



# Droplets and Emulsions in Microfluidics

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Compartmentalization is an essential process in the apparition of life and has a wide range of technological applications. Over the past ten years microfluidic systems have been developed for the controlled production, manipulation, analysis and selection of micro-compartments. These microcompartments are now used for ultra-high throughput screening applications in cell selection, protein engineering and drug screening. Although potentially designed as microreactors, the functions of these microcompartments go beyond the straightforward confinement of reagent. Making use of dynamic properties of the compartments and interfacial processes at and out of equilibrium provides the basis for the design of new microcompartments mimicking the properties of living cells or organisms in a minimal synthetic approach.