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MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

PRESS RELEASE

MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

NANOMALAYSIA BERHAD AND NANOQUARTZ SIGNS MEMORANDUM OF UNDERSTANDING (MoU) WITH XMU JIAGENG EDUCATION DEVELOPMENT FOR COOPERATION IN BIOMASS INNOVATION CIRCULAR ECONOMY PROGRAMME (BICEP)

SEPANG, 16TH February 2023 – NanoMalaysia Berhad (NMB), Malaysia's leading agency in nanotechnology and advanced solutions commercialisation, today signed a Memorandum of Understanding (MoU) with NanoQuartz Sdn. Bhd. and XMU Jiageng Education Development Sdn. Bhd. to cooperate in the Biomass Innovation Circular Economy Programme (BICEP).

The objective of the MoU is to strengthen the progressive trilateral relationships and cooperation in the Biomass Innovation Circular Economy Programme (BICEP) between the Ministry of Science, Technology and Innovation (MOSTI), NanoMalaysia Berhad - as the leading agency for the commercialisation of nanotechnology and advanced solutions - and Xiamen University Malaysia - as a university dedicated to providing world-class research and teaching towards a new era of high value of biomass industry in the country.

Through this comprehensive collaboration, NanoMalaysia's project known as "Production of Graphene & Green Hydrogen Supply Chain from Biomethane" will enable the production of graphene and green hydrogen by cracking methane from agricultural waste using an advanced microwave plasma technology to support the downstream application ecosystem and fulfil manufacturers' rising demand in energy storage, energy conversion, catalysis, solar energy, and environmental protection activated in adjacent NanoMalaysia programmes and relevant sectoral initiatives.

Witnessing by YB Tuan Chang Lih Kang, the Minister of Science, Technology and Innovation of Malaysia, while the MoU was signed by Dr Rezal Khairi Ahmad, Chief Executive Officer of NanoMalaysia Berhad, Dr Daniel Bien,

Director of NanoQuartz Sdn. Bhd. and Professor Dr Wang Ruifang, the President of Xiamen University Malaysia. Dignitaries present for the occasion included Datuk Ts. Ir. Dr Hj Aminuddin Bin Hassim, Secretary General of MOSTI, Datuk Ts, Dr Mohd Nor Azman bin Hassan, Deputy Secretary General of MOSTI (Technology Development), Prof Emeritus Dato' Ir. Dr Mohamad Zawawi bin Ismail, Chairman of NanoMalaysia, Associate Professor Dr Zhang Ying, the Vice-President of Xiamen University Malaysia, Associate Professor Dr Ong Wee Jun, the Director of the Center of Excellence for NaNo Energy & Catalysis Technology (CONNECT), and Professor Dr Chen Binghui, the Dean of School of Energy and Chemical Engineering of Xiamen University Malaysia.

Speaking at the event, YB Tuan Chang Lih Kang said: "As transitioning towards a circular economy is one of the key agendas for Malaysia under the 12th Malaysia Plan and MOSTI's main 2023 initiatives to provide solutions for climate resilience, BICEP will spearhead the development of strategic technology and innovation by leading the commercialisation of "waste to wealth" valuable raw materials to become a leading biomass hub in the region."

"Considering Malaysia's status as the world's second-largest palm oil producer and the largest contributor to the biomass industry, Malaysia produces approximately 168 million tons of biomass, of which over 80 million tonnes are generated by the palm oil industry alone."

"The biomass industry has significant potential in the region, with the Asia-Pacific biomass power market expected to grow at a CAGR of 6.35% in terms of revenue and 6.22% in terms of volume from 2023 to 2030, acquiring a revenue share of RM226.07 billion by 2030," he added.

The MOSTI's Strategic Research Fund by the Implementing and Monitoring Agency (SRF-APP) is a specific top-down funding scheme programme for the development of Science, Technology, Innovation, and Economy in conformance with the National Science, Technology, and Innovation Policy (DSTIN).

The integration of the SRF-APP through BICEP aims to boost the impact of the SRF scheme by spearheading the government's initiatives to intensify the innovative green technology of biomass waste materials in Malaysia from agricultural sources for the production of valuable advanced nanomaterials such as graphene and energy-rich clean fuels such as hydrogen to meet the industry's demand for localisation of supply chains.

NanoMalaysia Berhad Chief Executive Officer Dr Rezal Khairi Ahmad said: "Under BICEP, we have various ongoing projects that use locally available

biomass to produce high-value nano-scale advanced materials with various industrial applications in healthcare, cosmeceuticals, construction, electronics and even energy storage sectors thus completing the local supply chain to support our NanoMalaysia Energy Storage Technology Initiative, Hydrogen EcoNanoMy and Enabling Mobility Electrification for Green Economy. Due to the lack of graphene supply locally, we are geared towards producing graphene and green hydrogen and eventually scaling up production for downstream products and applications. This collaboration is in line with the mandate outlined in the National Graphene Action Plan for developing a graphene ecosystem to transform Malaysia into a global player as our nanotechnology-based solutions will help us compete with other like-minded nations. The commercial interlinks between this programme and various industry players are facilitated by our Venture Builder Investment Model.”

Professor Dr Wang Ruifang, the President of Xiamen University Malaysia, said: "We are pleased to work with the Ministry of Science, Technology and Innovation of Malaysia and NanoMalaysia. This is an exciting opportunity for us to be involved in the research and development to help accelerate the innovation and commercialisation of these products and propel Malaysia towards becoming a high-end technology-producing nation."

This MoU also epitomises the government's commitment and efforts in enhancing and intensifying the research and development of advanced nanotechnology to encourage the university and the agency for the commercialisation of nanotechnology and progressive solutions in achieving their role and vision as components in dignifying Malaysia as the leading biomass and graphene hub in the international arena.

END

Prepared by

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BACKGROUND

Lynas Malaysia Sdn. Bhd. is a company owned by Lynas Corporation Ltd., Australia (Lynas Australia). The company has a valid operating license for three years from 3 March 2020 to 2 March 2023 under the Atomic Energy Licensing Act 1984 [Act 304]. Lynas Advanced Materials Plant (LAMP) is a chemical plant operated by Lynas Malaysia.

As of 31 December 2022, the LAMP operation in Gebeng, Pahang has processed approximately 0.698 million metric tons of rare earth concentrate imported from Mount Weld, Australia, and the processing of the rare earth concentrate has resulted in approximately 1.08 million metric tons of Water Leached Purification (WLP) residue. Processing rare earth concentrate involves mixing various chemicals such as acids to produce rare earth elements and residues.

The WLP generated from LAMP's processing is temporarily stored at the Residue Storage Facility (RSF) located on the plant premises. The WLP residue stored at the RSF is expected to be relocated from February 2023 to the Permanent Disposal Facility (PDF) located nearby to the plant premises.

Based on the licensing conditions imposed on March 3, 2020 regarding the operation of the Cracking and Leaching (C&L) plant outside of the country, a verification visit to the construction of the Kalgoorlie-Boulder C&L plant was conducted on December 20, 2022. The visit confirmed that the construction of the C&L plant is at the 70 to 80% completion and is expected to be operational by July 2023.