

The physics of boiling at the microscale

It has been shown recently that the temperature of the onset of boiling can be significantly reduced by changing the wettability of the heated solid surface in contact with the liquid. The microscopic details controlling this effect are still under debate in the literature. The research which has been developed here deals with the design of a new setup and new surface treatments to study the effect of the wettability on the appearance of the first vapour bubble. The results clearly reveal the importance of the preparation of the solid surface to produce repeatable experiments.