BIOMEDICAL ENGINEERING, A CAREER PATH WITH A BRIGHT FUTURE

by Ir. Shamila Ariaratnam

On 14 December 2019, 30 participants from various engineering disciplines attended a talk titled Biomedical Engineering, a Science, Technology, Engineering & Mathematics (STEM) career path with a bright future.

Held at Auditorium Tan Sri Chin Fung Kee, Wisma IEM, the talk was conducted by Ir. Amirah Abdul Rahman from the Ministry of Health Malaysia.

STEM is used when addressing education policies and curriculum choices in schools to improve competitiveness in science and technology development. The government has been encouraging STEM even in primary schools as it has implications on workforce development, national security concerns and immigration policies. Starting this year, the Ministry of Education has introduced STEM packages for Form Four students to choose from.

Biomedical Engineering is one of the fields of study that starts with STEM. It is the application of engineering principles and design concepts to medicine and biology for healthcare purposes. The role of biomedical engineers is wide, especially with emerging fields such as artificial intelligence (bioinformatics), robotics, nanotechnology (biomedical sensors), medical devices, biomechanics, tissue engineering, medical imaging and prosthetics and orthotics.

According to an Espicom, Association of Malaysian Medical Industries (AMMI) analysis, the global medical device market has seen a 7.5% compound annual growth rate from 2013 to 2018, with a total export value of RM11.317 billion (2017) for the medical device market in Malaysia. On the other hand, the import value for the same year was RM6.268 billion.

Biomedical engineers can work in research and development activities focusing on next generation products, innovation of new products and strategic planning, identification and recognising areas of medicine with significant problems in need of technological solutions or entrepreneurship. Moreover, the healthcare facility landscape is also evolving from general hospitals to specialised primary, secondary and tertiary care centres.

Participants at the talk

Therefore, the role of biomedical engineers varies with the demographic of patients seen in different facilities. Additionally, if they are to join medical technology providers, their function will need to follow the equipment cycle that they are in, either sales, installation, testing and commissioning, repairs, periodical maintenance, application or after sales support.

Ir. Sharmila presenting a token of appreciation Ir. Amirah (left)

To complement such diverse roles, biomedical engineers need to be equipped with necessary skills to take on these challenging tasks and responsibilities. The concluding slides touched on the acts and certifications related to the Biomedical Engineering field such as Medical Device Act & Regulation, Private Healthcare Facility & Services Act, Malaysian Society for Quality in Health and Joint Commission International standards. ■