Plenary Speaker 2: Professor Ir. Ts. Dr. Hazry Desa (UniMAP, Malaysia)
Title: Experimenting with Variable Arm Quadrotors: Realizing Dynamic Configurations for Enhanced Flight Performance

Hazry Desa, Ph.D., Professor of Universiti Malaysia Perlis (UniMAP), Malaysia.

Education:

2007, Ph. D. in Materials Science and Production Engineering, Oita University, Japan.
1997, BEng. in Mechanical Engineering, Tokushima University, Japan.

Biography:

He was a Senior Design Mechanical Engineer in R&D Sony Technology Malaysia in 1997. In 2001 he was employed by Tamura Electronics Malaysia. He pursued his PhD at the Artificial Life and Robotics Laboratory, Oita University, Japan in 2003. In 2008, he was appointed as the Deputy Dean at the School of Mechatronic in Universiti Malaysia Perlis (UniMAP) and soon after was appointed as the Dean of Center for Communication Skills and Entrepreneurship. He was promoted to Associate Professor in 2010 and Professor in 2016 by UniMAP and consequently appointed as the first dean of the School of Business Innovation and Technopreneurship by UniMAP until Feb 2017. In March 2017 until 2019, he is appointed as the Dean for the Faculty of Engineering Technology. He is also the Director of the Autonomous System and Machine Vision Research Cluster (AutoMAV) since 2009, which then is upgraded to the Center of Excellence for Unmanned Aerial Systems (COE-UAS) in 2013 until present. He is also registered with Engineering Council United Kingdom as Chartered Engineer (C.Eng.), registered as a ASEAN Chartered Professional Engineer (ACPE), registered as a Professional Engineer with Board of Engineers Malaysia (BEM), registered as a Professional Technologist with Malaysia Board of

Technologist (MBOT), senior member of IEEE, member of IET and member of IEM.

Abstract:

This paper introduces two innovative variable arm concepts for quadrotors, enhancing precise movement control by manipulating bending moments through arm length variations. Its key goal is to identify the optimal arm configuration for smooth and stable quadrotor maneuvers. Exploring two concept designs tailored for quadrotors, the study focuses on regulating manoeuvrability using variable arms, enabling bending moment adjustments. Results validate that the electric actuator with linear guide-type 2 variable arm ensures smooth and stable quadrotor movement.