

Capillary Channeled Fiber Devices for Liquid Chromatography and Protein Extraction

Description:

This technology features the usage of a novel cross-section of polymer fibers for various applications such as liquid chromatography to separate, quantify, and analyze contents of a chemical mixture. Bundles of the novel high surface area fibers such as the 4DG™ fibers (see CURF Ref No 00-024) are packed in columns. Different polymer compositions permit the "chemical tuning" of the separation process. Use of channeled fibers allows a wide range of liquid flow rates with very low backing pressures. In addition, the fibers can be physically or chemically derivatized to target specific analytes for separation from a test sample. The fibers are easily packed into a micropipette tip or a conduit for use with a fluid flow device such as an aspirator or a pump. The resultant devices can then be used for isolation and pre-concentration of analytes from samples, for instance for proteins from buffer solutions or extraction of pollutants from remote locations.

Note: [CURF Ref No 05-025](#) is a directly related technology.

Applications:

- High performance liquid chromatography (HPLC)
- Capillary liquid chromatography (cap-LC)
- Separations of specialty chemicals
- Waste remediation/immobilization
- Purification of liquid streams (process waste, drinking water, pure solvents)
- Selective extraction/immobilization of cell matter

Benefits:

- Overcomes problem of high back pressures needed for densely packed columns
- Customized applications possible
- Adaptable to current technology configurations

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Protection Status: Patents issued; # [7,261,813](#) and # [7,740,763](#)
Licensing Status: Available for licensing
CURF Ref No: 02-003

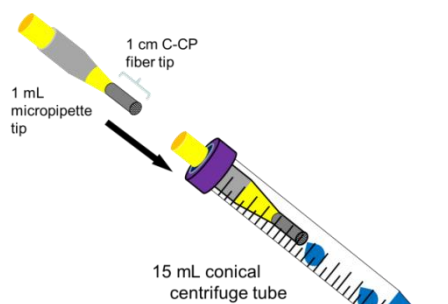


Figure 1: C-CP fiber tip assembly with liquid sample testing setup