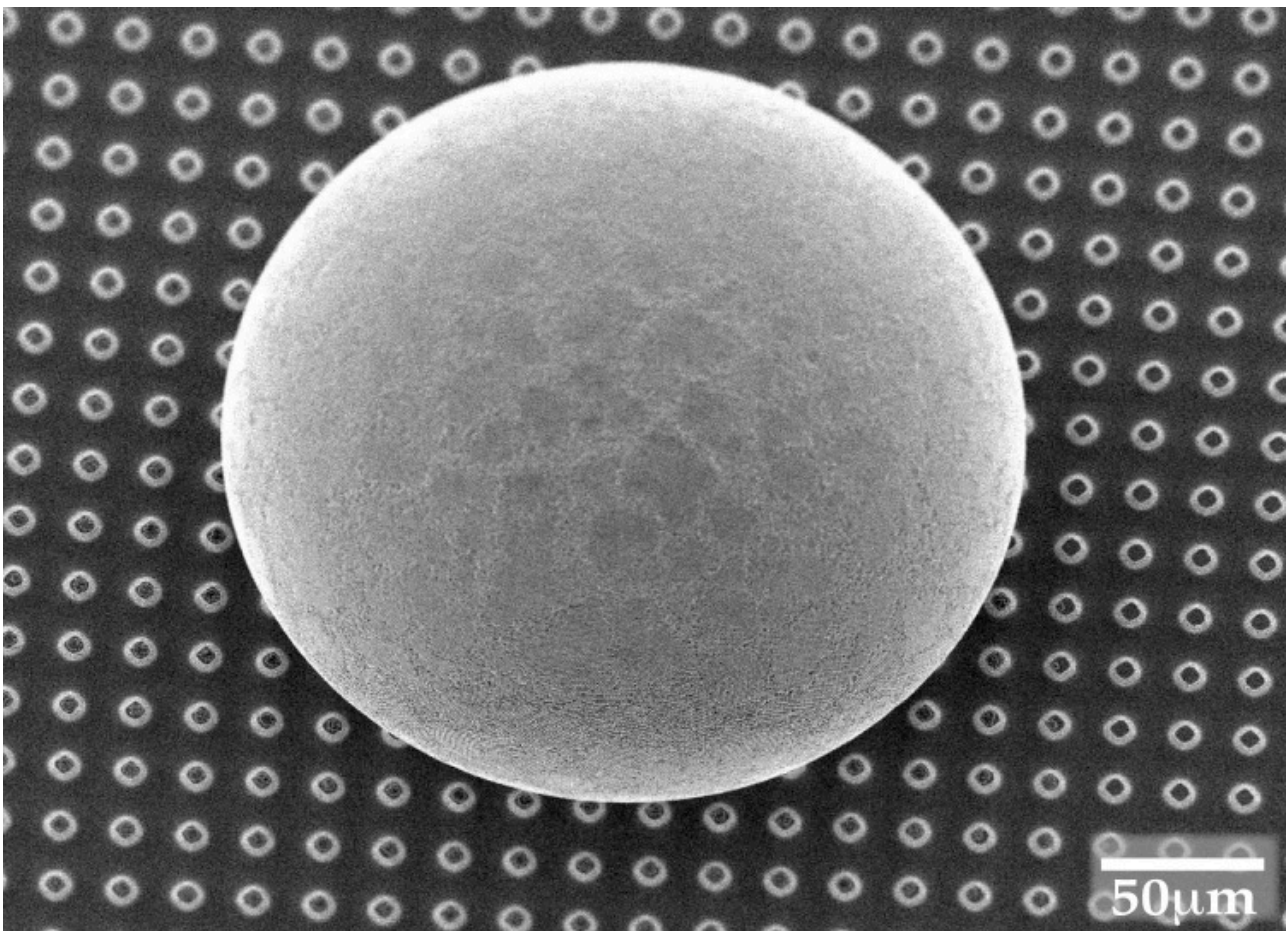


From coffee-stains to micro-soccer-balls: 2D and 3D particle self-assembly via evaporation

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A coffee drop drying out on your table leaves a very distinctive ring-shaped deposit. Although coffee was probably discovered thousands years ago, the mechanism driving coffee stains was not well understood until the late 90s. Coffee-stains are not only an everyday phenomenon illustrating fluid dynamics in your kitchen: they are very interesting two-dimensional colloidal assemblies with great technological applications. I will show you in the first part of the talk the interesting interplay that exists between the drying dynamics and the packing of the colloidal particles, which can show several ordering patterns.

However, in many other technological approaches, fully three-dimensional ordered structures are more interesting to achieve and to study. In the second part of the talk, I will show how can we build spherical colloidal assemblies (micro-soccer-balls, see figure) and how can we understand and manipulate their particle-packing efficiency.

