



Graphene – the “miracle” substance of nanotechnology – could be used in the aerospace industry, in solar cells, and even to replace batteries in next-generation vehicles and consumer electronics. These ideas, however, depend on the creation of a large-scale, sustainable and cost-effective production process.

Durham University’s Karl Coleman found existing production methods to be costly, time consuming and environmentally unfriendly, and so he took up the challenge of developing a clean and scalable alternative. Eschewing graphite – the finite resource on which previous methods relied – he opted to build graphene from the bottom up.

When he pitched his discovery to Durham University’s Business and Innovation Services, it immediately recognised the potential and the spin-off company Durham Graphene Science (DGS) was established in 2010.

Two years on, DGS and Dr. Coleman are central to a market that is projected to be worth more than £400 million by 2020, and their contribution has been recognised throughout the industry.

Chris Cobb, chief operating officer and university secretary at the University of London and one of the judges, said the exceptional electrical, mechanical and thermal properties of graphene made it an ideal material. “But its lack of availability is beginning to hamper new developments. Durham’s approach to the production of synthetic graphene will have a major impact on manufacturing and allied industries, as well as on research disciplines. It is difficult to overstate the significance of this innovation.”