Microchemical System with Continuous Recovery and Recirculation of Catalyst-Immobilized Magnetic Particles

박찬필[1], 김동표[1,2,*]
[1]충남대학교; [2]분석과학기술대학원
(dpkim@cnu.ac.kr*)

A continuous flow catalytic system with catalyst-immobilized magnetic particles consists of a microfluidic chip type of microseparator and a capillary microtube reactor. In the separator, the product stream carrying the catalyst-immobilized magnetic particles flows coaxially along with the fresh reactant feed stream that is introduced to the separator. As shown in Figure, the feed stream flows in the bottom half of the microchannel and the magnetic particle carrying product stream flows in the top half. The magnetic field applied to the bottom wall of the channel draws magnetic particles from the product stream to the reactant feed stream, thereby completing the separation of the catalyst particles from the product stream for catalyst recirculation and reuse.