Electronic Supporting Information

Influence of drying configuration on patterning of ellipsoids - concentric rings and concentric cracks

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1. Morphological patterns dictated by configuration of drying:

The final particulate deposit patterns obtained by drying of dispersion strongly depends on the drying configuration. The top view of the final dried particulate deposits obtained by drying of dispersion containing hematite ellipsoids and poly-styrene spheres in the two different drying configurations, are shown in Fig.S1 (a) and Fig.S2 (a) respectively. Furthermore, the distribution of the particles in the deposits are confirmed by the height profile measurements shown in Fig.S1 (b) and Fig.S2 (b).

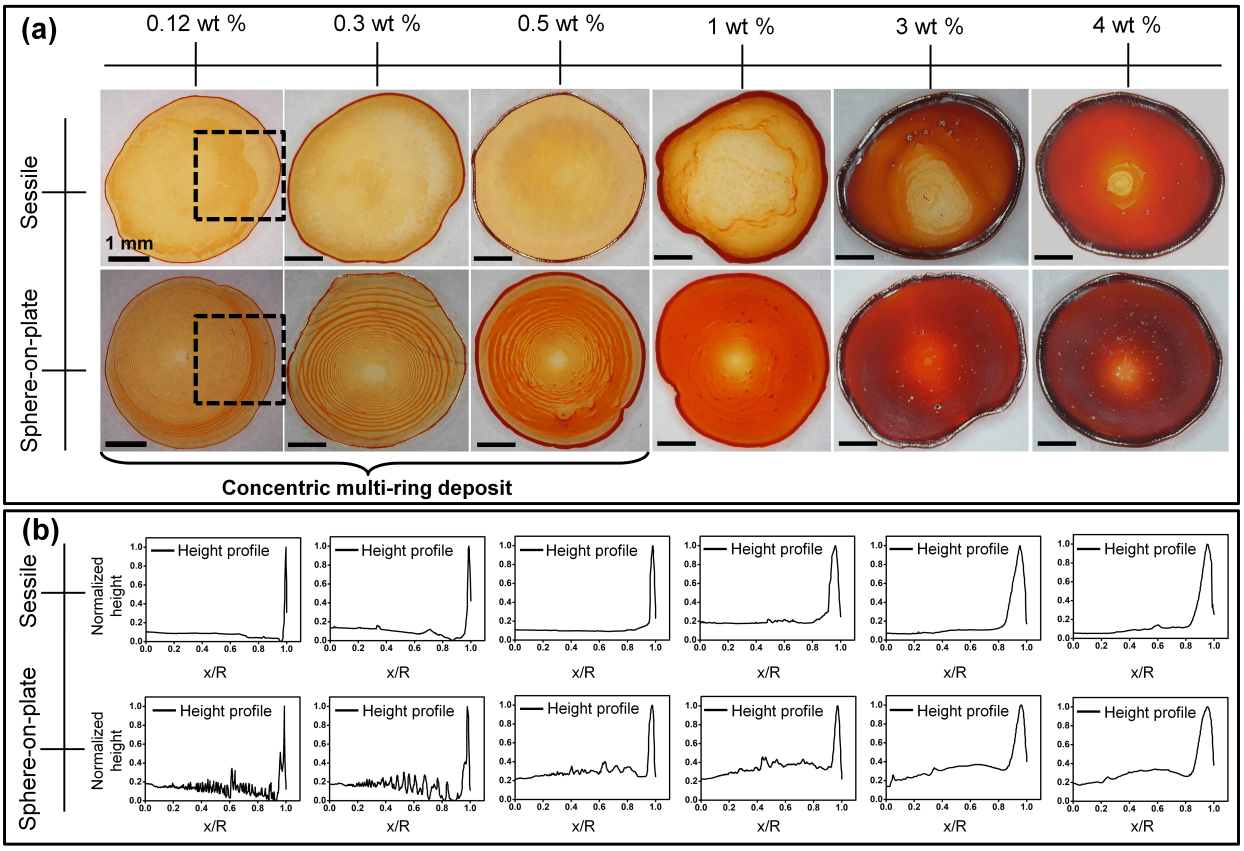

Fig. S1: Evaporation of dispersions containing hematite ellipsoids. **(a)** Top view of the final dried deposit obtained in the sessile (top panel) and sphere-on-plate (bottom panel) configuration **(b)** Corresponding height profiles.

