

## Frontiers in European Research on Liquid Crystalline Soft Matter

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*Session ii. Drops, bubbles, tubes, foams and films*

### **Shear Induced Formation of Multi-Lamellar Vesicles (“Onions”)**



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Many surfactant lamellar phases form multi-lamellar vesicles, often called “onions” when subjected to shear flow, the reason for which still is not well understood. More recent experiments have demonstrated that transitions between the planar lamellar state (lower shear rates) and the state of onions (higher shear rates) are reversible and that they represent true history independent steady states. Also the steady state onion size varies with the applied shear rate in a reversible way. Focusing on the binary water-C10E<sub>3</sub> (triethyleneglycol decyl ether) we present the steady state shear diagram and follow the structural transitions using time resolved rheo-SANS, rheo-SALS and rheo-NMR.

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