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[54] **PLASMA GAS DISCHARGE TREATMENT FOR IMPROVING THE COMPATIBILITY OF BIOMATERIALS**

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[51] **Int. Cl.**[5] **B32B 27/00**; A01N 1/02; B05D 3/06; A61M 25/00

[52] **U.S. Cl.** **428/253**; 427/2; 427/40; 427/41; 604/266; 428/422; 428/254; 428/265

[58] **Field of Search** 427/38, 39, 40, 41, 427/2, 254, 253; 428/265, 422; 204/169; 3/1.4, 1.5, 1.7; 128/DIG. 22; 604/266, 408, 409, 410

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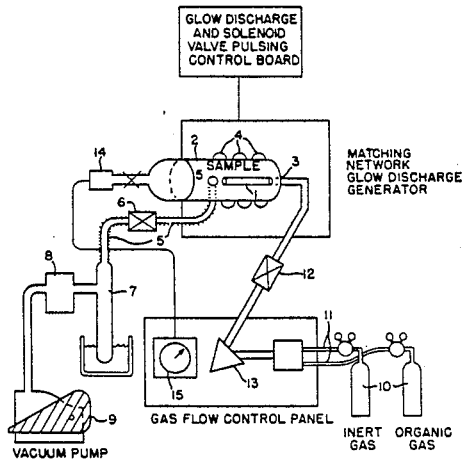
[57] **ABSTRACT**

A method of treating articles to improve their biocompatibility is disclosed. A polymeric substrate material is positioned within a reactor vessel and exposed to plasma gas discharge in the presence of an atmosphere of an inert gas and then in the presence of an organic gas, such as a fluorinated hydrocarbon gas, which forms a thin, biocompatible surface covalently bonded to the surface of the substrate. The method is particularly useful in the treatment of vascular graft materials to produce grafts that are both thrombi- and emboli-resistant.

10 Claims, 8 Drawing Sheets