2. Direct visualization of the drying droplet- sessile vs. sphere-on-plate:

The direct visualization of the drying of dispersion reveals that the droplet dried in sessile mode is pinned for a longer time. However, an early de-pinning is observed in the sphere-on-plate configuration as shown in Fig. S3.

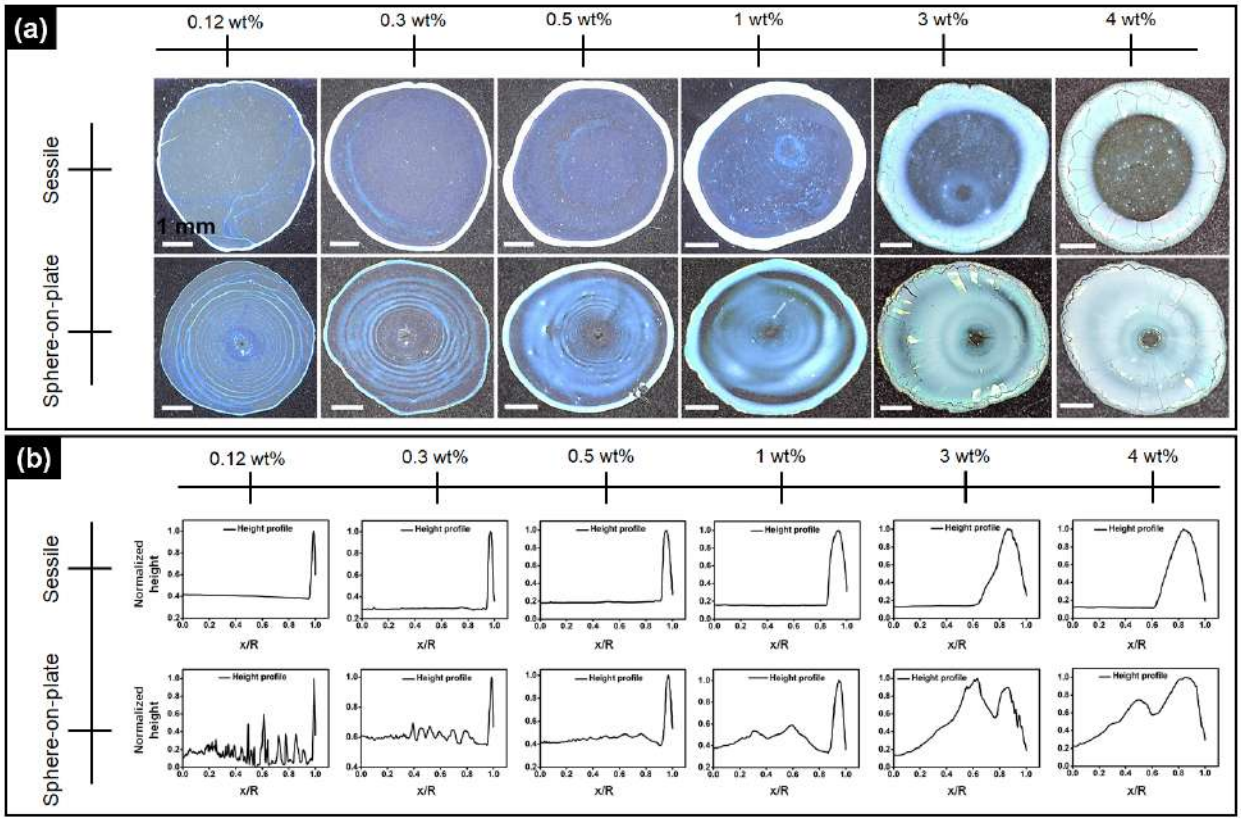

Fig. S2: Evaporation of dispersions containing polystyrene spheres. **(a)** Top view of the final dried deposit obtained in the sessile (top panel) and sphere-on-plate (bottom panel) configuration **(b)** Corresponding height profiles.

