Cover Letter

Dear Editor,

We are pleased to submit our manuscript entitled “Droplet Evaporation on Hot Micro-structured Superhydrophobic Surfaces: Analysis of Evaporation from Droplet Cap and Base Surfaces” to *International Journal of Heat and Mass Transfer* for consideration as an original research article. In this study, sessile droplet evaporation on hot micro-structured superhydrophobic surfaces is experimentally and theoretically investigated and, for the first time, two components of heat and mass transfer, *i.e.*, one from the droplet cap surface and the other from the droplet base surface, during droplet evaporation are distinguished and systematically studied. We believe that this manuscript is appropriate for publication in *International Journal of Heat and Mass Transfer*. The traits of this work are:

* we conducted a comprehensive thermal resistance analysis for the sessile droplet evaporation on hot micro-structured superhydrophobic substrates to analyze evaporation from both the droplet cap and the droplet base. It is found that droplet cap surface temperature shows distinct trends in different evaporation modes, *i.e.*, droplet cap surface temperature increases in the constant contact radius (CCR) mode while keeps essentially constant in the constant contact angle (CCA) mode.
* Evaporation rates from both the droplet cap and the droplet base are calculated in various conditions. During the CCR mode of droplet evaporation, the decrease of evaporation rate from the droplet base contributes most to the continuously decreasing total evaporation rate, whereas the decrease of evaporation rate from the droplet cap surface is dominant in the CCA mode
* The ratio of droplet base evaporation rate and total evaporation rate 𝜑 decreases in the CCR mode and increases approaching the end of CCA mode. For droplets with large volume, 𝜑 increases with the rise of the substrate temperature and for small volume, 𝜑 decreases with the rise of the substrate temperature.
* Temperature differences between the droplet base and the substrate surface are estimated to be ~ 2 °C, 5 °C, 8 °C, 12.5 °C and 18 °C for droplet evaporation on substrates heated at 40 °C, 60 °C, 80 °C, 100 °C, and 120 °C, respectively, which can elucidate the delayed or depressed boiling of water droplets on a heated rough surface.

All authors listed in the paper have contributed to this work. To the best of our knowledge, no conflicts of interest, financial or others exist. We have included acknowledgements and financial information in the manuscript. PDF of manuscript is in correct order upon submission.

This manuscript has not been previously published and is not under consideration in the same or substantially similar form in any other peer review media. All data needed to evaluate the conclusions in the paper are present in the paper and the Supplementary Materials. The prepared manuscript is in compliance with the Ethics in publishing as described in Author Guidelines.

In addition, we suggest the following five reviewers for our submission:

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