Electro-spinning System for Controlled Deposition and Desired Alignment

INVENTORS:
Dr. Ghaus Rizvi, Mr. Rasel Sheikh Md

OVERVIEW: The technology developed is a novel electro-spinning system that enables the production of a variety of functionally graded micro/nano-fibrous patterned structures. The system also enables desired alignment and controlled deposition.

TARGET MARKETS: Biomedical, filtration, energy storage, protective clothing, sensors, industrial applications, etc.

BACKGROUND

Electrospinning is a simple, versatile, and economical technique that is capable of fabricating ultrafine fibers from a rich variety of materials. Modification of the electrospinning parameters and apparatus can generate nanofibers for use in diverse applications ranging from tissue engineering to nanocomposite fabrication; however, electro-spun fibers are typically collected in a random orientation and over large areas limiting their applications. Over the last 10 years, advances in electrospinning technology have greatly impacted the nanofiber market. In fact, the Nanofiber Market was approximately $151.7 in 2012 (this includes interfacial polymerization, electrospinning, and force spinning) and is expected to grow to $570.2 million in 2017 representing a compound annual growth rate of 30.3%.

TECHNOLOGY OVERVIEW

The research group led by Dr. Ghaus Rizvi has developed a novel electrospinning technology that enables controlled deposition and desired alignment. This system is further capable of producing random or aligned, multilayer, functionally graded nanofiber. Furthermore, the system allows one to control the amount of electro-spun fibers deposited. Hence the end-use applications using this novel system are numerous, including tissue engineering scaffolds, biosensors, neural prostheses, solar cells, sensors, electronics, optoelectronic devices, filtration, reinforcement of composite materials, etc.

BUSINESS OPPORTUNITY

Ontario Tech University looks to work with companies in a way that helps develop a relationship that is tailored to their interests. Thus, we are happy to explore collaborations, licenses, options, assignments, etc. It is the belief that only through enabling the company to utilize their business model will Ontario Tech University technology be able to make an impact within the marketplace.

About Ontario Tech University

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