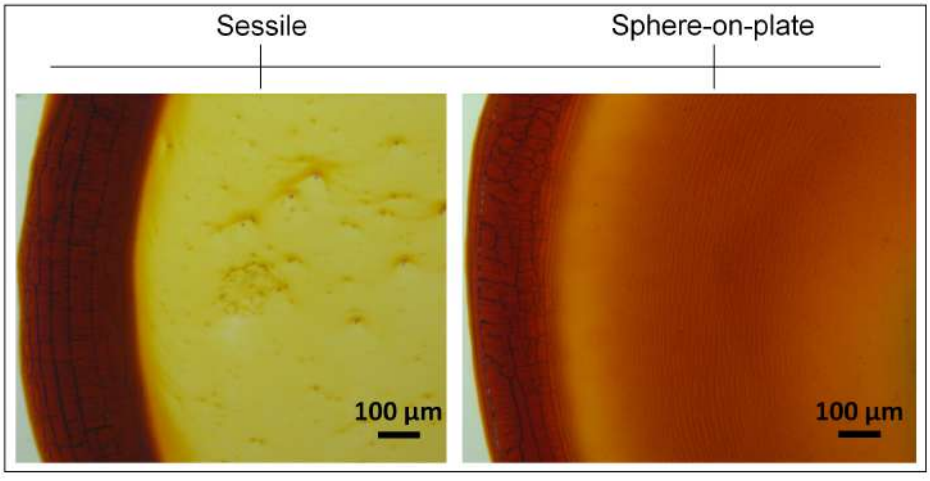

Fig. S3: Optical images of part of the deposit patterns on substrate obtained by drying of a $2\mu l$ drop with particle concentration of $\sim$3 wt% in the two different drying configurations.

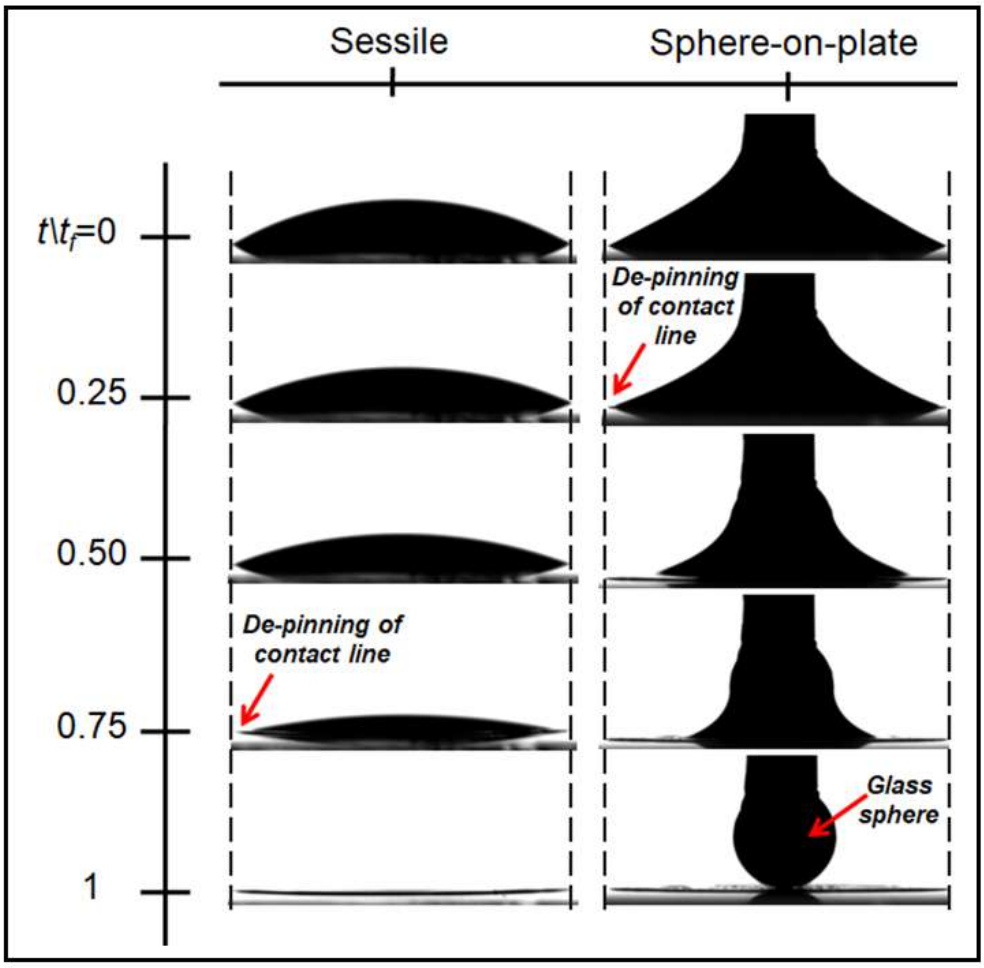

Fig. S4: Dirrect visualization of the evolution of contact diameter of the drying drop in two different drying configurations i.e. sessile and sphere-on-plate.

