tech briefs

Westinghouse Savannah River Company

Uses standard, inexpensive laboratory glassware

New Chromatography Column Design

at a glance

- Easy to assemble
- Provides fluid-tight seal
- Quickly restores optimum flow
- Easy to clean for reuse
- Reduces set up time between runs
- U.S. Patent 6,440,301

for more information

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A scientist at Westinghouse Savannah River Company (WSRC) has designed an innovative method for constructing a chromatography column using standard laboratory glassware. The invention includes a device inserted into a hollow glass tube to support a chromatography resin or other matrix. When used with a graduated volumetric glass cylinder, the supporting device may be aligned with the "0" volumetric indicator on the glass cylinder to enable accurate adjustments in volumetric measurements.

Background

Chromatography is a commonly employed technique used to separate a biological or chemical material based upon the material's physical or chemical properties. Standard sizes of traditional chromatography columns and accessories are not compatible with other standard lab glassware. Existing resin supports can be used only with a traditional chromatography column. With conventional membrane or single-use resin supports, fine particles of the matrix gel often may filter down, reducing the flow rate and/or separation efficiency of the column. These supports may rupture or lose their desired integrity if subjected to a back flushing or back pressure.

Quick and simple

In the new column design, the resin-supporting device provides a fluid-tight (liquid and gas) seal around the periphery of a standard glass tube to create an effective and inexpensive chromatography column. Back pressure may be applied to back flush a packed resin bed and re-establish the desired column flow rate. The column also is easily cleaned, which greatly shortens the time of preparing the column for an additional run. The dimensions of the chromatography resin-support device can be modified as needed to fit a variety of standard glass cylinders.

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Partnering opportunity

The U.S. Patent and Trademark Office has issued Patent 6,440,301 for this invention.

WSRC invites interested companies with proven capabilities in this area of expertise to enter into a licensing agreement with WSRC to manufacture and market this device as a commercial product. Interested companies will be requested to submit a business plan setting forth company qualifications, strategies, activities and milestones for commercializing this invention. Qualifications should include past experience at bringing similar products to market, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch.

Technology transfer

WSRC is the managing contractor of the Savannah River Site for the U.S. Department of Energy. WSRC scientists and engineers develop technologies designed to improve environmental quality, support international nonproliferation, dispose of legacy wastes, and provide clean energy sources.

WSRC is responsible for transferring technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

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