Title (en)
HIGH GAIN SELECTIVE PRECONCENTRATORS

Title (de)
SELEKTIVE VORKONZENTRATOREN MIT HOHER VERSTÄRKUNG

Title (fr)
PRÉCONCENTRATEURS SÉLECTIFS À RENDEMENT ÉLEVÉ

Publication
EP 1948353 A2 20080730 (EN)

Application
EP 06825517 A 20061006

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Abstract (en)
[origin: WO2007044473A2] Novel metal organic framework (MOF) molecules and methods of synthesizing them are described. MOFs are organometallic crystalline structures that have high sorption capacity due to high surface area, tailorable selectivity, an inert nature, and thermal stability at high temperatures. MOFs may be used as sorbents in preconcentrators for analytical devices to provide orders of magnitude of improved sensitivity in analyte detection. MOFs are also useful as sorbents in new compact and portable micropreconcentrator designs such as a modified purge and trap system and a multi-valve microelectromechanical system (MEMS) to achieve high gain in analyte detection. Further, MOFs may be used as coatings for novel microstructure arrays in micropreconcentrators where the microstructures are designed to increase the surface area to volume ratio inside the micropreconcentrator while minimizing the pressure drop across the micropreconcentrator.

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