3. Video of drying drop in sessile (Movie S1) and sphere-on-plate (Movie S2) configuration:

The formation of circular cracks in the particulate film obtained by drying of dispersion containing hematite ellipsoids is recorded using optical microscopy. Movie S1 corresponds to the drying of droplet in the sessile mode and movie S2 corresponds to the drying of droplet in the sphere-on-plate configuration. The concentration of particles in the dispersions used is maintained same ($\phi \sim 3wt\%$). The cracks obtained in the particulate film obtained in sessile mode drying is limited only to the annular ring region, whereas, long-ranged circular cracks

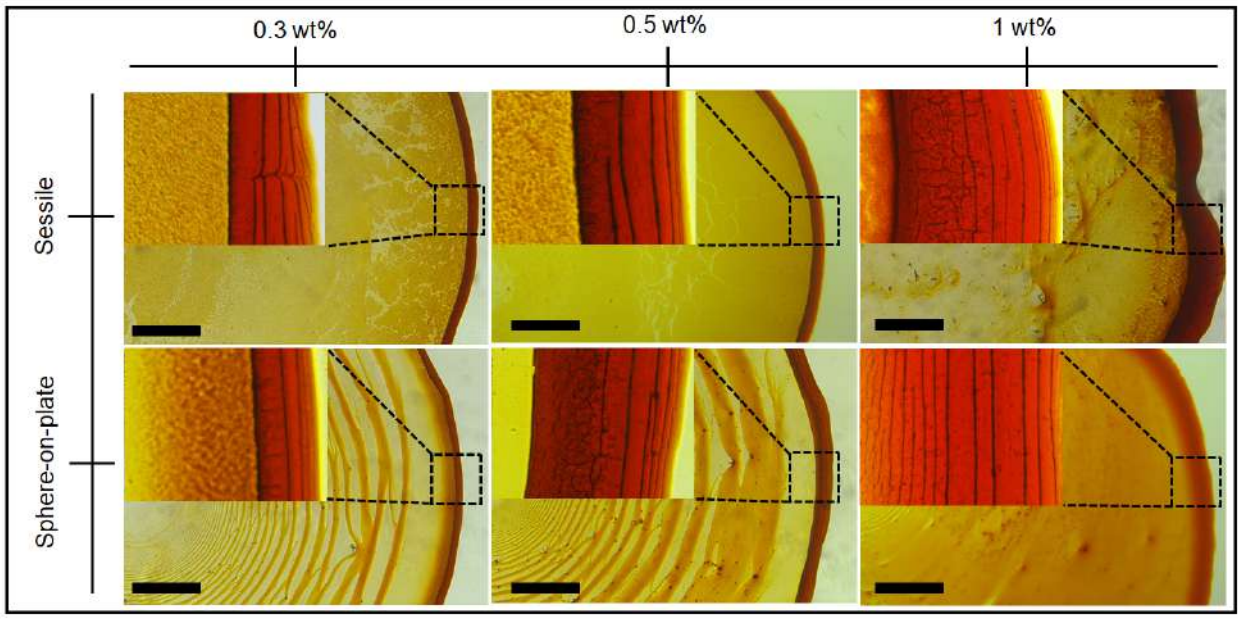

Fig. S5: The optical microscopy images of part of the dried particulate film obtained upon drying of dispersion containing ellipsoids with particle concentration $\phi \sim 0.3 - 1wt\%$. The cracks are limited to the particulate deposit at the primary contact line in both the drying configuration.The inner rings in the deposits formed in the sphere-on-plate drying mode did not exhibit any cracks

