

Separations of polystyrene sulfonate by dual pump field flow fractionation using UF hollow fiber membranes

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The separation of wide molecular mass ranges of macromolecules using hollow fiber flow field flow fractionation(HF5) has been improved by implementing a combination of field and flow programing. A theory that describes the retention, peak broadening and efficiency parameters for the system, as well as the relaxation process, has been developed and experimentally verified by model separations of polystyrene sulfonate.

In this study, the advantages of empolying dual pump with HF5are demonstrated for sets of polystyrene sulfonate standards in the molecular mass range of 4 to 1000 kDa. It is shown that dual pumped HF5 successfully expands the dynamic separation range of molecular mass.