



MEDIA RELEASE

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NMB Showcases Next-Generation Smart and Sustainability Technologies as Economic Growth Tools at MTE 2026

Kuala Lumpur, 14 April 2026 – NMB (NanoMalaysia Berhad) and its partners showcased four cutting-edge innovations at the 25th Malaysia Technology Expo (MTE) 2026 held at the World Trade Centre recently. The innovations were recognised under the International Innovation Awards category, securing one Gold Award for the Graphene-Coated Smart Thread, one Silver Award for NanoBooster Granule+, and two Bronze Awards for the Graphene-Enhanced Smart Insole System and the Wireless-Powered IoT Battery Water Level Sensor System for UPS.

Leading the showcase is the Graphene-Coated Smart Thread, developed in collaboration with Universiti Tunku Abdul Rahman (UTAR). This innovation transforms conventional textiles into intelligent sensing platforms capable of real-time human motion monitoring. Fabricated using a scalable and cost-effective dip-and-dry process, the graphene thread demonstrates high strain sensitivity, fast response times, and strong wash durability, making it suitable for integration into wearable healthcare and sports applications. The technology enables continuous monitoring without bulky external devices, marking a significant step forward in smart textile development.

Another key innovation is the Graphene-Enhanced Smart Insole System; a wearable solution designed for sports performance analysis and rehabilitation working closely with Sportrec Ventures Sdn Bhd for targeted market deployment. Incorporating a 15-point pressure sensing array and a 6-degree-of-freedom motion sensor, the system provides real-time gait analysis, load distribution insights, and activity classification with approximately 92% accuracy. By combining nanomaterials, flexible electronics, and embedded AI, the smart insole delivers data-driven insights to improve athletic performance, reduce injury risks, and support rehabilitation outcomes.

In addition, the Wireless-Powered IoT Battery Water Level Sensor System for UPS, developed in collaboration with a local SME namely Enhance Track Sdn. Bhd. and Institute of Sustainable Energy (ISE), Universiti Tenaga Nasional (UNITEN), was also showcased. This system leverages RF-based wireless power transfer and graphene-enhanced antenna reflectors to enable real-time battery monitoring without manual inspections. It improves power efficiency by up to 20% while reducing maintenance costs, safety risks, and environmental impact. Designed for industrial applications including energy, telecommunications, and smart infrastructure, the system supports predictive maintenance and enhances operational reliability.

In the area of sustainable agriculture, NMB also showcased NanoBooster Granule+, a nano-enabled soil conditioning technology designed to enhance paddy cultivation and support Malaysia's national food security agenda. The granule-based formulation improves nutrient retention and soil health by increasing pH balance and cation exchange capacity (CEC), while reducing application dosage by up to 30%. Integrated



with optional drone-based hyperspectral monitoring, the solution enables precision agriculture through real-time crop and soil analysis, helping farmers optimise nutrient management and improve yield potential. By enhancing soil fertility and input efficiency, NanoBooster Granule+ contributes to more resilient and sustainable rice production systems, aligning with national efforts to strengthen food security and modernise Malaysia's agricultural sector.

NMB Group Chief Executive Officer (CEO), Dr Rezal Khairi Ahmad, said, “Our participation in MTE 2026 reflects NMB’s continued commitment to translating advanced nanotechnology into impactful, real-world solutions. These local innovations demonstrate how local research and development through a Venture Builder triple-helix platform bridging lab to market can be effectively scaled to address key challenges across industries, from healthcare and mobility to agriculture and energy, while supporting Malaysia’s transition towards a more resilient, sustainable and technology-driven economy for greater equity in the global value and supply chains powered by a balanced of domestic and foreign investments.”

The participation underscores NMB’s role in advancing innovation ecosystems through strategic collaborations with academia and industry, while supporting Malaysia’s aspirations in sustainable development, digitalisation, and advanced materials.

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