

BIOMEDICAL ENGINEERING SHORT BIOGRAPHY

PROF. IR. DR.-ING. EKO SUPRIYANTO MIEEE



Eko Supriyanto obtained his Doctorate in Engineering (Artificial Brain Material) from University of Federal Armed Forces Germany in Hamburg, while his Master's and Bachelor's degrees in Biomedical Engineering (Ultrasound Doppler Instrument) and Electrical Engineering (Dialysis Machine) respectively, were from Bandung Institute of Technology.

He joined the Faculty of Electrical Engineering (FKE), UTM as Senior Lecturer in 2006, after 2 years working experience in an electronics company in Düsseldorf. He was subsequently tasked by Prof. Jasmy bin Yunus, Head of Electronics Department, FKE, to work towards the establishment of the Biomedical Engineering Faculty, together with lecturers from other faculties: Prof. Dato' Ir. Dr. Mohammed Rafiq bin Dato' Abdul Kadir (Mechanical Engineering), the late Assoc. Prof. Dr. Rashdi Shah Ahmad (Science) and Prof. Dr. Abdul Hafidz bin Hj. Omar (Education). The Biomedical Engineering program and faculty building plan proposals were approved by the Ministry of Higher Education (MoHE), Malaysia, in 2007. Prof. Eko was also actively involved in the development of Masters and PhD programs in Biomedical Engineering from 2007 to 2009 and was instrumental in facilitating the first International Double Degree Master and PhD in Biomedical Engineering between UTM and Ilmenau University of Technology (the oldest university in Europe offering Biomedical Engineering programs), which is financially supported by German Academic Exchange Service or DAAD (*Deutscher Akademischer Austauschdienst*).

In recognition of his excellent achievements in research, which included winning prestigious awards such as Best of the Best Malaysia Innovator Award 2007 and Special Prize from Korean Invention Promotion Association in 2009, Prof. Eko was promoted to Associate Professorship and Head of Clinical Sciences Department, Faculty of Biomedical Engineering and Health Sciences. That same year, he was awarded an RM 2 Million commercialization grant for his research product by Malaysian Technology Development Corporation (MTDC). During his tenure as Clinical Sciences department head (2009 – 2012), he actively engaged in UTM's transformation program and was appointed as project leader for the Research Alliance and Research Centre transformation, under the purview of the Deputy Vice Chancellor for Research and Innovation. His main achievements as project leader were the integration of research alliances, consolidation of research centres and formulation of new key performance indicators (KPI) for UTM academics. It was during this period too that he worked in collaboration with teams from Universiti Sains Malaysia (USM) and Cyberjaya University College of Medical Sciences (CUCMS); and with KPJ Healthcare, to successfully develop proposals for an MD-PHD program and joint UTM-KPJ hospital respectively.

By virtue of his outstanding research achievements, Prof. Eko was selected as one of top 10 UTM researchers and was promoted to full professorship in 2012, to become one of the youngest appointed to such a post in Malaysia. Following this, he was entrusted with the responsibility of establishing the IJN-UTM Cardiovascular Engineering Centre by the Vice Chancellor of UTM and was subsequently

appointed as Director of the Centre from 2013 to 2017. Within 2 years of its inception, in 2014, the Centre succeeded in becoming Top 3 (of 37) rated centre of excellence (COE) based on the Higher Institution Centre of Excellence (HiCoE) assessment instrument. In 2016, Prof. Eko proceeded to embark on a new business venture, a UTM Spin Off Company, named E Life Solutions, to commercialize expertise, facilities and products of UTM aimed towards the betterment of safety, health and productivity of companies and organizational entities. To date, E Life Solutions notable accomplishments include the development of a new clinical data management system for National Heart Institute (IJN) and Computerized Service Management System (CSMS) for medical equipment for Ministry of Defence (MinDef) Hospitals. The company has also successfully obtained a 5 years contract from Petronas to manage safety risk in Petronas Refinery Plants.

Within the realm of biomedical engineering education development, Prof. Eko's experiences include being a consultant for the formation of Biomedical Technology Bachelor Program at CUCMS, external examiner for Bioinstrumentation Program at Multimedia University (MMU), Industrial Advisor for Medical Electronics program at MAHSA University and External Reviewer of Biomedical Engineering program at University of Malaya (UM). As for the industry-based biomedical engineering training program, he is currently active as main trainer, recognized by the Medical Device Authority (MDA), Ministry of Health Malaysia (MOH), for Medical Devices Life Cycle Management, which encompasses elements of development, planning, installation, commissioning, utilization, maintenance, repair and disposal of medical devices. He has also mooted and secured more than 10 collaborative partnerships, both academic and industry-based, for UTM, in the international arena, with countries such as Germany, Australia, Japan, Thailand and Indonesia, resulting in successful acquisition of numerous international grants and staff/student mobility programs.

Prof. Eko has published more than 280 papers in international journals and proceedings, 10 international books and is a well-renowned keynote and plenary session speaker, having invitations to more than 30 international conferences and seminars worldwide in the recent 10 years. In addition to this, he has received more than 30 national and international research awards, registered more than 40 patents and copyrights, with some of his research products being licensed and commercialized. His research products include technological devices and solutions for prenatal diagnosis, early detection of Alzheimer's disease, health-risk prediction, brain stimulation, non-invasive cervical cancer detection, early interventions for special children, telerobotics for heart surgery monitoring, and herbal therapy for cervical and breast cancer. Prof. Eko currently teaches medical informatics, healthcare technology management and artificial intelligent courses to both undergraduate and postgraduate students while his research interests include engineering applications in healthcare and other related industries. He is also an Adjunct Professor at Faculty of Computer Science and Automation, Ilmenau University of Technology Germany and Visiting Professor at Faculty of Public Health, University of Indonesia.

Prof. Eko is a UK certified EMC Engineer, German Certified Business Manager, Japan Certified Ultrasound Specialist, and Indonesian Certified Professional Engineer (Ir.) and is the incumbent Director of Centre for Study of South East Asia Region Development, Honorary Advisor of German-Indonesian Academician and Specialist Association, as well as Chairman of ASEAN Healthcare and Biomedical Engineering Association. He is also consultant for technical standards, regulations and guidelines development for World Health Organization (WHO), MOH and MDA. His achievements thus far in this context include the successful formation of Malaysian Standards for Ultrasound in Medical Diagnostics, Guidelines for: (i) Electrical Safety Testing of Medical Devices; (ii) Biometrics Application in Healthcare Institutions; (iii) Pre and Post Market Medical Devices Monitoring; (iv) Electromagnetic

Interference Management in Healthcare Institutions; as well as (v) Regulatory Framework for Good Laboratory Practice.

Prof. Eko places much importance on the acquirement of diverse knowledge and skills and is a fervent proponent of 'Limitless Thinking' as an approach to harness greater creativity and innovativeness. He believes in fresh, unconventional perspectives and is geared towards a new research area called "human programming" which introduces a novel approach to artificial intelligence called "Artificial God Intelligence" concerning safety and sustainability of human against future Artificial Intelligence. As a visionary scientist, academician and industry player, Prof. Eko foresees the imminent advent of the 5th industrial revolution and looks forward to its many challenges and opportunities.