



Scientist in Profile

Dr Nazirah Ahmad

Nazirah Ahmad is currently the head of Engineering Design and Product Development Unit (EDPU) under the Technology and Engineering Division, Malaysian Rubber Board (MRB)

She graduated with Bachelor of Science in Civil Engineering from University of Louisville, Kentucky, USA in 1993. Later, she received her MSc in Sound and Vibration Studies from University of Southampton, UK in 2005 and her PhD in Sound and Vibration Studies in 2009 from the same university. Her first job was as an engineer in a construction company for five years before joining MRB in 1999 as a research officer.

Her early research in MRB focused on design, development and modified rubber component especially for automotive and rubber isolator. She has experienced in using finite element analysis method for designing rubber product and verified it with experimental performance testing. Later on, she works in the field of noise and vibration, where she was involved in using rubber to reduce noise. One of her contributions in this field is the development of the rubber component called rail absorber, which is one of the effective ways to reduce noise from railway tracks at various temperatures. Currently, her research interest is in rubber product application to buildings and bridges, automation and mechanisation and rubberised road.

She has involved in several projects such as designing seismic rubber for 2nd Penang Bridge and 10 storey offices and service apartments in Langkawi, Kedah. For automation and mechanisation, she led projects such as Automatic Rubber Tapping System, Soil Filling Machine and Planting Machine. For rubberised road, she is involved in R&D and leads the project on using natural rubber cuplump in modified bitumen called Cuplump Modified Bitumen (CMB).

She also gives lectures on topics related to rubber for engineering application. This includes short courses conducted by MRB at the Akedemi Hevea Malaysia. She was a member of several committees in standards such as chairman for Technical Committee of engineering rubber product, chairman for the working group on base isolation design for seismic condition for earthquake Technical Committee (TC), a committee member of ISO/TC45 rubber and rubber products, a committee member of TC on earthquake/Eurocode 8 and a committee member of earthquake and tsunami.

Her contribution to the research has been recognised by the scientific community as she received gold medal and Innovative Product Awards during the International Invention & Innovation Exhibition (ITEX) in 2011 for innovation of a simple graphic user interface for heat transfer analysis in thick rubber article. She also received a silver medal for soil filling machine and two bronze medals for planting and fertiliser machines in ITEX 2012. She won best scientist award, best product innovation award and best consultation awards during MRB Innovation Day in 2013. In addition, she was also awarded a gold medal in ITEX 2014 for innovation of a sample testing apparatus with a cooling device. In ITEX 2015, she received a silver medal for sustainable laminated rubber-metal spring from natural rubber. She was also awarded a gold medal for the method of preparing coagulated or cuplump rubber-based modified bitumen in ITEX 2016. She won the best creative innovation cuplump modified bitumen for road pavement during innovation competition for International Women's day 2017. She also won a gold award for CMB-Malaysian new rubberised road during Malaysia Road Conference-Invention & Innovation Exhibition (MRC-IIE) 2018.