# Viscous fingering in volatile fluid towards spontaneous evolution of well-ordered 3D patterns

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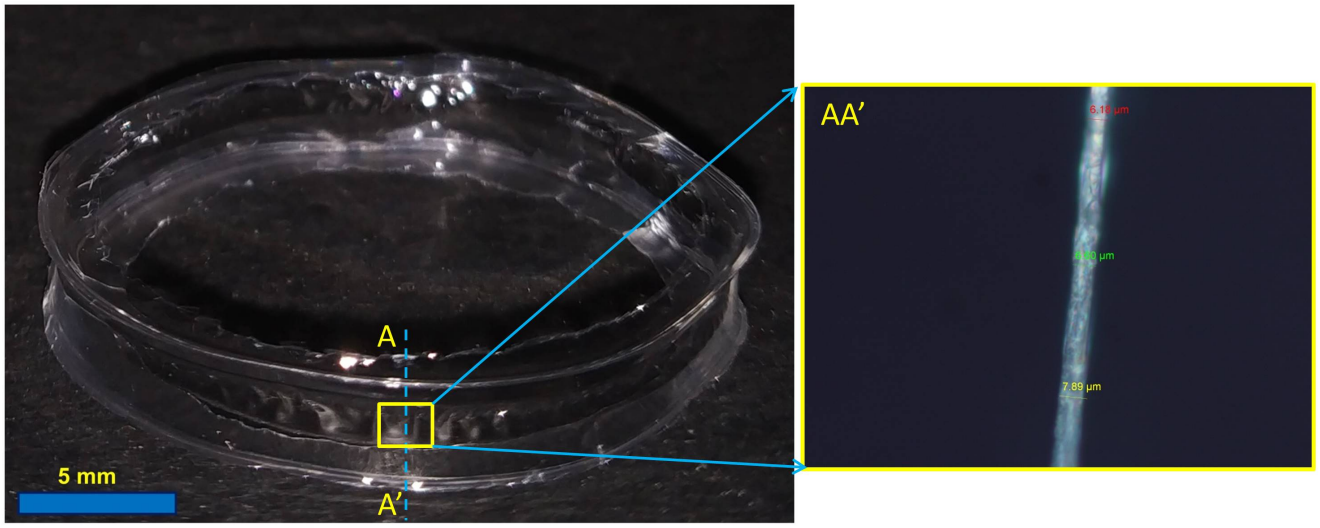
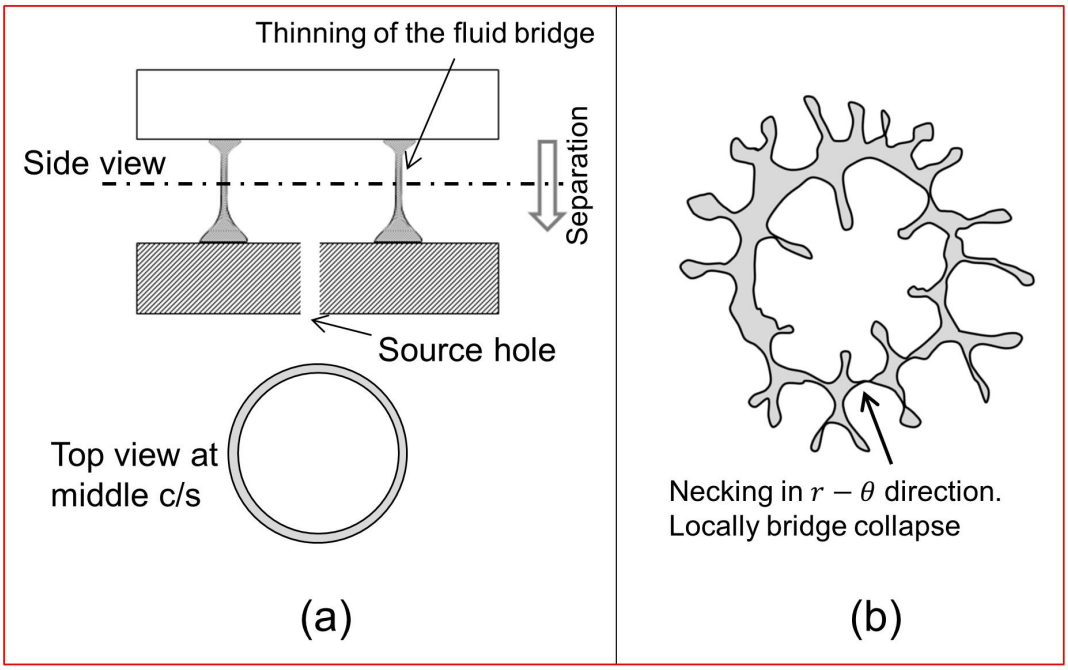
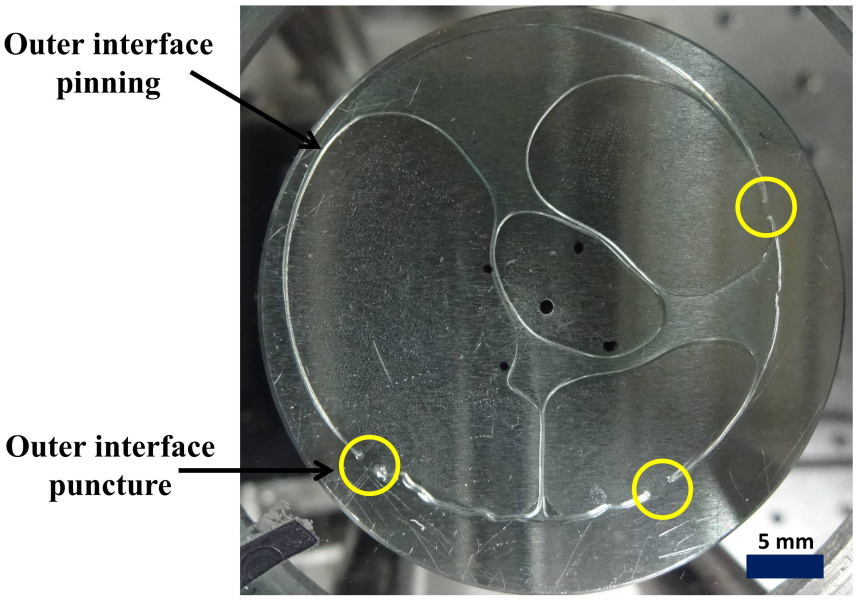
**Supplementary Movie. 1.** Experiment shown in Figure 5.$O_1$ :The supplementary movie shows stable evolution followed by fluid ring retraction hence structure is not retained(No retention).
**Supplementary Movie. 2.**Experiment shown in Figure 6.$B_{1'}$:The supplementary movie shows a sudden bridge breaking.
**Supplementary Movie. 3.** Experiment shown in Figure 6.$B_{2'}$ :The supplementary movie shows localized bridge breaking during the unstable evolution stage.



