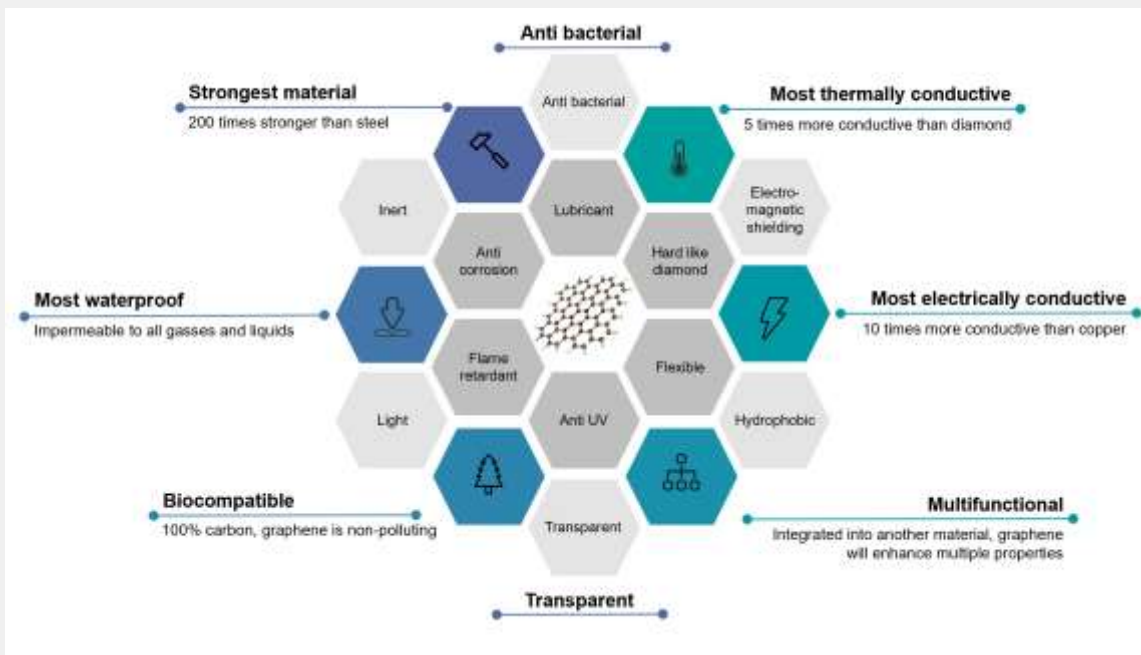


WELCOME to
BiZBOOSTING

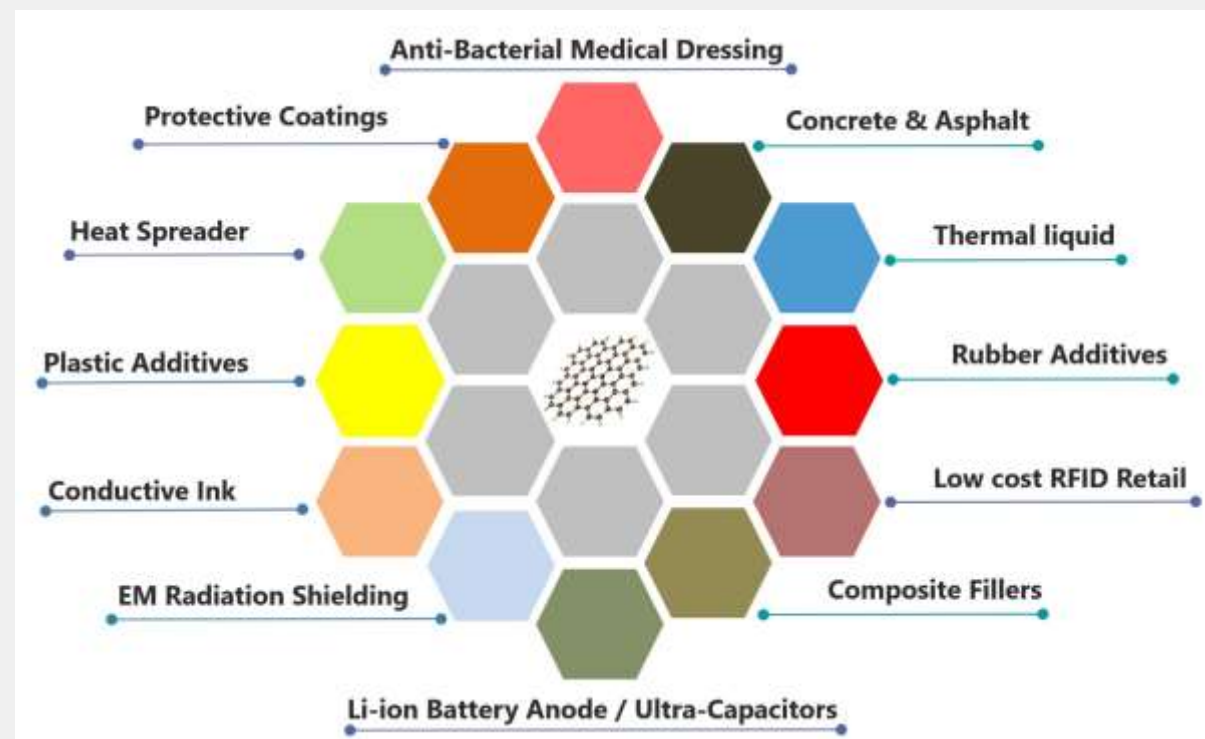
BiZBOOSTING can help you
creating New Disruptive Products
with **GRAPHENE GNP**

