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**Water Droplet Spreading On Stochastic Si Nanowires** DAMIANO AULIANO, MANUEL AULIANO, MARIA FERNANDINO, NTNU, PIETRO ASINARI, Polytechnic of Turin, CARLOS DORAO, NTNU — Wicking plays a key role in many industrial and biological applications such as passive capillary-driven cooling technology, oil recovery, inject printing and DNA chips. Nowadays, the attempt to design an appropriate surface to enhance the wicking capabilities is getting always more significant. In fact, the control of the wetting properties has increased enormously over the past few decades. These properties are strongly related to the spreading features of a surface. Due to the advances in nanotechnology, it has been possible to tune the wettability of a surface by modifying its topography. Different works have reported the effect of the height of micro/nano structures on the wicking transport, but they have shown contrasting results. In this work, the effect of the height on Si random nanowires has been investigated. In this regard, different nanowire arrays with different heights were fabricated. Therefore, a method to characterize accurately both the wettability and wicking of super-hydrophilic surfaces has been developed and validated. After a proper characterization of the samples, it has been observed that taller nanowires provide stronger wicking.

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