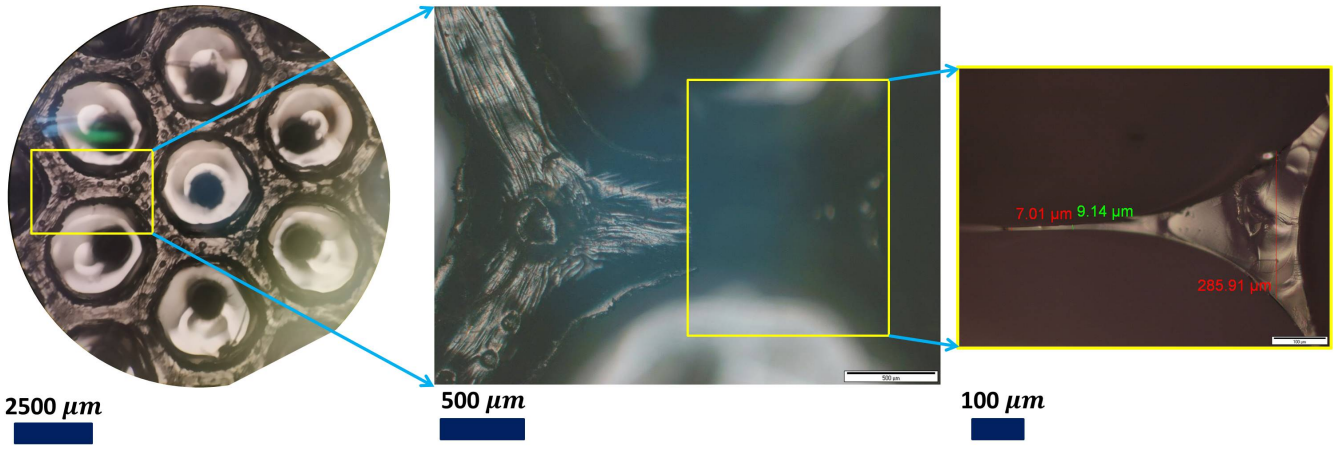

**Supplementary Fig. 1.** Wall thickness at the mid-plane of the hollow cylindrical well fabricated on ULHSC. Left side image showing microscopic view of the cross-section(AA') of the wall at the mid-plane(highlighted section)



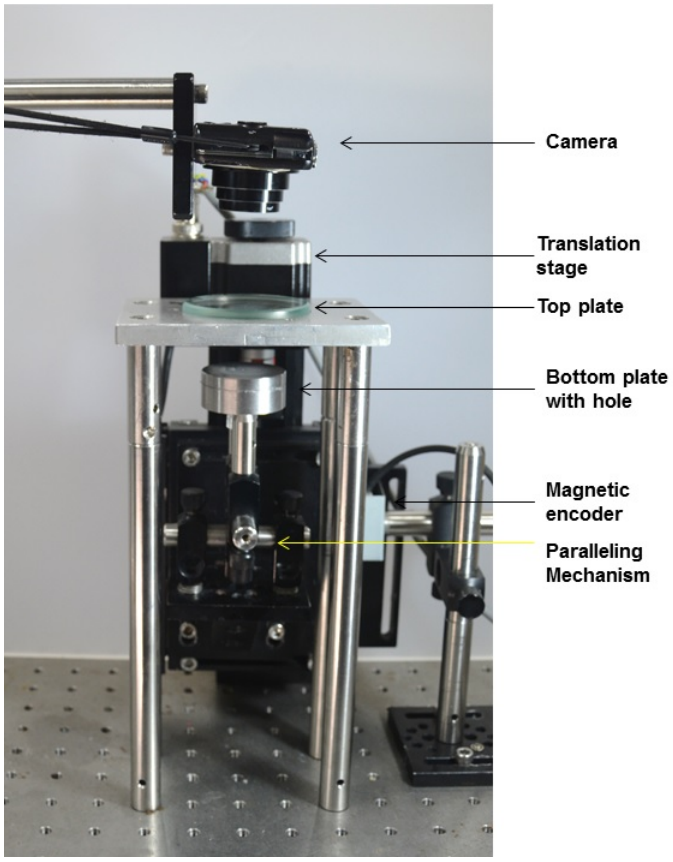

**Supplementary Fig. 2.** Bridge breaking schematic a) Thining of the fluid bridge during plate separation b) Necking in azumuthal direction during viscous fingering



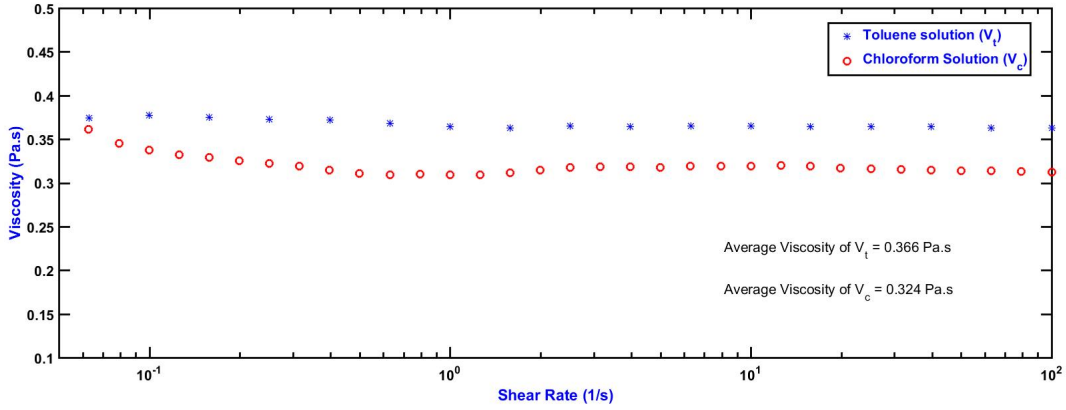

**Supplementary Fig. 3.** Pinning and Puncture of the outer interface




**Supplementary Fig. 4.** Wall thickness of the mid-plane of the HAR hexagonal mesh fabricated on MLHSC. In left side image focus is on top plane and in right side image focus is on mid-plane of highlighted section.




