

problem in dynamics is beyond the scope of this work, however.

### 3. Conclusion

Overall, our results indicate that the orientational order of the nematic liquid crystal is insufficient to have an appreciable effect on the stability of an initially cylindrical nematic bridge. For all practical purposes, the nematic bridge is similar in behaviour to an isotropic Newtonian liquid bridge. On the other hand, owing to the shear thinning of the smectic, and more importantly to its viscoelastic behaviour, the smectic A bridge can be stabilized at neutral buoyancy even for very large slenderness ratios  $R > \pi$ . Moreover, if there is a density mismatch between the smectic A and the bath, deformation does not occur until the mismatch induces a shear stress greater than the yield stress of the smectic.

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