

January 6, 2015

Advanced Prototyping Service for Complex Electrospun Fibers Offered by NEI Corporation

Somerset, New Jersey – NEI Corporation announced today an expansion of its service for producing nanoscale and microscale fibers through electrospinning. **Electrospinning** is a technique to form fibers by the use of a voltage potential, drawing material out into a thin diameter and collecting it on a grounded platform. The electrospinning equipment at NEI allows for large areas of fiber mats – upwards of one square foot. Combined with a variety of characterization and testing equipment already available in-house, this can accelerate development of the customer's technology into commercial materials. Electrospinning offers a commercially viable method for rapid prototyping of fibrous materials.

Newly offered through NEI's capabilities are two approaches which can be utilized for novel fiber production:

- (1) Multi-scale fibers which can range from a few hundred nanometers up to tens of micrometer.
- (2) Core-shell fibers which contain a different material for the wall of the fibers and another for the core.

These two approaches have been combined in a recent endeavor funded by a Fortune 50 Company in which NEI was able to fabricate small diameter fibers and utilized the core-shell technique to produce silicone fibers. Uncured silicone was entrapped within a wall of another polymer during electrospinning. Once the entrapped silicone was cured, the outer polymer was dissolved yielding 50 μm wide silicone fibers. Such a method can be applied to create small diameter fibers that were otherwise impossible to fabricate. In this respect, NEI offers its knowledge and expertise in helping to transition concepts into working prototypes.

NEI's capabilities in electrospinning also include the ability to fabricate an assortment of different fibers, such as polymeric, ceramic, or metallic materials. Additionally, as part of expanding the scope of recent advancements in electrospinning, NEI can create tailored core-sheath fibers for production of composite fibers.

NEI can also assist the customer in identifying the special attributes of electrospun fibers and how to benefit from them. NEI has worked with other companies to elevate the technology readiness levels of new technologies and can provide direction in advancing fiber production as per the needs of the application. Characterization and tests can be carried out under applicable industry standards, such as American Society for Testing and Materials (ASTM). Given NEI's vast experience in nanotechnology and materials synthesis, its electrospinning service enables the company to share its knowledge with customers through fabrication, testing, and analysis of its customer's technologies with NEI's state of the art equipment.

For more information on NEI's electrospinning service, view the [brochure](#).

About NEI Corporation:

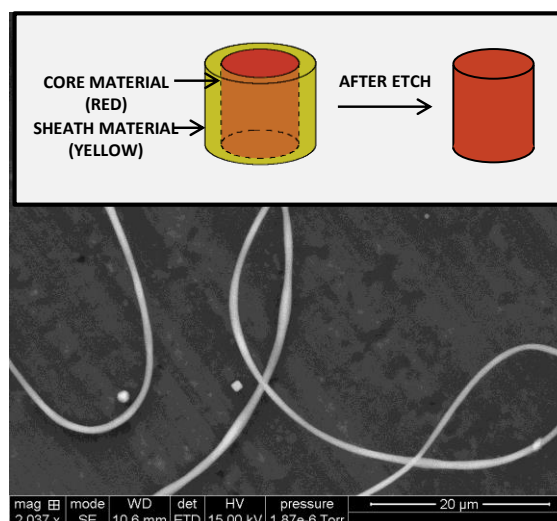
Founded in 1997, NEI Corporation develops, manufactures, and distributes nanoscale materials for a broad range of industrial customers around the world. NEI's products incorporate proprietary nanotechnology and advanced materials science to create significant performance improvements in manufactured goods. NEI's products include advanced protective coatings, high performance battery electrode materials, and specialty nanoscale materials for diverse applications. NEI has created a strong foundation in the emerging field of nanotechnology that has enabled the company to become a leader in selected markets.

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Silicone fiber fabricated using core-shell electrospinning technology developed at NEI: Project funded by a Fortune 50 Company. Inset: schematic of the etching process to yield silicone fibers.