
SLINTEC to Drive Export Revenue for Sri Lanka through Graphene-based Products

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The Sri Lanka Institute of Nanotechnology (SLINTEC), the first public-private research institute in Sri Lanka and a pioneer in Nano and advanced technology research in the country, has broken new ground once again in another pioneering venture, that of conceptualising and creating some remarkable products incorporating graphene, a material that for the past decades has been primarily hidden away in research labs and termed as the “Wonder Material”.

Graphene has been witnessing a surge of interest among the investment community of its commercialisation avenues. This stems from Graphene being two hundred times stronger compared to steel and incredibly flexible, having much promise for anti-corrosion coatings and paints, efficient and precise sensors, faster and efficient electronics, flexible displays, efficient solar panels, composite materials with applications in automobile, defence and aerospace industries, high strength concrete, renewable energy storage battery anode material, high capacity supercapacitors etc. The global market value of graphene is expected to reach \$ 1 billion by 2027.

[SLINTEC](#) Chief Executive Officer Dr. Nareshkumar B. Handagama said: “Sri Lankan vein graphite is the best material to commercially process graphene from, while the island is also the only commercial producer of vein graphite, with the highest purity graphite with a carbon content of 97-99.5%.

“[Sri Lanka](#) could very much lead the charge in terms of graphene-integrated commodities that could revolutionise our way of life. As such, SLINTEC has pioneered processes to convert graphite to graphene and commercialise the products.”

SLINTEC having created an economically viable patented method to process Graphene at one of the lowest processing costs in the world, has already set up a joint venture with Ceylon Graphene Technologies Ltd. ([CGTL](#)) to mass manufacture graphene for the global demand adding value to local mineral Graphite, where CGTL has already commenced supplying to

clients in [USA](#) and some EU countries.

Currently a 'modular plant' with an investment of over \$ 2 million has been set up at SLINTEC Technology Incubation Centre with capacity to expand. Further commercialisations in this area are anticipated with potential Joint Ventures.

The further line-up of projects involving graphene is testing custom-tailored material for anodes in order to conduct battery components tests. Dr. Handagama explained that "the goal is to make very efficient batteries with local graphite." The potential is immense in the area of renewable energy storage battery applications.

World's first Graphene-based Lead-acid battery has also been developed by SLINTEC together with Associated Battery Manufacturers' (ABM) Exide Battery targeting the automobile battery market. This graphene-based battery has a significant life cycle improvement.

SLINTEC's work with graphene has also proven to be highly beneficial for a sensor integrated face mask, developed in collaboration with CirQ Labs; a high-tech innovation hub specialising in healthcare solutions and the Hirdaramani Group. Titled BreathTech-S³, this smart mask has a sensor that measures breathing rate, fit, and carbon dioxide build-up while providing alerts via the app, warning the wearer of potential risk markers.

Another is the graphene supercapacitors, a device used to store energy in large quantities, minus the weight and bulk of the non-graphene types. "There's a huge demand nationally and internationally for these high-capacity capacitors. If you combine these two high-efficient capacitors and storage devices, you can cater to any power supply," explained Dr. Handagama.

SLINTEC conducts research primarily on; energy, printed electronics and sensors, minerals and composites, rubbers, plastics and novel polymers, textile materials and processing technology, advanced agricultural technology. It has currently partnered with the Ministry of Technology and private sector institutes that include MAS Holdings, Brandix Lanka Ltd., Browns PLC, Camso Loadstar Ltd., Dialog Axiata, Hayleys PLC, Lankem Ceylon PLC and LOLC PLC.

SLINTEC aims to bring to market, a range of homegrown solutions utilising graphene, driving revenue and paving the way for [Sri Lanka](#) to take the lead as one of the key exporters of graphene-based products, and to position SLINTEC as a top research and development hub in the region.

Read the [original article](#) on Daily FT.