



Nanotechnology Consulting | Product Development

[Glonatech S.A.](#) White Paper
We deliver our services in order to help you grow your business



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Carbon Nanotubes benefits and expertise requirements for their exploitation

Carbon nanotubes (CNTs) are allotropes of carbon, with dimensions belonging in the nanoscale. Their special nature endows them with a unique combination of exceptional electrical, mechanical, thermal and other special properties, which can be imparted to a variety of conventional materials, such as plastics, for boosting their performance in a variety of applications, such as electronics, automotive, coatings and sports composites.

Translating the knowledge of CNTs technology into a viable commercial industry poses a major challenge. Several end users have attempted to use carbon nanotubes, but they did not manage to obtain the superior properties they can bring, due to not only the lack of understanding on the relationship between carbon nanotube types and the resulting properties (electronic, mechanical etc.) but also due to the lack of knowledge on how to handle them.

Thus, the use of carbon nanotubes for improving the properties of end products requires specialized knowledge and experience. A demand for expertise rises not only with relation to the selection of the proper type of carbon nanotubes, but also to their incorporation in existing manufacturing processes, in order to fully exploit their beneficial attributes. Our company, Glonatech S.A., tackles this problem with tailor-made solutions based on advanced R&D nanotechnology services, which are unique in the market.

Glonatech's R&D Services lead to Properties Enhancements

Glonatech provides novel R&D services for various [applications and products where CNTs can be efficiently used as additives](#). In this way, key-players in numerous industrial sectors are able not only to improve their existing products, by incorporating our CNTs technology to their existing manufacturing processes, but also successfully develop the products they have



envisioned. By embracing new opportunities, they will be able to expand their products' portfolio in order to attract more customers and to further grow their business.

The long-established know-how of our scientific team imparts numerous competitive advantages to materials for a variety of industrial sectors. Our rigorous [R&D services](#) can ensure astonishing improvements in the following functionalities.

- ✓ **Mechanical properties**, including increase in tensile strength and impact resistance
- ✓ **Thermal properties**, including reduction in fire growth rate (ideal for firefighters clothing and accessories)
- ✓ **Electrical properties**, including the tailoring of electrical conductivity (ideal for conductive adhesives, electrically conductive and antistatic films)
- ✓ **Surface properties**, including attainment of **hydrophobicity** and **fouling release** effect (e.g. marine coatings), **anti-icing behavior** (e.g. aviation topcoats), **reduced roughness, anti-stickiness** and **antimicrobial performance**.
- ✓ **UV Blocking - Oxygen barrier**
- ✓ **Health and damage monitoring/sensing** capability
- ✓ **Anti-corrosion properties**

A representative list of products for which Glonatech can undertake R&D services toward product development with guaranteed performance is:

- Coatings for the [marine](#), **automotive** and [aviation](#) industry
- Composites for the **electronics, cables, transportation, packaging** and **construction** industries
- Lightweight materials for **sports** (i.e. tennis rackets, baseball bats, helmets etc.) and **industrial textiles**
- **Agricultural** films
- **Structure components** for buildings
- **Protective** coatings



If you are interested in entering into new markets and realizing advanced materials that exhibit the aforementioned properties or even multifunctionality, Glonatech is the right partner to help you design and develop innovative products with sustainable features and competitive advantages in the worldwide market, such as performance robustness, fast market adoption and cost-effectiveness.

Our goal is to build relationships based on trust and towards this direction we continually refine our understanding of our customers' requirements, in order to be able to deliver them the best results.

Materials we are processing

Our carbon nanotubes are efficiently dispersed in a variety of thermoplastic and thermosetting polymers (PP, PE, PC, ABS, PLA, epoxy, elastomers etc.), employing the proprietary and exceptional methodologies that Glonatech's team has generated, thus leading to the successful development of nanotechnology-based products with the above-mentioned properties that are unique in the global market.

Glonatech's R&D Services: Analyze – Plan – Research - Develop

Glonatech S.A. provides robust solutions to the aforementioned challenge by delivering customized products that are designed according to the needs of the customer. In order to achieve this kind of flexibility our products are able to adapt to the specifications provided by the customers. More specifically, Glonatech is active in:

- The manufacturing and commercialization of multi-wall carbon nanotube-based raw and intermediate products
- Advanced R&D and consulting services to end users of various industrial sectors, towards the development of high-tech final products with exceptional properties that are based on the company's multi-wall carbon nanotubes (MWCNTs). The aim of Glonatech's R&D services is to improve the performance and robustness of new industrial products, as



well as creating innovative materials that enhance the competitive advantage of companies in the global market.

