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**Haynie**

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(54) **METHOD FOR CONTROLLING STABILITY OF NANOFABRICATED POLYPEPTIDE MULTILAYER FILMS, COATINGS, AND MICROCAPSULES**

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(75) Inventor: **Donald T. Haynie**, New Haven, CT (US)

(73) Assignee: **Louisiana Tech University Foundation**, Ruston, LA (US)

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(51) **Int. Cl.**  
**C07K 2/00** (2006.01)

(52) **U.S. Cl.** ..... **530/300**

(58) **Field of Classification Search** ..... None  
See application file for complete search history.

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*Primary Examiner*—Cecilia Tsang  
*Assistant Examiner*—Christina Marchetti Bradley  
(74) *Attorney, Agent, or Firm*—Cantor Colburn LLP

(57) **ABSTRACT**

Disclosed herein is a method of controlling the stability of multilayer polypeptide films. A method of controlling the stability of a film, comprises exposing the film to an oxidizing agent or a reducing agent, wherein the film comprises a plurality of layers, the layers comprising alternating oppositely charged polypeptides, wherein a first layer comprises a first layer polypeptide and a second layer comprises a second layer polypeptide, and the first layer polypeptide comprises a sulfhydryl-containing amino acid.

**12 Claims, 13 Drawing Sheets**