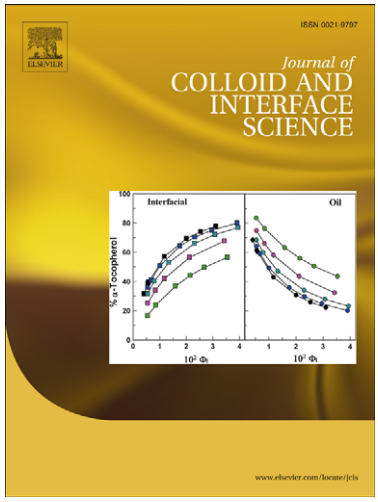
Accepted Manuscript



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PII: S0021-9797(12)01140-X
DOI: http://dx.doi.org/10.1016/j.jcis.2012.09.078
Reference: YJCIS 18299

To appear in: *Journal of Colloid and Interface Science*

Received Date: 7 August 2012
Accepted Date: 29 September 2012

Please cite this article as: M.H. Hatzopoulos, J. Eastoe, P.J. Dowding, I. Grillo, Cylinder to sphere transition in reverse microemulsions: The effect of hydrotropes, *Journal of Colloid and Interface Science* (2012), doi: http://dx.doi.org/10.1016/j.jcis.2012.09.078

Cylinder to sphere transition in reverse microemulsions: The effect of hydrotropes

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Abstract

The effect of hydrotropes on the geometry of reverse water-in-oil AOT-microemulsions is investigated as a function of water content, and hydrotrope additive architecture. SANS reveals that hydrotropes induce cylindrical morphologies which transition to ellipsoidal and then spherical geometries with increasing water content (*w*). The length of the elongated particles appeared to show some dependence on the hydrotrope-AOT tail compatibility, which is also reflected in the phase behaviour of these systems. This is the first report of hydrotrope-induced axial elongation of water microemulsions in the oil phase.