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Diffusion Characteristics in Microcapsules

姚善泾[1], 赵万纪[2]

[1] College of Chemical Engineering, Zhejiang University, Hangzhou 310027, China

[2] Department of Food Engineering, Dong-Seo University, 69-1 Jurea-dong Sasanggu Pusan, 616-010 Korea

摘要　An equation of diffusion for microcapsules (hollow sphere) was developed, employing the mathematical model for the diffusion characteristics of solid sphere. In the proposed equation, a combination diffusion coefficient was introduced as a substitute for the diffusion coefficient in the solid sphere mathematical model and expressed as a function of the diffusion coefficient inside solution of hollow sphere, as well as in the polymer membrane. With this modified model, the diffusion coefficients of glucose in NaCS (sodium cellulose sulfate)- PDADMAC (Poly-diallyl-dimethyl-ammonium chloride) membrane and in Ca-alginate gel membrane were determined. The diffusion coefficient in NaCS-PDADMAC membrane was found to be 2.12×10^{-11} m^2·s^{-1} and that in Ca-alginate membrane 2.62×10^{-10}m^2·s^{-1}.

关键词　 diffusion coefficient　 glucose　 NaSC-PDADMAC membrane　 Ca-alginate membrane microcapsule　 hollow sphere　 immobilization

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通讯作者：
姚善泾
作者个人主页：姚善泾[1]；赵万纪[2]

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