## **Author's response to Editor's comments**

Thank you for your revision. Can you consider that my previous comments and your replay on the multi-phase chemical reaction are addressed somewhere in your manuscript?

We apologize for not having directly responded to your comment in our paper in the first place. The requested information is now contained under Section 2.4.1 in the brief introduction of the CAIRDIO model. We hope to have responded satisfactorily to your request about multi-phase chemistry in the simulations.