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Formation of nucleation and coalescence of bubbles in different benzene and liquid solutions by liquid - liquid extraction using partial miscible mixtures

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Nucleation and coalescence are used in various chemical industries. Liquid-liquid extraction is a process in which a solute is transferred at a high mass transfer rate from a native solvent to a primary solvent which involves the addition of a primary solvent and a modifier. Extraction of efrotomycin from a fungal fermentation broth and that of beta-galactosidase from an aqueous suspension of disintegrated E. coli cells are the best examples of nucleation and coalescence of bubbles in different benzenes and liquid solutions by liquid-liquid extraction using partially miscible mixture. Conventional and high resilience foams are normally processed through the similar methods. Major factors contributing to the variation in the mechanical properties of these two types of foams are only the order of the chemical processes. During the nucleation, air is entered in the absence of surfactant. Mechanical energy of the mixing process and the surface tension of the surfactant determine the size of the foam cells. Growth of bubbles involves diffusion followed by the expansion of gas; surface tension is the cell size determining factor in this process. Growth of bubbles is followed by the process coalescence; it includes the breaking of the fluid layer between two bubbles. Coalescence may result in crack formation or collapse of the whole foam.

Biography

Nadeem Ahmad works at Advanced Product Design Services, Canada.

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