Preparation of Partially Sub-1 µm Inorganic-Organic Hybrid Silica Monolith Materials as Highly Efficient Stationary Phases in Reverse Phase Liquid Chromatography

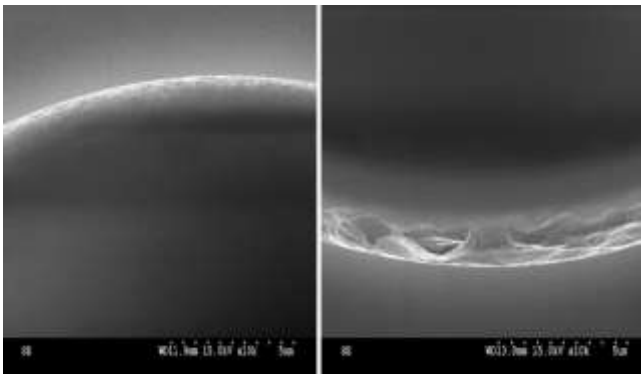
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Abstract (300 word limit)

Pseudo monolithic architecture have been produced inside a stainless steel (1 mm ID X 150 mm long) column by means of Altech slurry packer. The silica monolith particles were synthesized in sub-1 µm range followed by their modification with polystyrene polymer film by means of Reversible Addition Fragmentation Chain Transfer Polymerization. Those inorganic-organic hybrid materials when packed in column which resulted in very high separation efficiency (N value~181,000 plates/m). A mobile phase of 62/38 (v/v) % acetonitrile/water with a flow rate of 22 µL/min was used. The column of current study has the potentials of fast HPLC analysis. The materials were used as stationary phase media in revers phase liquid chromatography.

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Image (high quality)



Recent Publications (minimum 5)

1. Sedimentation assisted preparation of ground particles of silica monolith and their C18 modification resulting in a chromatographic phase of improved separation efficiency. Ashraf Ali, Faiz Ali, Won Jo Cheong. J. Chromatogr. A 1525 (2017) 79-86.
2.
3. High Efficiency Robust Open Tubular Capillary Electrochromtography Column for the Separation of Peptides. Faiz Ali, Won Jo Cheong. Bulletin of the Korean Chemical Society 37 (8), (2016), 1374-1377.
4.
5. Open Tubular Capillary Column for the Separation of Cytochrome C Tryptic Digest in Capillary Electrochromatography. Faiz Ali, Won Jo Cheong. J. Sep. Sci. 2015, 38 (20), 3645–3654.
6.
7. Cheap C18 Modified Silica Monolith Particles as HPLC Stationary Phase of Good Separation Efficiency.Ashraf Ali,Faiz Ali, Won Jo Cheong,Bull. Korean Chem. Soc. 2015, Vol. 36, 1733–1736.
8.
9. Open Tubular Capillary Electrochromatography with an N-Phenyl Acrylamide-Styrene Copolymer-based Stationary Phase for the Separation of Anomers of Glucose and Structural Isomers of Maltotriose. Faiz Ali, Won Jo Cheong. F. Ali et al J. Sep. Sci. 2015, 38(10), 1763–1770.
10.
11. C18-bound Porous Silica Monolith Particles as a Low-Cost High Performance Liquid Chromatography Stationary Phase with an Excellent Chromatographic Performance. Faiz Ali,Won Jo Cheong. F. Ali et al. J. Sep. Sci. 2014, 37(23), 3426–3434..



Biography (150 word limit)

Expertise in separation science and preparation of stationary phases for HPLC and CEC and packing those phases in stainless steel column.

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Abstract type: Oral presentation
Session name/Track: Major Chromatographic Technique/ 1