Elecrospinning System For Controlled Deposition And Desired Alignment

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

OVERVIEW: The technology developed is a novel electropinning system that enables 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 application ranging from tissue engineering to nanocomposite fabrication; however, electrospun 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 forcespinning) 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 electrospun fibres 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

UOIT looks to work with companies in a way that helps develop a relationship that is tailored around 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 the UOIT technology be able to make impact within the marketplace.

ABOUT UOIT

UOIT conducts high-quality, rigorous research designed to meet the research and development needs of business and industry and benefit society. Whether the focus is on developing hydrogen-from-nuclear or fuel-cell technologies, improving network security or understanding youth crime, we are committed to interdisciplinary research and development that addresses social, environmental, health and economic challenges.