

Fabrication of inorganic microfluidics and its application for the microreaction

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We have successfully fabricated the microreactors derived from modified polysilazane(VL-20®) with high optical transparency, biocompatibility, thermal stability and chemical inertness via simple softlithography techniques. To evaluate the promising performance of microreactor, chiral separation of ibuprofen recemate using ionic liquid membrane and pretreated lipase which has chiral selectivity under organic solvent system were adopted as a model reaction. By low Reynolds number, ionic solution forms the membrane through the whole microchannel to extract S-ibuprofen ester from the feed solution to reservoir side. Finally S-ibuprofen ester can be transferred through ionic membrane and pure S-ibuprofen was recovered by hydrolysis under acid catalyst at reservoir flow by microreactor.