

Abstract Submitted  
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**Confined drying of copolymer solutions**<sup>1</sup> DAUBERSIES LAURE, LENG JACQUES, SALMON JEAN-BAPTISTE, None — We developed a simple tool for the rapid screening of phase diagrams of polymer and surfactant solutions. Our technique is based on the controlled drying of a droplet solution in a confined geometry. A  $\mu\text{L}$ -sized droplet of an aqueous solution is confined between two wafers (diameter 3 cm), separated by a controlled thickness ( $\approx 150 \mu\text{m}$ ). The confinement casts a well-defined timescale to the drying kinetics, mainly governed by the wafer area. Indeed, water removal only occurs through a diffusive process from the edge of droplet to the edge of the wafer. Confinement also permits a simple 2D description, and allows simple observations of the drying. We studied the drying of an aqueous solution of a tribloc copolymer (Pluronic, P104) thanks to three different techniques: polarized microscopy, fluorescent microscopy, and Raman imaging. With our tool and techniques, we not only build an accurate phase diagram of the solution (with one microliter only) but also measure both the mutual diffusion coefficient and the activity of the solution as a function of its concentration, including the Flory-Huggins parameter.

<sup>1</sup>towards thermodynamical and kinetics data.

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None

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