POLYMERS • ENERGY • ENVIRONMENTAL • CONTRACT RESEARCH

# NEI Corporation

## NANOTECHNOLOGY SPECIALISTS

NEI Corporation is a company that designs, develops, manufactures, and markets proprietary nanoscale materials to the Department of Defense and the commercial sector. We utilize our core strength in developing innovative nanocomposite materials to enable our customers to achieve material performance levels previously not attainable. Our intellectual property depth in nanocomposite materials and applications provides significant value to our varied customer base.

Our vision is to be a world leader in developing and supplying quality advanced materials. We are achieving this by partnering with our customers to provide superior product performance through materials development and efficient manufacturing.

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## CORE COMPETENCIES

NEI Corporation specializes in bridging the gap between nanoscale science and our customers' application needs, providing custom materials solutions for a broad range of government and industry customers. NEI's core competencies are in synthesizing nanoscale particles, modifying the surface of the particles using innovative techniques, and dispersing the particles in aqueous and non-aqueous liquids to create leading-edge products with significant performance advantages for our customers. Two examples are: (a) in the coatings area, we developed self-healing coatings that are environmentally friendly (low volatile organic compounds, non-chromate, water-borne); and (b) we are supplying new materials for prototype Li-ion battery development to the DOD, NASA, and the commercial markets.

## PRODUCTS AND SERVICES

We design, develop, manufacture, and market proprietary nanoscale materials and products for a broad range of customers around the world. We provide materials development services, and perform contract-based R&D for public and private entities. We have created a solid foundation in the emerging field of nanotechnology driven by an experienced management team and group of world-class scientists. We have built a strong manufacturing and R&D infrastructure. Our impressive portfolio of intellectual property, which is protected by multiple patents, enables us to provide significant value to our customers. Our nanoengineering-based approach makes it convenient for our customers to incorporate our nanomaterials into their products. We work with our customers from the materials design and testing stages through full-scale manufacturing and commercial implementation.

Our nanoscale products are sold under the brand name of Nanomyte™. Nanomyte™ products include Advanced Protective Coatings, Polymer Composites, High Performance Battery Materials, and Environmentally Friendly Sorbents for treating pollutants in air and water.

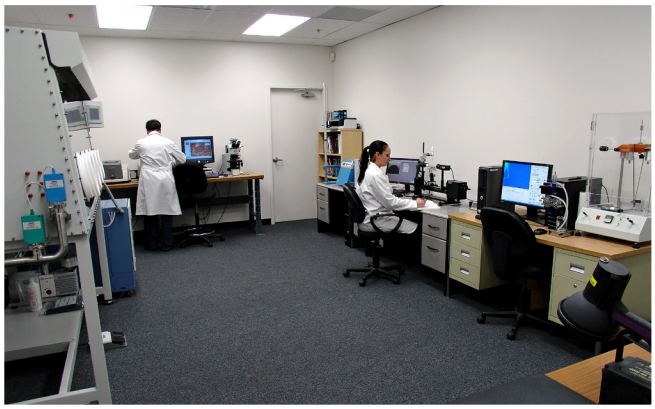
## PARTNERS

We have ongoing projects with domestic and international partners, including Fortune 50 companies. We also have programs underway with multiple U.S. Federal Agencies including the Department of Defense, Department of Energy, National Science Foundation, and NASA. In addition, we have projects funded by private non-profit organizations, such as EPRI.

## COMPANY PROFILE

NEI Corporation was co-founded in 1997 by Dr. Ganesh Skandan, who is presently the CEO. The Company has enjoyed significant growth and profitability since its inception. Its sustainability has been demonstrated by its growth in the past twelve months, despite the recent global economic downturn.

NEI has two state-of-the-art materials manufacturing facilities to produce nanomaterials, located in Somerset, NJ and Kolkata, India. The Somerset location is a 10,000 $ft^2$ facility which is dedicated to R&D and product scale-up to 1,000 kilogram quantities of advanced materials.



NEI Corporation – Somerset, NJ (USA)

The Kolkata facility, which is a joint venture with the United Credit Group, is a 40,000 $ft^2$ manufacturing plant that can produce up to 10 tons/month of Li-ion battery electrode materials.


NEI Corporation's Joint Venture – Kolkata, India

NEI employs several different business strategies to grow various segments of our business including: (i) use of in-house business development and production capacity for high value, low volume materials; (ii) outsourcing manufacturing to domestic manufacturers for specialty materials; (iii) establishment of joint ventures where NEI brings in the technology, and the JV partner finances the operation; and (iv) spin-offs focused on specific business opportunities.

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# MANAGEMENT TEAM

## DR. GANESH SKANDAN – CEO

Dr Ganesh Skandan earned his Ph.D. in Materials Science and Engineering from Rutgers University. As a graduate student, he co-developed and patented two processes for producing nanoparticles, and received the Hoechst Celanese Award for Graduate Excellence. Shortly after his graduate work, Dr. Skandan co-founded NEI Corporation. As Vice President R&D for six years at NEI Corporation, he led the development of an array of nanomaterials synthesis technologies that constitutes the technology platform upon which NEI is built. As CEO for the past six years, he transitioned funded technology development programs into commercial products, and assembled a strong management team to grow NEI into a financially stable company. Dr. Skandan has been awarded nine patents, and has co-authored encyclopedia articles, edited conference proceedings, and co-authored several technical articles.