What are **GRAPHENE** properties?



Graphene is an amazing nanomaterial that we are just starting to discover, but has many usages and will rapidly be part of all aspects of our lives.

What can we do with **GRAPHENE** ?



Graphene has several applications in construction, polymers, tyres, medicine, agriculture, batteries, supra-conductivity, and so many others that still need to be discovered.

Every company has no other choice than to try understanding how it could fit into their product lines or even open up new opportunities.

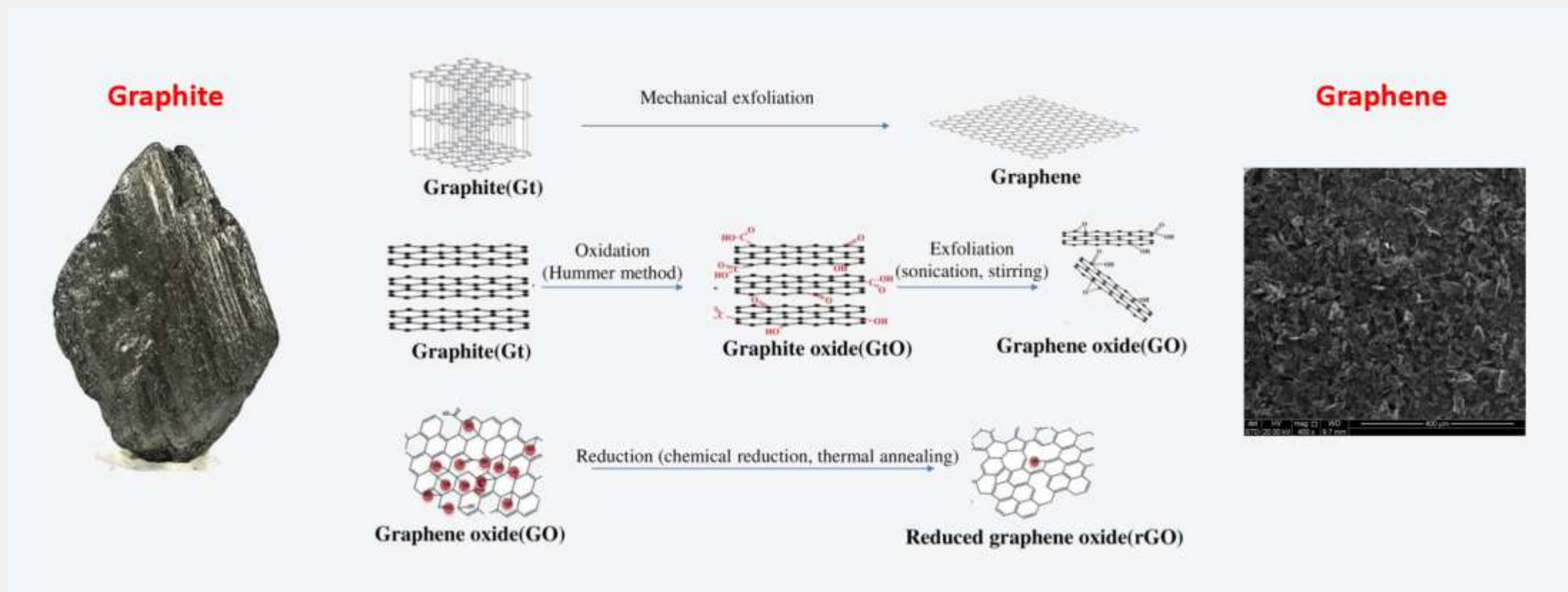
*What are the advantages of **GRAPHENE** ?*

