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**Sommer et al.**

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- (54) **DEVICES, SYSTEMS, AND METHODS FOR MICROSCALE ISOELECTRIC FRACTIONATION**
- (71) Applicant: **Sandia Corporation**, Albuquerque, NM (US)
- (72) Inventors: **Gregory J. Sommer**, Livermore, CA (US); **Anson V. Hatch**, Tracy, CA (US); **Ying-Chih Wang**, Pleasanton, CA (US); **Anup K. Singh**, Danville, CA (US)
- (73) Assignee: **Sandia Corporation**, Albuquerque, NM (US)

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CPC .... B05D 3/002; B05D 3/061; B05D 2202/00; B29D 7/01  
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See application file for complete search history.

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*Primary Examiner* — Robert S Walters, Jr.  
(74) *Attorney, Agent, or Firm* — Medley, Behrens & Lewis, LLC

(57) **ABSTRACT**

Embodiments of the present invention provide devices, systems, and methods for microscale isoelectric fractionation. Analytes in a sample may be isolated according to their isoelectric point within a fractionation microchannel. A microfluidic device according to an embodiment of the invention includes a substrate at least partially defining a fractionation microchannel. The fractionation microchannel has at least one cross-sectional dimension equal to or less than 1 mm. A plurality of membranes of different pHs are disposed in the microchannel. Analytes having an isoelectric point between the pH of the membranes may be collected in a region of the fractionation channel between the first and second membranes through isoelectric fractionation.

**11 Claims, 5 Drawing Sheets**

