Comments on "Technical Note: Influence of surface roughness and local turbulence on coated-wall flow tube experiments for gas uptake and kinetic studies"

There has been a debate on whether the coating surface roughness could disturb the fully developed laminar flow in flow tube kinetic experiments and its effects were usually not well-quantified. This article give a new criterion to eliminate the potential effects of coating surface roughness on laminar flow in coated-wall flow tube experiments. They employ a critical height to provide an easy way of compromising different flow tube experimental parameters. The article also summarized previous flow tube investigations employing various coating materials and thicknesses and further evaluated by the proposed criterion of δ_c, as an illustration of how this criterion can be applied. The article indicated that increasing δ_c by adjusting flow tube geometric parameters or V_{avg} can reduce the effects of coating surface roughness on laminar flow in coated-wall flow tube experiments. The article is of interesting to readers, and is suitable for publication in this Journal. I recommended it to be accepted after minor revision.

Comments:

The most important of this article is to let the researchers to calculated more accuracy uptake coefficients by flow tube experiments. However, I feel that the discussion of Part 3.2 is not very enough. Please give more example on how to use the author's method to get the estimation of the potential error of the measured γ_{eff} when $\gamma_{eff} > 10^{-3}$