

NMB AND CIMA FORMALISE STRATEGIC PARTNERSHIP TO DEVELOP MALAYSIA'S FIRST LOW-CARBON, GRAPHENE-ENHANCED CONCRETE

KUALA LUMPUR, 19 June 2025 — NMB (NanoMalaysia Berhad), a CLBG under the Ministry of Science, Technology and Innovation (MOSTI), and Cement Industries of Malaysia Berhad (CIMA), a wholly-owned subsidiary of UEM Group Berhad, today announced the signing of a strategic partnership to drive the development of Graphene Enhanced Concrete – a groundbreaking sustainable building material locking in solid carbon derived from greenhouse gas atmospheric emission, aimed at transforming Malaysia's construction industry by addressing critical environmental and performance challenges.

This partnership aims to pioneer the integration of nanotechnology into the construction industry, focusing on delivering concrete solutions that not only meet but exceed all key technical performance criteria. By advancing innovation in materials science, it is foreseen that the development of a new generation of green and sustainable concrete will be designed to support long-term environmental goals while elevating industry standards.

Currently at Technology Readiness Level 3 (TRL 3), the project is advancing toward TRL 5 through collaborative efforts involving formulation development, performance optimisation, and cost-benefit analysis. CIMA not only serves as the technology recipient but also provides real-world insights throughout the research process, ensuring practical application and industry relevance. Universiti Teknologi PETRONAS (UTP) is supporting the project with specialised research expertise.

NMB Group's Chief Executive Officer (CEO), Dr Rezal Khairi Ahmad, said: "This collaboration with CIMA reinforces our commitment to bridging nanotechnology and sustainable construction. Graphene-enhanced concrete offers distinct advantages in reducing the carbon footprint of Malaysia's infrastructure sector through capturing solid carbon processed from polluting gaseous emissions, while providing next-generation building materials that are stronger, more durable, and environmentally responsible. Ultimately, our goal is to catalyse adoption across key sectors such as ready-mix concrete, roadworks, and smart urban developments, positioning Malaysia at the forefront of green construction innovation based on this unique carbon capture approach."

Market forecasts highlight the technology's potential, with the Asia-Pacific segment expected to grow from USD 6.1 million in 2020 to USD 18.8 million by 2025 and reach USD 54.9 million by 2030. Rising demand for eco-friendly materials in urban and smart city projects underpins this growth.

Hairol Azizi Tajudin, Managing Director of CIMA, said: "As Malaysia's leading cement and concrete producer, we are proud to lead the way in sustainable construction and innovative solutions. This partnership reflects a continuation in our unwavering commitment to advancing low-carbon technologies and supporting Malaysia's ambition to achieve carbon neutrality by 2050. Through initiatives like this, we aim not only to meet the evolving demands of our industry but also to champion environmental responsibility, in line with global sustainability benchmarks."

While challenges such as the high cost of graphene derivatives and limited production scale exist, the project aims to overcome these through intellectual property development, technology localisation, and policy advocacy. The product will adhere to national standards

and environmental framework, including Malaysia's Low Carbon Cities Framework, Green Building Index (GBI), and ESG reporting frameworks.

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