363b Drawdown of Floating Solids in Stirred Tanks

Suzanne Kresta and Oscar Khazam

Agitated tanks are used in several industrial processes to achieve complete drawdown of floating solids in liquids. The design requirements for this process are as yet unquantified, although there are heuristics regarding the use of a surface vortex, and the effect of wettability on the difficulty of mixing. The effect of the type of impeller, particle size and shape, particle wettability, solids concentration, impeller submergence, and baffle configuration on the minimum drawdown speed (ND) and power input (P) are investigated in this study. A fundamental understanding of the surface and gravity forces involved is used to develop a model for this application, based on the study of all variables mentioned above. CFD simulations are carried out to obtain better understanding and interpretation of the experimental system.