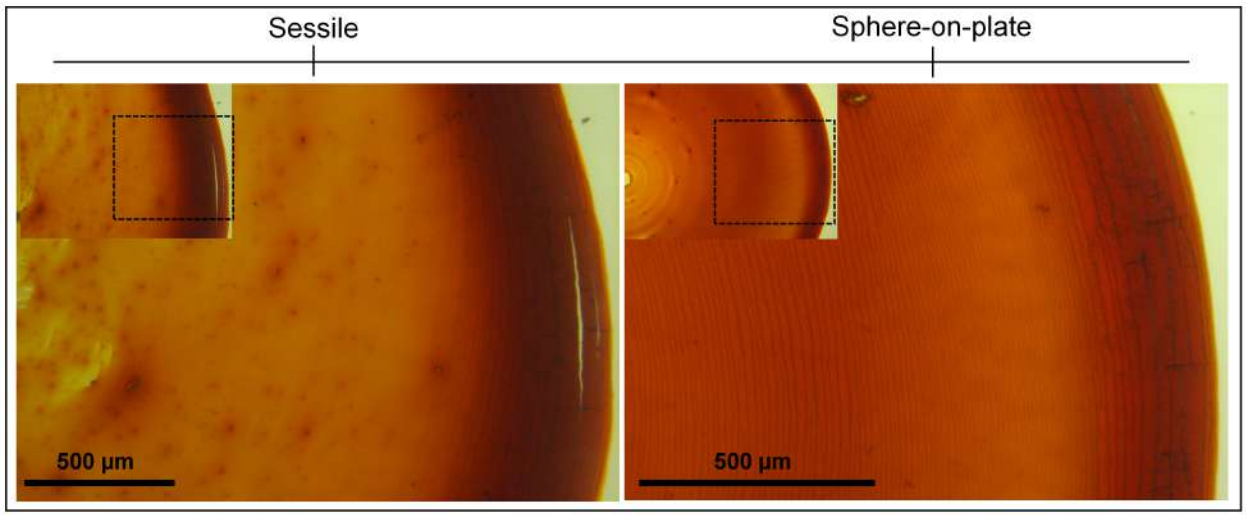

Fig. S6: The optical microscopy images of part of the dried particulate film obtained upon drying of dispersion containing ellipsoids with particle concentration $\phi \sim 3wt\%$. The cracks are limited in the annular ring deposit in the sessile mode whereas, in the sphere-on-plate configuration, the deposits show long-ranged circular cracks.

are obtained throughout the deposit i.e, from edge to the center, when dried in sphere-on-plate configuration.

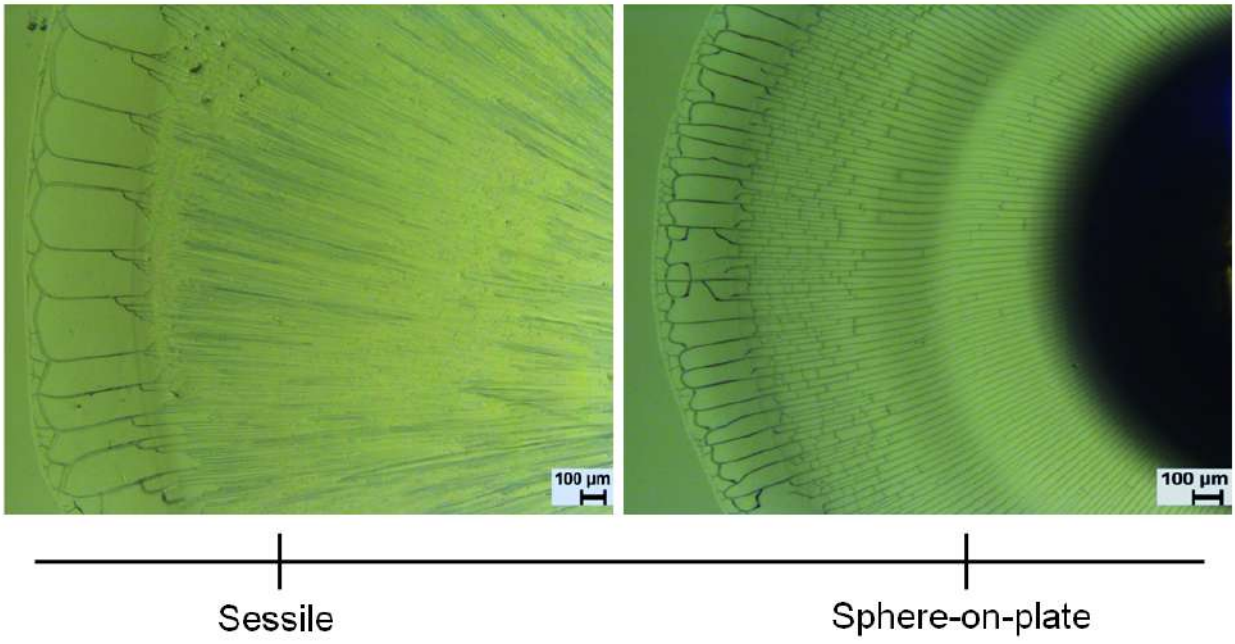

Fig. S7: The optical microscopy images of the part of the dried particulate deposit obtained by drying of drops containing spherical colloids (LUDOX-TMA) at particle concentration $\phi \sim 3wt\%$. Deposits obtained by drying in sessile drop mode show coffee-ring deposits and exhibit radial crack limited near the annular ring region. However, the deposits obtained by drying in the sphere-on-plate configuration exhibits long-ranged radial crack.