Demonstration of High Separation Efficiency out of Polystyrene Modified Pseudo-monolith Silica Particles Packed Column in Liquid Chromatography

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Abstract

Partially porous silica monolith materials have been prepared by the sol-gel process in the partial sub-1 μm range followed by the modification with polystyrene polymer film by means of RAFT (Reversible Addition Fragmentation Chain Transfer) Polymerization. Those inorganic-organic materials were packed in stainless steel (1 mm ID X 150 mm long) column by means of Altech slurry packer. The materials were used as stationary phase media in revers phase liquid chromatography. Very high separation efficiency (N value~190,000 plates/m) was obtained out of the column of current study when evaluated in HPLC system using a mobile phase of 60/40 (v/v) % acetonitrile/water with a flow rate of 25 μL/min. the column of current study was also capable of fast HPLC analysis.