

## **Nonlinear flow behaviour of wormlike micellar gels: Route to Chaos**

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Soft matter like surfactant gels exhibit strong response to modest external perturbations. This talk will present our results on the nonlinear flow behaviour of surfactant CTAT wormlike micellar gels. A rich dynamic behaviour exhibiting regular, quasiperiodic, intermittency and chaos is observed. Our experiments show that the route to chaos is via Type-II intermittency for strain rate controlled conditions and Type-III for stress controlled conditions [1-5]. Polarised light scattering experiments have quantified the spatially inhomogeneous orientational dynamics, enroute to chaos. The dynamics of 2D Taylor like velocity rolls, stacked along the vorticity directions, is correlated with the stress fluctuations (6).

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