## DR. FRED ALLEN – PRESIDENT, AMERICAN NANOMYTE

Dr. Fred Allen has over 25 years of experience working at the nanometer scale as a materials scientist with a business perspective. He obtained his B.S. degree in Earth & Planetary Sciences from SUNY Stony Brook in 1979. He then went to Harvard University as a National Science Foundation Fellow and obtained M.A. and Ph.D. degrees in Geological Sciences in 1981 and 1985, respectively. In 1987, Dr. Allen joined Engelhard Corporation (now BASF) where he conducted research, commercialized products, and managed the Technology Assessment Group for 18 years. In 2005, Dr. Allen joined a nanotechnology investment firm, Advance Nanotech, as Senior Vice President of Materials. In 2008, he became President of American NanoMyte, a division of NEI Corporation, where he is responsible for commercializing their proprietary self-healing anti-corrosion coatings. Dr. Allen has over 50 publications and presentations and 10 patents.

## DR. ROBERT A. IEZZI – VICE PRESIDENT, COATING TECHNOLOGIES

Dr. Robert Iezzi earned his Ph.D. in Materials Science from Lehigh University, M.S. in Physics from Kent State University, and B.S. in Engineering from Widener University. Dr. Iezzi is a recognized authority on all aspects of coatings technology, corrosion science, and polymers. Prior to joining NEI Corporation in 2009, Dr. Iezzi worked a total of 42 years in coatings and polymers R&D at Fortune 500 companies, specifically Arkema Chemicals, Campbell Soup, Betz-Dearborn, and Bethlehem Steel, where he developed and commercialized dozens of innovative products. He also teaches graduate level engineering courses at Penn State University on a part-time basis. Dr. Iezzi holds 6 U.S. patents, dozens of foreign patents, and is the author of 49 publications in respected technical journals.

# TECHNICAL INNOVATIONS & APPLICATIONS

## POLYMERS

### ADVANCED PROTECTIVE COATINGS - FOR NAVY AND OTHER MILITARY/INDUSTRIAL USES

**Nanomyte™ nanocomposite coatings for steel, aluminum, magnesium, and high-performance fabrics:**

Excellent corrosion resistance (1000 hour ASTM B-117 salt spray with minimal scribe creep), wear resistance (1500 cycle Taber Abrasion testing with minimal coating damage), and preservation of other aesthetic and functional properties (e.g., hardness, toughness) in extremely aggressive environments (e.g., marine, heavy industrial)

Self-healing pretreatments, primers, and topcoats – extends service life and reduces maintenance costs by preserving long-term integrity of the substrate

Environmentally favorable formulations – water-borne, chromate-free, low VOC (Volatile Organic Compound)

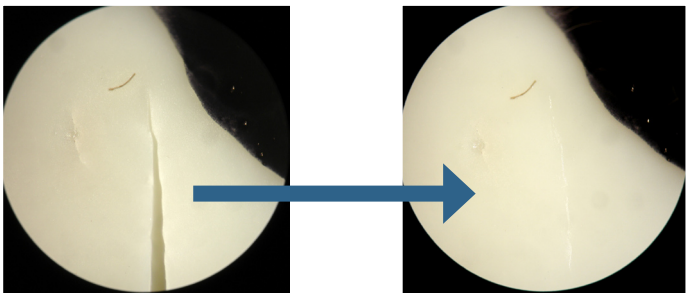

NASA “Test” Airbag

**Nanomyte™ Transparent coatings for plastic substrates that offer exceptional hardness and scratch resistance.**

NEI coatings preserve the appearance and functionality of the plastics to which they are applied (e.g., eyeglass lenses, displays, cell phones, electronics)

### POLYMER COMPOSITES

NEI’s Nanomyte™ self-healing fiber-composite technology is designed to extend the life of composite components used in the defense and aerospace sectors by preventing growth of delamination cracks and micro-cracks. Specially designed nanocomposite additives can self-heal thermoset polymers (e.g., polyurethane and epoxy), and thermoplastic polymers such as PVC, PTFE, and others.



Heating without an external force - Epoxy-based polymer - 3 mm crack

## ENERGY

### HIGH PERFORMANCE BATTERY MATERIALS

NEI Corporation has over ten years of experience developing and manufacturing lithium-ion battery electrode materials. We do custom solid state synthesis and materials development, and supply our Nanomyte™ line of cathode and anode materials in large volume (greater than 100 tons per year). NEI's electrode materials provide higher energy density and improved rate capability in Li-ion batteries.

### HEAT EXCHANGERS

NEI's super-hydrophobic surface treatment imparts outstanding hydrophobicity to surfaces, particularly at above ambient temperatures. The super-hydrophobic surface treatment increases condenser heat transfer efficiency, resulting in energy and cost savings, by facilitating drop-wise condensation as opposed to film-wise condensation.

## ENVIRONMENTAL

NEI has produced sorbents that are highly efficient in adsorbing mercury and selenium from wastewater. These sorbents can treat contaminated soil and groundwater and are being engineered for other water treatment processes. NEI is also developing an environmentally friendly sorbent that removes mercury from coal-fired power plant flue gas.

## CONTRACT RESEARCH

We offer R&D services for federal and other not-for-profit organizations. We have performed contract research and development for the following not-for-profit agencies.

## CONTACT US TODAY TO FIND OUT HOW WE CAN WORK TOGETHER

For more information, contact:

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