Glonatech's R&D services include technical advice for improving existing consumer and industrial products as well as support for realizing them with the use of nanotechnology. Glonatech has successfully developed a variety of such novel products for numerous partners worldwide. Our procedure encompasses the following steps:

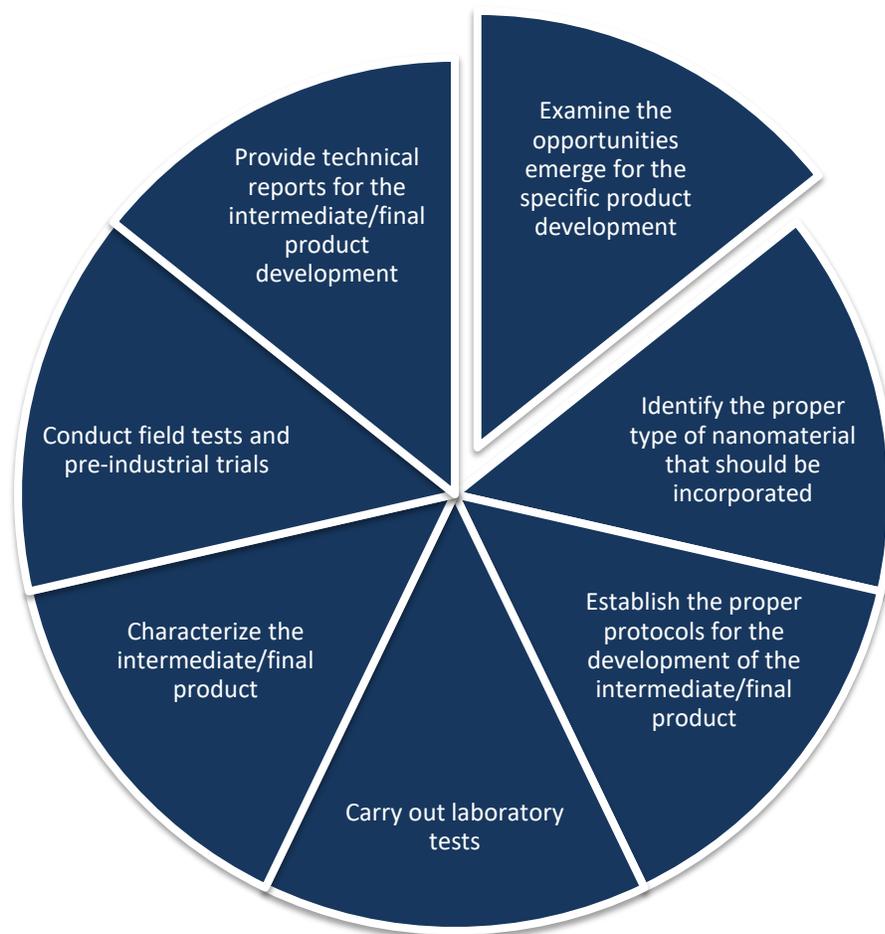


Figure 1: Analyze – Plan – Research – Develop circle of R&D Services and solutions provided by Glonatech S.A.



Glonatech: Key-Point Benefits

Glonatech possesses a unique place in the global market due the competitive advantages offered by its technology that has led our team to the successful development of a variety of novel products for numerous partners worldwide. More specifically:

- Glonatech is able to deliver application specific materials, with enhanced level of properties repeatability that stems from our proprietary and reliable methods for manufacturing carbon nanotube-based products.
- The unique quality & properties of Glonatech’s multi walled carbon nanotubes have been certified by two renowned independent institutes, the National Center for Scientific Research “Demokritos”, Greece and the University of Bordeaux, France.
- Glonatech targets the establishment of a customer-centric relationship. Our company not only delivers custom made solutions to the customers interested in exploiting the superior properties of carbon nanotubes, but also keeps up with the ongoing market trends. Whenever necessary, it proceeds with optimizing its products properties in order to be able to deliver R&D solutions aligned with the customer’s needs.
- Glonatech possesses a team of experienced scientists that are aware of the state-of-the-art in novel applications and have long-standing experience in a variety of manufacturing technologies & advanced materials processing. As a consequence, Glonatech has the capability of assisting industrial key players in developing functional products that can place them in the top of the competition.
- Glonatech is participating in national or multi-national programs and research activities aiming at building upon a transnational network with complementary expertise, improving laboratory infrastructure and production facilities, gaining access to advanced characterization equipment and promoting human resources development, thus ensuring sustainability of our R&D operations.



- Another advantage of our offered R&D services is the low cost conveyed to the final products by the incorporation of the company's innovative multi-wall carbon nanotubes at low loadings (0.5-0.8% w/w).

Thank you for downloading our white paper about our advanced R&D services.

Take a look at our Services: [Click here](#)

For any questions or/and inquiries please feel free to email us at info@glonatech.com

ONEX Group team at: <http://www.onexcompany.com/>

