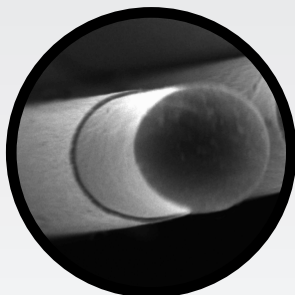


ADVANCED MATERIALS



ADVANCED MATERIALS FROM A UNIQUE COMMERCIAL PROCESS

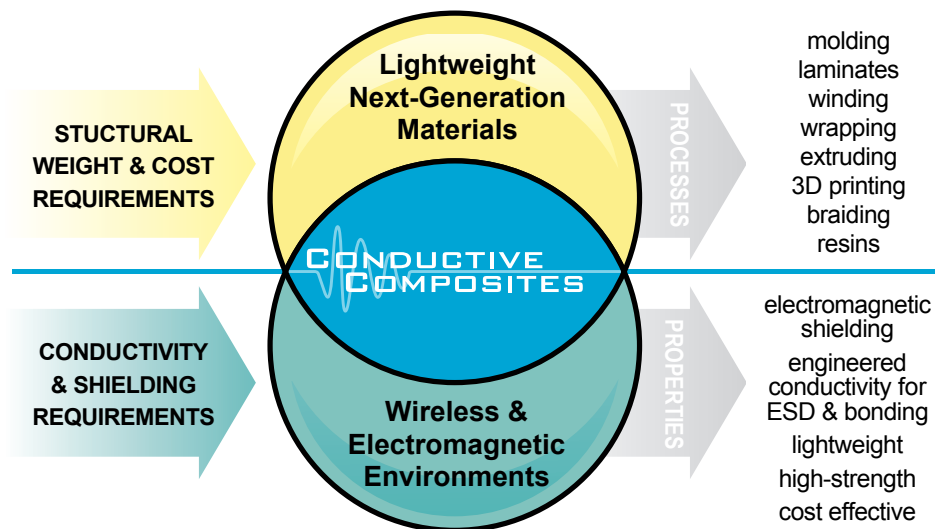


ADVANCED FIBERS

- Highly conductive
- Ductile, uniform coating
- Lightweight
- High strength
- Magnetic
- Corrosion resistant
- Multifunctional
- Versatile
- Multiple sizing options
- Short fiber formats

ADVANCED MATERIALS

Conductive Composites manufactures and modifies composite and plastic materials through a unique and proprietary Chemical Vapor Deposition process. Our materials integrate game-changing conductivity and shielding performance as part of a multifunctional materials system, while preserving the basic weight, cost, structural, environmental, and manufacturing performance advantages of composites and plastics. Manufactured in commercial volumes in ISO 9001 compliant facilities, our materials have been proven effective in all composites and plastics manufacturing processes. Our Advanced Materials are customizable to meet many types of requirements and are available in four product families: Nickel CVD Coated Fibers, Nickel CVD Coated Nonwovens, Nanostrands, and Integrated Products.



MATERIALS OVERVIEW

A wide range of materials are available from our advanced process to address many types of customer needs.

NiCVD COATED FIBERS: Our coated fibers can be used in all applications where carbon, aramid or other fibers are used, but with the additional performance advantages of electrical conductivity and electromagnetic shielding. Our CVD coated fibers are available in tow, braid, cloth, and converted formats.

• **NiFiber:** Nickel coated carbon fibers provide high stiffness, high tensile strength, low density, high chemical resistance, high temperature tolerance, and low thermal expansion in a highly conductive fiber format.

• **NiAram:** Nickel coated aramid fibers are high strength, heat-resistant synthetic fibers which present an ultimate combination of low density, high strength, toughness, and high conductivity.

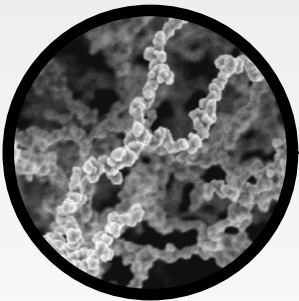
• **CutFiber (chopped & sized staple):** Our chopped/sized conductive fiber staple is available with a wide range of nickel coating levels and sizing chemistries in lengths from 24mm to 6mm. This format is primarily used as a high performance structural and conductive additive for thermosets & thermoplastics, and is also used in conductive nonwovens.

• **Precision Converted Fiber (PCF):** Precision converted nickel coated fiber is a highly uniform short fiber format in lengths from 2mm to 100µm. With a wide range of available nickel coating levels and sizing chemistries, this high uniformity conductive short fiber format is perfectly suited for conductive gaskets, elastomers, sealants, adhesives, and paints.



CONDUCTIVE NONWOVEN

- Highly conductive
- Lightweight
- Ductile, uniform coating over fiber & binder
- Corrosion resistant
- Multifunctional
- Low caliper
- Stable conductivity when infused
- Magnetic



NANOSTRANDS

- Highly conductive
- 3D Structure
- Interconnected & Branched
- Low Loading Levels
- Magnetic
- Corrosion Resistant

MATERIALS OVERVIEW CONT'D

NiCVD COATED NONWOVENS: Conductive Composites uses a unique and proprietary reel-to-reel Chemical Vapor Deposition (CVD) process to place a continuous ductile conductive coating over every surface of a finished nonwoven, including fibers and binders. Traditional nonwovens are produced by chopping and binding conductive fibers, with corresponding limitations in weight, caliper, and conductivity. Our CVD coated nonwovens are ultra-lightweight, robust, uniform, and highly conductive as a standalone component or when infused.

- **NiShield:** Our nonwoven can be used as a standalone self-supporting sheet, embedded in polymers (such as tapes or resins), or cured into composite surfaces / structures. High levels of electrical conductivity and broadband electromagnetic shielding can be inserted into applications at very attractive weight and cost points.

NANOSTRANDS: Nickel nanostrands are a new three-dimensionally structured material format that provides higher levels of electrical conductivity with less weight and loading than traditional materials (such as metal flake, spheres, graphite or coated glass). Our CVD process creates three-dimensionally interconnecting and branched nanostrand structures, which are very effective at imparting electrical conductivity and electromagnetic shielding into mixtures and composites at low loading levels. Nanostrands solutions are tailored to fit specific needs, with typical loading ranging from 2% to 20% by volume. Mixtures made with nanostrands exhibit higher conductivity at lower volume fraction of conductor than other conductive materials. Nanostrands are also inherently ferromagnetic and corrosion resistant.

Integration Products: Conductive Composites develops and delivers ready to use integration products that fully utilize the advantageous properties of our unique materials, including: paints, sealants, adhesives, resins, prepregs, coating systems, and more. Our integrated products are intended to be used in primary and secondary manufacturing processes. Our advanced materials are also used in additive manufacturing, specialty construction, and other assembly and integration applications.



MADE IN USA