Graphene, 2D Materials and Carbon Nanotubes: Markets, Technologies and Opportunities 2016-2026

Description: Granular ten-year market forecasts, data-driven and quantitative application assessment, 40+ interview-based company profiles, revenue/investment/capacity by player, and more.

This report provides the most comprehensive and authoritative view of the topic, giving detailed ten-year market forecasts segmented by application and material type. The market forecasts are given in tonnage and value at the material level. Furthermore, this report includes compressive interview-based profiles of all the key players the industry, providing intelligence on the investment levels, expected future revenues, and the production capacity across the industry and by supplier. In addition, this report critically reviews all existing and emerging production process.

This report also gives detailed, fact-based and insightful analysis of all the existing and emerging target applications. For target applications, the report provides an assessment and/or forecast of the addressable markets, key trends and challenges, latest results and prototype/product launches, and insight on the market potential.

Unrivalled business intelligence and market insight

This report is based upon years of research and close engagement with the community of graphene and CNT producers, investors and users. In the past five years, we have interviewed and profiled almost all the graphene and carbon nanotube suppliers globally (>40), advised many investors and chemical companies on their graphene (and CNT) strategy, and guided many end-users.

In parallel to this, the author’s Research has organised seven international tradeshows and conferences on Graphene and 2D Materials. These commercial conferences have become the forum in which the latest innovations are announced and the latest products are launched. More importantly, they have become the premier international venue in which suppliers and users directly connect. This has given us an unrivalled access to all the players across the graphene/CNT community.

Analysts also travel the world extensively to attend and lecture at all the conferences and tradeshows relevant to graphene and CNTs, giving us further opportunity to get to know the industry well, and hear and interpret the latest developments. We are confident that our knowledge and insight into the technologies, markets and applications of graphene and 2D materials is without parallel the world over.

The graphene market to reach 3, 800 tonnes per year in 2026

Research projects that the graphene market will grow to $220m in 2026. This forecast is at the material level and does not count the value of graphene-enabled products. In many instances graphene is only an additive with low wt% values.

A continual decline in average sales prices will accompany the revenue growth, meaning that volume sales will reach nearly 3.8 k tpa (tonnes per annum) in 2026. Despite this, the authors forecasts suggest that the industry will remain in a state of over-capacity until 2021 beyond which time new capacity will need to be installed. Furthermore, Research forecasts that nearly 90% of the market value will go to graphene platelets (vs. sheets) in 2026.

The market will be segmented across many applications, reflecting the diverse properties of graphene. In general, we expect functional inks and coatings to reach the market earlier. This is a trend that we forecasted several years ago and is now observed in prototypes and small-volume applications. Indeed, Research projects that the market for functional inks and coatings will make up 21% of the market by 2018. Ultimately however, energy storage and composites will grow to be the largest sectors, controlling 25% and 40% of the market in 2026, respectively.

What this report provides:
1. Ten-year market forecasts for graphene and CNTs segmented by material type and application (by volume and value).

2. Investment, capacity and revenue by company.

3. Interview-based company profiles of 50 graphene and CNT companies.

4. Benchmarking of suppliers on the basis of technology readiness and medium-term commercial opportunity.

5. Market trends and dynamics including:
   a. Go-to-market strategy
   b. Prices and pricing strategy
   c. Product qualities and morphologies
   d. Consistency and quality issues
   e. Intermediary challenges
   f. Current and expected product launches
   g. Application timeline

6. Overview of the multi-walled carbon nanotube industry including:
   a. Production capacity by supplier
   b. Current applications and forecast application pipeline
   c. Segmented ten-year market projections
   d. Benchmarking and mapping key players

7. Detailed overview of production methods including:
   a. Oxidisation-reduction
   b. Direct liquid phase exfoliation
   c. Electrochemical exfoliation
   d. Plasma exfoliation
   e. Substrate-less plasma or CVD growth
   f. CVD growth of graphene sheets
   g. Epitaxial

8. Detailed application assessment often including the authors insight and assessment, state-of-the-art and commercial progress, analysis of competing technologies, pricing trends, addressable market size, and ten-year market projections for:
   a. Transparent conducting films
   b. Functional inks and pairs
   c. RFID antennas
   d. Anti-corrosion coatings
   e. Supercapacitors
   f. Silicon anode
   g. Li sulphur
   h. Li ion and other battery technologies
   i. Conductive, thermal, permeation or mechanically-enhanced composites
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