



## **Evaluation of the water contact angle variation upon freezing**

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The wettability of materials, normally described by the contact angle, has a key role in scientific, industrial and everyday life applications. The contact angle of liquid water on a substrate, which is the angle formed by a water droplet on the substrate at the triple interface solid-liquid-gas, is measurable with a goniometer. However, measuring the contact angle of ice for determining the icing properties of materials (very relevant to fields such as aviation, transport or construction) might be challenging, specially when it comes to porous materials. Deriving the icing properties of materials from the measuring of the contact angle of liquid water on them would benefit the practical applications mentioned above. It would also be useful in scientific fields such as the heterogeneous ice nucleation, where the contact angle of ice is an input parameter (classical nucleation theory or adsorption nucleation theory). Experimental evidence suggests that the contact angle of water remains constant during the liquid-solid phase change, but this conservation has never been properly investigated. The present work evaluates the variation of the water contact angle upon freezing for a wide range of wettabilities by using different materials.