Mixing Research and Practices in Malaysia

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ABSTRACT
Mixing research interests in Malaysian institutions are on multi-phase stirred vessels and oscillatory flow column. Both fundamental and applied studies are carried out. Future work is moving more towards application-based studies, to include the effects of mixing conditions in the performance and micro-behavior of biological and chemical systems. On the practical side short courses conducted on mixing has been very well received by those involved in mixing operations. Plans are to create better communication amongst academics and practitioners, in the effort to bridge the gap between knowledge and practice.

Keywords: MIXING, Malaysia, stirred vessels, multiphase systems, oscillatory flow, applications

1. BACKGROUND ON MALAYSIA
Malaysia is a hot and humid equatorial country in the South East Asia, with a multiracial population of around 23 million. Peninsular Malaysia or West Malaysia is the southern-most part of continental Asia formerly known as the Federation of Malaya. Its strategic location between the Straits of Malacca and the South China Sea served well as a halfway house for merchants from the east (China) and the west (India, Middle East) making it a centre of trade for centuries. East Malaysia comprises the states of Sabah and Sarawak on the island of Borneo in the South China Sea.

Malaysia was colonized in the 16th century by the Portuguese, Dutch and then the British from 1786. It gained independence from the British in 1957 following a period of Japanese occupation during World War II. The earliest industrial activities in Malaysia were tin mining and rubber plantation. It was at one time the world’s largest producer of tin, natural rubber and palm oil. In 1991 prime minister Tun Dr Mahathir Mohamad declared the aspiration for Malaysia to become a fully developed and industrialized nation by the year 2020. “Vision 2020” as the plan is known, spurred unprecedented activities in the name of development, transforming the country in various aspects especially with regard to the vast expansion of the industrial sector.

2. INTERESTS IN MIXING
Industries in Malaysia are categorized into Construction, Mining and Petroleum, and Manufacturing. The manufacturing sector encompasses a wide range of industries including food processing, textile and apparels, wood products, printing, chemicals, plastic, rubber, and pharmaceuticals. In most of these mixing operations are inevitable.

Multinational companies generally have their processes and operations well-established and supported by research and development in their mother countries. In comparison, small and medium enterprises (SMEs) which had mushroomed in this country with the onset of industrialization, have skills passed down through apprenticeships or trial and error approaches. Nevertheless, to their credit, perseverance in getting things to work and to attain maximum yield at minimum cost have often produced best results with