

# High Conductive Pristine Graphene Industrialisation

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In this century, the importance of Graphene in industrial applications cannot be overstated. To achieve deep decarbonisation and avoid exceeding the 1.5°C climate target, we may need to remove 100 to 1,000 gigatonnes of CO<sub>2</sub>. Carbon Nanomaterials and nanotechnology are playing a key role in this. With its unique properties, Graphene has found applications in numerous industrial sectors. Their impermeable and conductive nature can replace currently used anti-corrosive, toxic pigments in coating systems. Graphene can be a crucial component as a next-generation additive for many industrial applications. The current challenges lie in the availability of cost-effective, high-quality materials and their effective incorporation into the product matrices using nanotechnology (1, 2).

On overcoming these factors, Graphene may attract significant demands regarding volume consumption. With CAMI patent-licensed technology, Graph Nova Graphene can be produced on industrial scales and cost-effective top-down routes such as high-pressure mechanical, non-acid chemical or organic solvents, and electrochemical exfoliation. Depending on end applications, Graphene can be chemically tuned and modified via functionalisation to incorporate into product matrices easily. This talk discusses different Graphene industrialisation in real-world Products and their impact on the quality of Graphene produced in terms of energy input. A few methods made Graphene with an average thickness below five layers, with the lowest defects. However, the mechanical exfoliation route produced a higher yield of Graphene with fewer layers. Graphene plays a key role in Anti-corrosion and hydrogen transportation. The talk will address the commercial Graphene development and applications in Coating, Lubricants, Concrete and Li Battery applications.

**Keywords:** Graphene industrial scale-up production, Anti-Corrosion with Graphene Al Alloy protective coating, Hydrogen transportation Pipe coating, Li Battery graphene additive..

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## References

- 1) Graphene against corrosion. S. Bohm, Nat Nano, 2014. 9(10): p. 741-742.
- 2) Graphene production via Cracking, Philosophical Transactions R. Soc. A379: 20200293 (2021).



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