Carbon Nanotube Composite for Biomedical Applications

ID: 2012-061

Executive Statement:

A novel carbon nanotube composite technology aimed at enhancing the performance and biocompatibility of cardiovascular stents.

Technology Overview:

This technology involves the creation of carbon nanotube arrays infiltrated with various materials such as pyrolytic carbon, polymers, or magnesium. Designed to improve biomedical devices, its primary focus is on cardiovascular stents, offering solutions to common complications like restenosis and thrombosis. The unique fabrication process allows for precise control over the stent's dimensions and material properties, setting it apart from current market offerings.

Key Advantages:

- Enhanced biocompatibility reducing the risk of restenosis and thrombosis
- Fine control over dimensions and material properties for customized applications
- Versatility in material infiltration (pyrolytic carbon, polymers, magnesium) for various needs
- Potential for broader biomedical device applications beyond stents

Problems Addressed:

- Reduction in the occurrence of restenosis and thrombosis in coronary stents
- Lack of customizability and adaptability in existing stent technologies
- Limitations in biocompatibility of current cardiovascular stents

Market Applications:

- Cardiovascular stents for hospitals and medical device companies
- Biomedical devices requiring enhanced biocompatibility and precision in design
- Research and development in advanced materials for medical applications