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Marcus, R. Kenneth and Christensen, Kenneth A., "Functionalized lipid modification of solid phase surfaces for use in chromatography" (2017). *Clemson Patents*. 595.

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US009827552B2

(12) **United States Patent**
Marcus et al.

(10) **Patent No.:** **US 9,827,552 B2**

(45) **Date of Patent:** **Nov. 28, 2017**

(54) **FUNCTIONALIZED LIPID MODIFICATION OF SOLID PHASE SURFACES FOR USE IN CHROMATOGRAPHY**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 443 days.

(21) Appl. No.: **14/333,561**

(22) Filed: **Jul. 17, 2014**

(65) **Prior Publication Data**
US 2015/0024511 A1 Jan. 22, 2015

Related U.S. Application Data
(60) Provisional application No. 61/847,135, filed on Jul. 17, 2013.

(51) **Int. Cl.**
B01J 20/00 (2006.01)
B01J 20/281 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **B01J 20/281** (2013.01); **B01D 15/206** (2013.01); **B01D 15/3823** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC B01J 20/281
(Continued)

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(Continued)

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(57) **ABSTRACT**

A solid phase for use in separation has been modified using an aqueous phase adsorption of a headgroup-modified lipid to generate analyte specific surfaces for use as a stationary phase in separations such as high performance liquid chromatography (HPLC) or solid phase extraction (SPE). The aliphatic moiety of the lipid adsorbs strongly to a hydrophobic solid surface, with the hydrophilic and active headgroups orienting themselves toward the more polar mobile phase, thus allowing for interactions with the desired solutes. The surface modification approach is generally applicable to a diversity of selective immobilization applications such as protein immobilization clinical diagnostics and preparative scale HPLC as demonstrated on capillary-channeled fibers, though the general methodology could be implemented on any hydrophobic solid support material.

9 Claims, 9 Drawing Sheets

