



First Graphene Signs JDA with Suvo Strategic Minerals for Low-emission Cement and Concrete

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First Graphene Limited has entered into a joint development agreement (JDA) with fellow ASX-listed company Suvo Strategic Minerals Limited, to research and develop low emission cement and concrete products.

The agreement aims to investigate the potential for further improvements in CO₂ emission reductions by combining the already successful outcomes achieved from the addition of graphene to cement and concrete with Suvo's metakaolin (a pozzolanic material derived from fine kaolinite clay that can be used as a partial replacement for clinker in cement) to deliver strength and performance improvements to concrete and mortar products.

Clinker is the key binding agent in cement and is a key contributor to the industry's significant carbon footprint. This is due to the clinker manufacturing process, which involves roasting calcium carbonate materials at extremely high temperatures, with CO₂ being a major byproduct. Depending on a range of factors, for every ton of cement manufactured, up to 900kg of CO₂ can be produced.

While the metakaolin manufacturing process still involves calcination, it is carried out at much lower temperatures without any significant CO₂ emissions. Like graphene, metakaolin has been found to provide superior performance benefits in cement and concrete applications but it is susceptible to degradation in some instances, including exposure to high temperatures. Research has shown that graphene-enhanced metakaolin can provide far superior performance under a broader range of conditions.

By combining the two products in a single formulation, synergistic performance benefits, such as accelerated OPC hydration, early hardness development and durability, are expected at reduced clinker amounts.

The joint development being undertaken between [First Graphene](#) and [Suvo](#) intends to identify opportunities for commercialization and scaling up of graphene-enhanced metakaolin solutions for use in cement and concrete products.

Under the terms of the agreement, First Graphene will provide R&D services, co-develop a research and development plan to produce graphene-enhanced solutions with Suvo, and ultimately focus on scaling up production of the resulting solutions.

Suvo will take responsibility for testing and validation of graphene-enhanced metakaolin products and provision of market data to enable the scale up of production.

First Graphene Managing Director and CEO, Michael Bell, said: “This JDA marks another step in First Graphene’s pursuit of greener solutions for the construction sector. Building on the success we have already demonstrated and are actively commercializing by developing PureGRAPH® enhanced admixtures and grinding aids to reduce CO2 emissions and improve performance in cement and concrete, the agreement with Suvo provides a potential path to realizing even greater improvements. The combination of First Graphene and Suvo’s products, coupled with the strength of our combined R&D capabilities and engagement with global markets, offers significant potential to develop even more robust solutions to help the cement and concrete sectors reduce and ultimately eliminate carbon emissions.”

Suvo Executive Chairman, Henk Ludik, said: “This is an exciting opportunity for Suvo and First Graphene to develop superior solutions that are better for the planet. Both companies share a common philosophy of investing in R&D that offers the potential for large-scale, successful commercial outcomes and we go into this JDA with some very clear common goals to address the cement and concrete sectors’ carbon reduction objectives. More than 4 billion tonnes of cement is manufactured each year – which equates to enough to build a city the size of New York every 40 days – so there’s a sizeable market and a big emission reduction target to address.”

Read the [original article](#) on Graphene Info.

