

Fabrication and Application of Pd Catalyst immobilized Micro reactor based on the inorganic polymer, Polyvinylsilazane

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The inorganic polymer based microreactor of which inner surface was coated with a metal nanoparticle was fabricated for catalytic reaction. A microdevice was constructed with an UV-curable Polyvinylsilazane ceramic precursor modified with isocyanate and followed by surface coating with palladium nanoparticle. The catalytic activity of the palladium nanoparticle on the surface of channel for the olefin hydrogenation was compared at different length and shape of channel at various flow rates. The palladium nanoparticle was characterized with FE-SEM and TEM and the products were identified by GC and GC-MS. The depletion of metal from the surface was checked by ICP.