General

Ts. Dr. Khairil Azman produces NanoPearm to increase bitumen capacity for road pavement

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GAMBANG, 6 May 2021 - A Kuching-born lecturer, Ts. Dr. Khairil Azman Masri, 33, has produced Nanopearm - Nanosilica Modified Asphalt Binder, which is a product based on nanomaterials and bitumen to increase the capacity and durability of bitumen.

According to the lecturer from the College of Engineering (KKEJ), Universiti Malaysia Pahang (UMP), silica nanoparticles in the size of 10 to 15 nanometers are used as a mixture in bitumen.

“Bitumen is the main material in road pavement. Asphalt mixture for roads often encounters damages, especially in Malaysia with rain and heat throughout the year.

“This situation has caused inconvenience to road users and an increase in road accidents.

“Therefore, the study, which began in 2018, was conducted to fundamentally identify the causes of road damage and subsequently create nano-sized materials that can increase the strength and durability of asphalt mixtures,” he said.

This research was conducted with Professor Ir. Dr. Ahmad Kamil Arshad from Universiti Teknologi MARA (UiTM), Shah Alam, Associate Professor Dr. Ramadhansyah Putra Jaya, Associate Professor Ts. Dr. Muzamir Hasan and Dr. Mazlan Abu Seman from KKEJ UMP.

He explained that NanoPearm is mixed into bitumen (the main material of road pavement) as an additive to increase the strength and durability of the bitumen.

“The use of Nanopearm can reduce the problem of road damage in Malaysia and further reduce the accident rate.

“The use of NanoPearm is also expected to be expanded in other constructions such as walkways and house roof insulation.

“We are also collaborating with QCP Paver Sdn. Bhd. and Gardner Global Sdn. Bhd. as the manufacturers of building materials.

“Meanwhile, collaboration with government agencies such as Nano Malaysia is being undertaken to expand the use and function of NanoPearm,” he said, who has expertise in the field of Road and Transportation Engineering.

This research won gold medals at the CITREx 2020 competition and ITEX 2020.

By: Safriza Baharuddin and Nur Hartini Mohd Hatta, UMP Press

Translation by: Dr. Rozaimi Abu Samah, Engineering College/Faculty of Chemical and Process Engineering Technology

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