

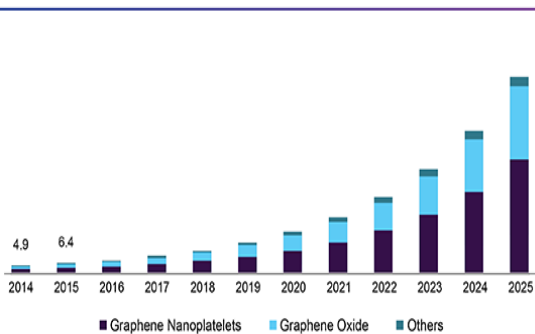
## Market Analysis

Graphene is the world's thinnest and strongest material with high thermal and electrical conductivity. These characteristics coupled with other properties including high permeability and high electron mobility have resulted in creating a huge interest in this material and its applications.

3D printing or additive manufacturing is a process of making solid objects in three dimensions from a digital file. An object is created in an additive process by setting up successive layers of material until the object is formed. Each of these layers can be interpreted as a thinly sliced horizontal cross-section of the object. With rapid progress in product compositions, such as polymers and metals, additive manufacturing technology is evolving from being a prototyping tool to a functional part of fabrication.

The global graphene market size was estimated at USD 42.8 million in 2017 and is projected to witness a CAGR of 38.0% from 2017 to 2025. Increasing demand for lightweight and durable materials for manufacturing various components including composites is expected to fuel the product demand over the forecast period.

U.S. graphene market size, by product, 2014 - 2025 (USD Million)



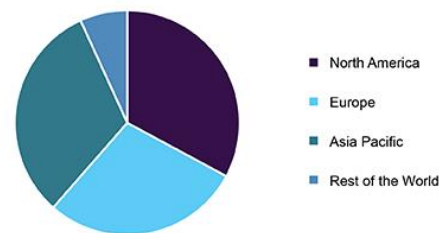
North America led, in terms of revenue, with a 32.8% market share in 2017. Presence of numerous manufacturers with strong research and development capabilities is likely to develop new growth opportunities over the years to come.

Asia Pacific is expected to witness the fastest growth in demand over the forecast period. Booming electronics sector has been a major factor propelling the regional product demand. Moreover, increasing investments in renewable power generation sector are expected to surge the demand in near future.

China is expected to emerge as a promising market

over the forecast period in light of favorable government support to promote investments in the manufacturing sector. The government of China has put forward strong policies to ensure support for research and development. The government has established a graphene national park, which is contributing to increasing the production volume of the material in the region.

Global graphene market share, by region, 2017 (%)



The decreased prices of additive manufacturing-based machines, coupled with growing expertise and awareness, have increased the availability and demand for this technology and the growing demand for lightweight, fast, and fuel-efficient vehicles in countries, such as Germany, Japan, and China, has fueled the growth of the metal additive manufacturing sector.