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Electronic Supplementary Information to: Unravelling Spatially Heterogeneous Dynamics in Colloidal Gels during Syneresis

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1 Syneresis Movies of Colloidal Gels

Movie 1 = " d_2 maps of PS gel during syneresis, $\tau=0.125$ s, colormap inferno. Left end of d_2 maps represents the capillary wall. 2fps"

Movie 2 = " d_2 maps of PBA gel during syneresis, $\tau=0.125$ s, colormap inferno. Left end of d_2 maps represents the capillary wall. 2fps"

2 Noise Artefacts Check at the Gel Edge

Fast macroscopic movement of the syneresing colloidal gels is prone to induce too low intensity in the speckle images at the moving gel edge, resulting in high d_2 noise artefacts. To check for this possible effect, a series of images with $\Delta I = 1, 2, 5$ and 8 added to the speckle images for the PBA gel are shown in Fig. S1. Intensity fluctuations in properly illuminated areas are conserved but the fluctuations in poorly illuminated areas are less overestimated.

With increasing ΔI , the high d_2 stripe, indicating high mobility, at the sample moving edge vanishes and a stripe with low mobility, low d_2 developed indicating that the high d_2 is indeed related to noise artifacts. This may be related to incomplete randomization of photons in this area due to the fast macroscopic movement and the resulting thin edge. Therefore, all calculations and anal-

ysis in this work are carried out on speckle images with $\Delta I = 5$.

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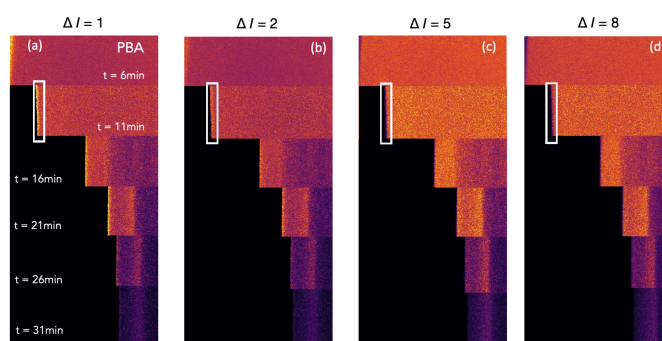


Fig. S1 Time-lapse d_2 maps of PBA gel, $\tau=0.125$ s, calculated from $\Delta I = 1, 2, 5$ and 8 to the speckle images, colormap inferno. Left end of d_2 maps represents the capillary wall. Region of interest with low intensity at the moving edge of the gels is marked with white rectangles for $t = 11$ min.