Title: Electrospun polyimide nanofibers and their applications

Author: Yichun Ding Haoqing Hou Yong Zhao Zhengtao Zhu Hao Fong

PII: S0079-6700(16)30038-7
DOI: http://dx.doi.org/doi:10.1016/j.progpolymsci.2016.06.006
Reference: JPPS 991

To appear in: *Progress in Polymer Science*

Received date: 28-7-2015
Revised date: 8-6-2016
Accepted date: 27-6-2016

Please cite this article as: Ding Y, Hou H, Zhao Y, Zhu Z, Fong H, Electrospun polyimide nanofibers and their applications, *Progress in Polymer Science* (2016), http://dx.doi.org/10.1016/j.progpolymsci.2016.06.006

Electrospun polyimide nanofibers and their applications

Yichun Ding[a,b], Haoqing Hou[a1]haoqing@jxnu.edu.cn, Yong Zhao[b], Zhengtao Zhu[b], Hao Fong[b*]hao.fong@sdsmt.edu

[a]College of Chemistry and Chemical Engineering, Jiangxi Normal University, Nanchang, Jiangxi 330027, China

[b]Program of Biomedical Engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota 57701, USA

Tel.: 1 605 394 1229

Abstract

Aromatic polyimides (PIs) are high-performance polymers with rigid heterocyclic imide rings and aromatic benzene rings in their macromolecular backbones. Owing to excellent mechanical properties and thermal stability, as well as readily adjustable molecular structures, PIs have been widely adopted for many applications related to electronics, aerospace, automobile, and other industries. In recent years, PI fibers prepared by electrospinning of polyamic acid (PAA) precursor nanofibers followed by imidization (commonly known as electrospun PI nanofibers) have attracted growing interests. Herein, the preparation, evaluation, and application of electrospun PI nanofibers are reviewed. PI polymers and the electrospinning technique are introduced first followed by the preparation of electrospun nanofibers of homo-PI, co-PI, blend-PI, and PI