



(54) **ELECTROKINETIC CONCENTRATION OF CHARGED MOLECULES**

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(57) **ABSTRACT**

A method for separating and concentrating charged species from uncharged or neutral species regardless of size differential. The method uses reversible electric field induced retention of charged species, that can include molecules and molecular aggregates such as dimers, polymers, multimers, colloids, micelles, and liposomes, in volumes and on surfaces of porous materials. The retained charged species are subsequently quantitatively removed from the porous material by a pressure driven flow that passes through the retention volume and is independent of direction thus, a multi-directional flow field is not required. Uncharged species pass through the system unimpeded thus effecting a complete separation of charged and uncharged species and making possible concentration factors greater than 1000-fold.

14 Claims, 3 Drawing Sheets

