US005855819A

United States Patent [19]

DeSimone et al.

[11] **Patent Number: 5,855,819**

[45] **Date of Patent: Jan. 5, 1999**

[54] **SYNTHESIS OF CONDUCTIVE POLYMERS IN LIQUID AND SUPERCRITICAL CO_2**

[75] Inventors: **Joseph M. DeSimone**, Chapel Hill, N.C.; **Yizeng Ni**, State College, Pa.

[73] Assignee: **University of North Carolina at Chapel Hill**, Chapel Hill, N.C.

[21] Appl. No.: **825,119**

[22] Filed: **Mar. 27, 1997**

[51] **Int. Cl.**^{6} **H01B 1/12**

[52] **U.S. Cl.** **252/511**; 524/424; 526/89

[58] **Field of Search** 252/511; 524/424; 526/89

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,551,403	11/1985	Miyakawa	430/58
4,882,107	11/1989	Cavender	264/51
5,435,932	7/1995	Bryant	252/77
5,509,959	4/1996	Nielson	106/287.35

Primary Examiner—Paul R. Michl

Attorney, Agent, or Firm—Myers Bigel Sibley & Sajovec

[57] **ABSTRACT**

A method of forming an electrically conductive polymer comprises providing a reaction mixture in carbon dioxide, the reaction mixture comprising at least one monomer and a charge transfer agent. The monomer is then polymerized in the carbon dioxide to form a polymer, and the polymer is doped with the charge transfer agent so that the polymer is an electrically conductive polymer.

23 Claims, No Drawings