

Supplementary Materials for

**Water penetration dynamics through Janus
mesh during drop impact**

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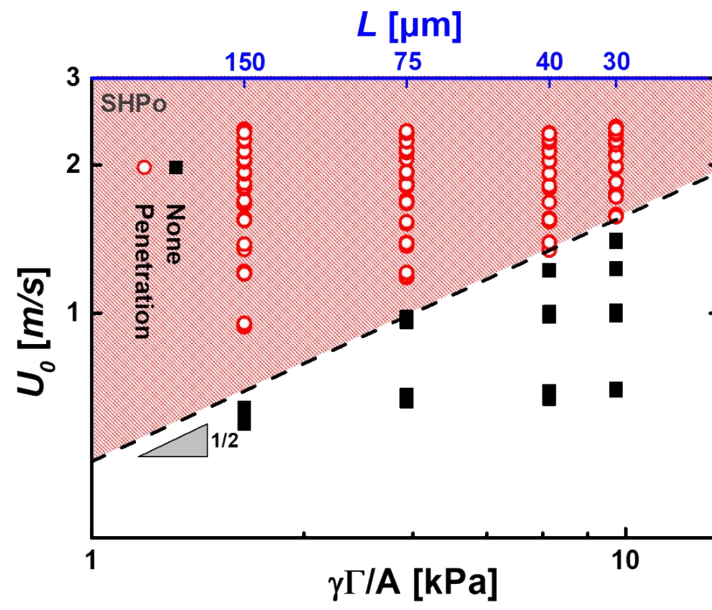


Fig. S1 'Impact Penetration' diagram on SHPo mesh.

Penetrated volume analysis by MATLAB

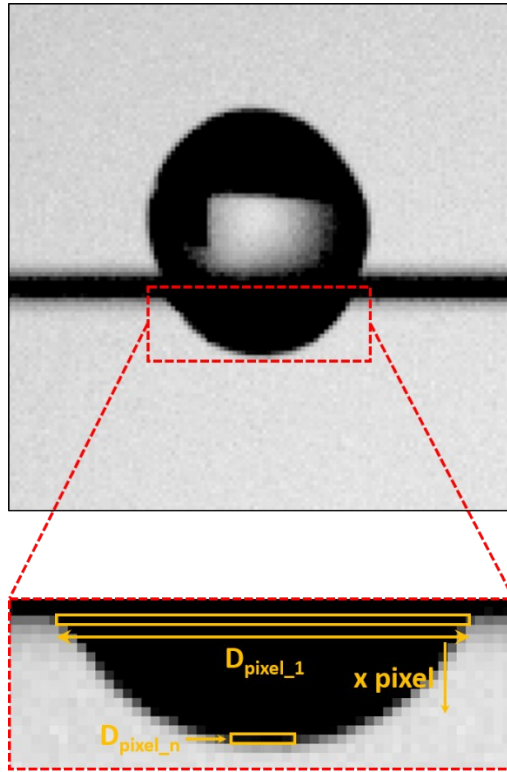


Fig. S2 A representative snapshot image of the penetrated water during capillary pressure-driven water transport for ‘SHPo to SHPi’ impact on #400 mesh.

Fig. S2 is a snapshot image during the imbibition during ‘SHPo to SHPi’ impact. By assuming an axial symmetry of the penetrated volume, one can calculate the penetrated volume from the diameter at x pixel, D_{pixel_x} . The overall penetrated volume at time t can be determined by the integration of the volume at each pixel such as $\Omega(t) = c \times \sum_{x=1}^n (\pi D_{pixel_x}^2 / 4)$. Here, n is a pixel number at the nadir of the penetrated shape, and c is a unit conversion constant (from pixel to meter).