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Interfacial tension of reactive, liquid interfaces and its consequences

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Abstract

Dispersions of immiscible liquids, such as emulsions and polymer blends, are at the core of many industrial applications which makes the understanding of their properties (morphology, stability, etc.) of great interest. A wide range of these properties depend on interfacial phenomena, whose understanding is therefore of particular importance. The behaviour of interfacial tension in emulsions and polymer blends is well-understood -both theoretically and experimentally -in the case of non-reactive stabilization processes using pre-made surfactants. However, this description of the interfacial tension behaviour in reactive systems, where the stabilizing agents are created *in-situ* (and which is more efficient as a stabilization route for many systems), does not yet find a consensus amongst the community. In this review, we compare the different theories which have been developed for non-reactive and for reactive systems, and we discuss their ability to capture the behaviour found experimentally. Finally, we address the consequences of the reactive stabilization process both on the global emulsions or polymer blend morphologies and at the interfacial scale.

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