Foreign Winner	
Third Winner	**Rank**
Applied Research	**Category**
Prof. Abdul Latif Ahmad	**Researcher**
Malaysian	**Nationality**
Universiti Sains Malasyia	**University**
Sustainable development of palm oil industries via a novel membrane based treatment system	**Project Title**

Abstract

Malaysia is the world largest producer of palm oil, resulted large amount of palm oil mill effluent (POME) and identified as the major stumbling block to the advancement of palm oil industry in Malaysia. Prof. Latif has invented the sustainable development of palm oil industries via a novel membrane based treatment system which is the only one ever done in the world. This invention is zero discharge, environmental friendly which supports the green technology. The concept of sustainable development in palm oil industries is achieved by: (1) the invention of a novel and cost effective POME treatment system using membrane technology, (2) synthesis, characterization and development of economically viable membrane suitable for wastewater treatment, (3) effective techniques of membrane cleaning to mitigate membrane fouling to extend the life span of the membrane which enhance its attractiveness usage in wastewater treatment. Based on the detail study by Prof. Latif, an innovative and cost effective membrane treatment system has been invented to successfully recovering and recycling the crystal clear water with US Environmental Protection Agency (USEPA) drinking water standard and the sludge as high grade organic fertilizer from POME. Besides, the current invention has given a major breakthrough in membrane and module fabrication as the products are cost effective, highly fouling resistant and long life span. Current invention has contributed in the advancement of science and technology through 47 international journals publication, 19 research exhibition awards besides producing 18 master students and 4 Ph.D. students.