

DEVELOPING MICROCAPSULE MEMBRANES FOR THE ENCAPSULATION OF ACTIVE INGREDIENTS OF VARYING MOLECULAR WEIGHTS

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Over the last 5 years our research group has developed a range of microcapsule and particle designs adapted to the characteristics of the ingredient to be encapsulated. In this presentation, I will give examples of core-shell particles for use in electrophoretic display applications and semi-permeable and impermeable microcapsule shells for the encapsulation of large and small molecular weight species.

I will first focus on our ability to use environment-responsive polymers to manage the permeability of the polymer shells built around emulsion droplets precursors and the potential to use membrane emulsification techniques to enable the manufacture of such emulsions on multi-litre scales.

Subsequently, I will introduce a recently developed method for the preparation of metal-coated emulsion droplets for the long-term retention of small, volatile encapsulated species. I will indicate the key aspects of the synthesis method for such metal shells and demonstrate our ability to control the thickness of the shell deposited on the surface of the droplets and exemplify the release properties of these microcapsules.