The potential is almost limit-less

- Mobile phones or car batteries can be recharged in minutes
- Unbreakable glass ... on your phone or tablet (you can bend the screen)
- Polymers become stronger, stiffer, tougher, conductive and flame retardant
- Glass that weighs a fraction of existing glass, stronger and conductive
- Automotive tires that last twice as long and are even bulletproof (for army)
- Much stronger and flexible concrete, remaining waterproof and protecting steel
- Supra-conductivity for high power cables
- Much better lubricants, increasing engines efficiency
- Food and agriculture sectors, with nanosensors, nanopesticides and nanofertilizers
- Etc...

How is **GRAPHENE** made?

Graphene **GNP** (**N**ano-**P**latelets) is a form of carbon consisting of planar sheets which are 1-5 atoms thick, with the atoms arranged in a honeycomb-shaped lattice.



Making use of Graphene and its amazing properties is a real challenge, but companies have no other choice than innovating continuously.

Few corporations have the resources, skills and time to perform research with **Graphene**; the duration is unpredictable without appropriate means, with random results and costly.

It is why customers are asking **BiZBOOSTING** to provide technical support from its close partner **CSI**, having access to a large network of top experts and laboratories.

With **CSI** R&D Services, companies have the choice of different alternatives:

- Performing its own in-house research with on-site support of **CSI**
- Outsourcing completely R&D to **CSI** with well defined goals
- Asking **CSI** advice on specific tasks without investing in costly equipment
- Checking the real quality of products with objective point of view

*How to use **GRAPHENE** ?*



- **BiZBOOSTING** is working closely with **CSI** in order to find the best solutions
- Graphene GNP must be dispersed with other materials, to achieve increased performance measures across a wide range of attributes
- It is an additive as opposed to a substitute
- The trick is to functionalize it - making it fit for purpose so it combines successfully
- Usually need $< 1\%$ GRAPHENE by weight, sometimes even below 0.05%
- Comes in powder form, dispersed in a solvent or other powder, or as sheets
- One of the **KEY** issues is the dispersion, for which **BiZBOOSTING** can bring expertise with its **CSI** & Partners, helping to reduce GNP load ($< 0.1\%$)
- **CSI** has an extensive network with Bulgarian chemists, amongst the best in the World, providing high quality services at attractive price.

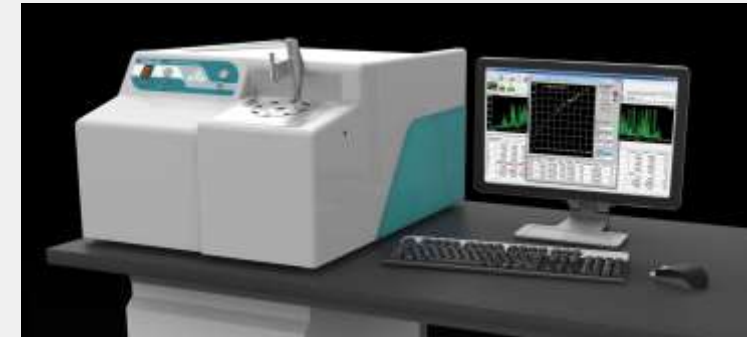
CSI and Partners are equipped with state-of-the-art equipment, such as:



