

Dynamic Modeling and Simulation of Industrial Copolymerization Process

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Modeling of a reactor for free radical styrene acrylonitrile (SAN) copolymerization industrial process has been studied. The purpose of this modeling work is establishment of the copolymerization model which is used to optimize of real industrial polymerization process. Target process is the solution binary copolymerization system in a continuous stirred tank reactor. The model is used to compute the monomer conversion, the copolymer composition, the number average molecular weight, the weight average molecular weight, and the molecular weight distribution. The values of rate constants and physical properties are mostly taken from the literature of experimental and estimated works. The developed model demonstrates the industrial data very well for the conversion and the weight average molecular weight.