

Tortech Nano Fibers - Non-woven mats made of ultra-long carbon nanotubes for advanced applications

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Abstract

Tortech Nano Fibers (TNF) is an Israeli startup company founded in 2010, jointly owned by Plasan Sasa Ltd. (Israel) and Q-Flo Ltd. (UK). TNF's is a nanotechnology, innovative company dealing with the development of macroscopic, non-woven mats, made of ultra-long carbon nanotubes. Tortech's main challenges are: (1) To develop an industrial process to manufacture continuous form of non-woven mats made solely from ultra-long CNTs; (2) To develop new and innovative applications using the unique properties of non-woven CNT mats.

The core technology of TNF is based on a novel patented process that was initially developed by Prof. Alan Windle's lab at the Cambridge University. The process is a continuous gas phase catalytic reaction between a floating catalyst and a carbon source. The almost infinite interactions between the ultra-long CNTs enable the formation of a continuous and robust non-woven mat that could be handled and used without the addition of any binders.

The TNF process is utilizing inexpensive precursors, which can lead to an economical yet revolutionary final product for a wide range of commercial and defense applications. TNF has also gained knowledge and hands-on experience with the fabrication of composite samples based on its CNT product in various matrixes. TNF is at an ongoing effort towards developing numerous applications based on novel CNT technology in various fields such as: structural composite materials, EMI shielding, energy, heat dissipation, ballistic protection, membranes and filters, and more.

In the presentation, we will describe the principles of our process. We will focus on some of the properties of our product, and give examples to the possible applications for our unique material.

Figures

