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MINIEMULSIONS BY PHASE INVERSION EMULSIFICATION

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Miniemulsions have attracted considerable attention in recent years for application in surface coatings, cosmetics, pharmaceuticals, etc. Miniemulsions and submicron emulsions have been traditionally made by using high-pressure homogenisers or ultrasound. In this presentation, we show that an attractive and novel process to produce miniemulsions is phase inversion emulsification. The ultra-low interfacial tension occurring during the transitional phase inversion, allows the production of submicron drops with only a small input of mechanical energy. A phase inversion emulsification technique is usually cheaper, and consumes less energy than other emulsification methods. The miniemulsions produced by phase inversion emulsification can be polymerised to produce polymer latexes. Alternatively, the miniemulsions of solvents containing a polymer can produce polymer latexes by evaporating the solvent. The presentation shows how the technique can be used to produce wide varieties of miniemulsions and polymer latexes.