

عنوان مقاله:

The Synthesis of Monodisperse Nano-Porous Styrene-Divinylbenzene Copolymer Particles by Seeded Dispersion Polymerization Method

محل انتشار:

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خلاصه مقاله:

The ability of porous particles to transfer different materials differentially and their high inner surface area, are among their key characteristics. These features make them one of the best choices in separation processes and especially chromatography. In order to have a moderate pressure drop in a chromatography column, particles should be monodisperse, and the simplest and most common method for their synthesis which is suspension polymerization results in a wide product particle size distribution. To solve the problem, different methods have been introduced [1-4], among which seeding method is the most promising one. However, this method requires a strict control over kinetics and thermodynamics of the polymerization [5,6]. In this study, the common swelling method was utilized in the presence of PVP as the main stabilizer in a multi-step method. Since PVP grafts to the surface of final particles, it cannot be removed from the product, which deteriorates the surface properties of the particles. In order to minimize that, we used a swelling procedure with the minimal use of PVP and optimized it. The products of these two methods (with and without using PVP) were compared using scanning electron microscopy and optical microscopy

کلمات کلیدی:

Porous, Monodisperse, Styrene, Divinylbenzene, Seeded Dispersion Polymerization, Stabilizer

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