hydrolysis (NO$_3$,org/Org is used as a proxy to infer hydrolysis in Takeuchi and Ng).

- Line 208-211: As the experimental conditions in the study by Takeuchi and Ng and the study by Claflin and Ziemann are different (e.g., RO$_2$+NO$_3$ dominant, low OA loading at ~60 ug/m$^3$ and RO$_2$+RO$_2$ dominant, high OA loading on the order of hundreds of ug/m$^3$, respectively), it is hard to directly use these studies to note that similar differences were observed between ESI and FIGAERO-CIMS in this work.

- Line 352-353: As seed aerosols are not used in this work, perhaps the relative small amount of particle water could be the reason for negligible hydrolysis observed for dimer dinitrates? Also, it would be useful to note in Section 2.1 that seed aerosols are not used.