Electron microscope



High field NMR



Various spectrometers



Chromatographs



Pilot plants



Lab extruder

CSI is the best target for your research capacity, especially for:

- Short-medium length projects (6-12 months) with well-defined targets and without the need for advanced know-how. This will guarantee that useful results are obtained, and that the start-up time is minimised.
- Research work that is labour-intensive as well as brain-intensive, like collection of large amount of key data requiring skilled workers, where cost saving is the largest.
- Short-term feasibility studies (1-6 months), to try out new ideas that your present R&D organisation does not have the resources or skills to justify investment.

BiZBOOSTING** is covering the FULL value chain of **GRAPHENE



BizBoosting and **CSI** have established close agreement with the best suppliers for:

- Pure and functionalized GNP of various sizes
- GO (Graphene Oxide)
- rGO (Reduced Graphene Oxide)
- Graphene dispersions in various solvents (IPA, NMP, .), solids (TiO₂, SiO₂, .) and polymers
- Other possibilities on request, like R&D and industrialization support
- **CSI** & Partners can provide laboratory services with advanced equipment (Raman, Electron Microscope, etc)
- Network of high qualified and skilled chemical engineers

How SAFE is GRAPHENE ?

Safety Assessment of Graphene - Focus on Human Health and Environment

Advanced studies have shown that Graphene GNP is SAFE for humans, but should not be inhaled (protective mask and gloves mandatory while manipulating powder):

<https://pubs.acs.org/doi/abs/10.1021/acsnano.8b04758>

Warning:

This safety advice does NOT concern other forms of Nanoparticles like Nanotubes, Fullerenes, etc, which are generally toxic.

Studies must be made for each different case.

*Some examples of products made with **GRAPHENE***

Ford to use graphene-reinforced parts in cars

<https://nano-magazine.com/news/2018/10/9/ford-to-use-graphene-reinforced-parts-in-cars>

Ultrahigh Performance Nanoengineered Graphene–Concrete Composites for Multifunctional Applications

<https://onlinelibrary.wiley.com/doi/10.1002/adfm.201705183>

Graphene Makes Rubber Bands 200x Stronger Than Steel

<https://uk.pcmag.com/news-analysis/90967/graphene-makes-rubber-bands-200x-stronger-than-steel>

Understanding Graphene Batteries

<https://www.azonano.com/article.aspx?ArticleID=4326>

Graphene Coatings: Exciting Properties and Wide-Ranging Potential

<https://www.paint.org/article/graphene-coatings-exciting-properties-and-wide-ranging-potential>

Application of nanotechnology in food and agriculture

<https://www.sciencedirect.com/science/article/pii/S102194981830173X>

*Some examples of products made with **GRAPHENE***

Manchester U team makes headway in using GO membranes to turn saltwater into drinking water

<https://www.graphene-info.com/manchester-u-team-makes-headway-using-go-membranes-turn-saltwater-drinking-water>

Faster raquet, faster game.

<https://www.head.com/en-IC/sports/tennis/technology/graphene-xt/>

Graphene Motorcycle Helmet Launched by Flagship Partner IIT and Momodesign

<https://graphene-flagship.eu/graphene-motorcycle-helmet>



<https://goo.gl/UUBdJ7>

Construction, Airplane and automotive industries are going to be amongst the main users due to the light weight and strengths brought by nanomaterials.



<https://goo.gl/QYctP6>

***Biz*Boosting and GRAPHENE**

We can accompany your **GRAPHENE** journey by:

- Defining together how to use Graphene for which of your products
- Providing the best material and attractive price
- Choosing the most appropriate suppliers for your needs
- Ensure that the suppliers can provide good quality and needed quantities
- Bring consultancy services, eventually from suppliers as well
- **CSI** can provide advanced R&D services and advices on products or production methodologies

BiZBOOSTING and **CSI** remain your reliable partner during your journey



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Thank you

We welcome your
questions