**Supplementary Fig. 5.** Setup

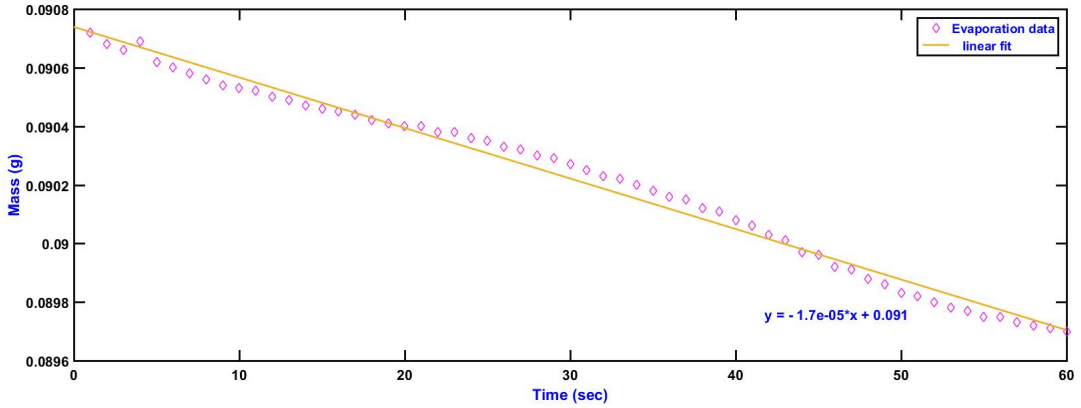



**Supplementary Fig. 6.** Viscosity of the chloroform solution($V_c$) and toluene solution($V_t$) .

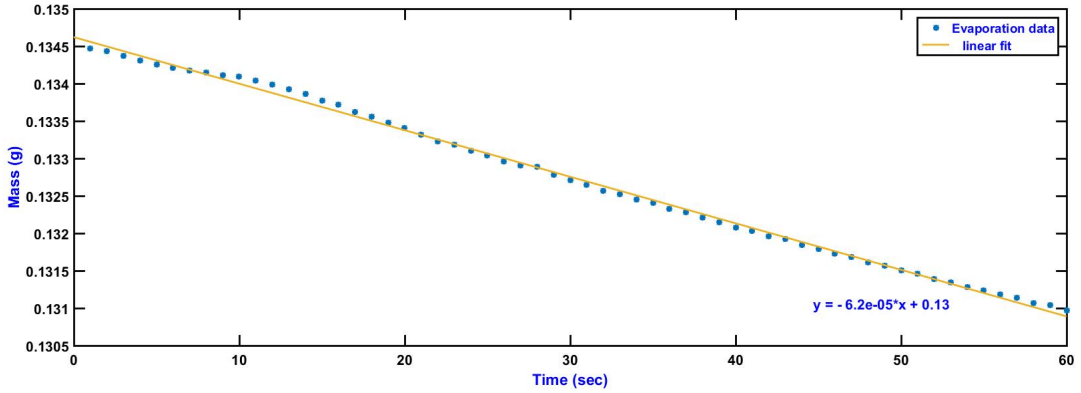
**Evaporation rate calculation**

Mass flux in $Kg/m^2s$ = Evaporation rate in $Kg/s$ ÷ exposing area to atmosphere in $m^2$

Evaporation rate in m/s = mass flux in $Kg/m^2s$ ÷ density of the fluid in $Kg/m^3$




**Supplementary Fig. 7.** Evaporation rate(g/sec) of the toluene solution($V_t$).




**Supplementary Fig. 8.** Evaporation rate(g/sec) of the chloroform solution($V_c$).