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Microgrooves improve dew collection PIERRE-BRICE BINTEIN, LIED, UMR 8236 CNRS, Paris, HENRI LHUISSIER, IUSTI, UMR 7343 CNRS, Marseille, LAURENT ROYON, MSC, UMR 7057 CNRS, Paris, CLAIRE MANGENEY, ITODYS, UMR 7086 CNRS, Paris, ANNE MONGRUEL, DANIEL BEYSENS, PMMH, UMR 7636 CNRS, Paris — We present a study about condensation of water drops on inclined surfaces textured with microgrooves and cooled under the dew point temperature. Usual microfabrication techniques are employed to produce substrates (silicium wafer) with grooves of 30-500 micrometers in spacing and 50-150 micrometers in depth. Such patterns induce a faster growth of the drops by coalescence, leading to earlier drainage and collection of water at the bottom of the plate. An additional grafting of hydrophilic polymer (Poegma) can even increase the efficiency of such condensation devices.

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