

Water condensation study on patterned surfaces

It has been shown over the last decade that wettability plays a key role in condensation. It is now well recognized that dropwise condensation on hydrophobic surfaces is better than filmwise condensation on hydrophilic surfaces. Biomimicry nevertheless indicates that surfaces with gradients of wettability or patches are even better. The purpose of this research is to explore the interest of hydrophilic patches on top of an hydrophobic surface to enhance condensation. The first step is based on the design of an unique setup allowing to control the multiple parameters appearing in such kind of experience: size of microdroplets, orientation with respect to the solid surface, impact speed, ...