

# **DEVELOPMENT AND ASSEMBLY OF PERMANENT MAGNET SYNCHRONOUS MOTORS UNY AND UMP IN ACCELERATING THE REALIZATION OF ELECTRIC VEHICLES IN INDONESIA**

**by Dr. Ir. Zainal Arifin, M.T., Dr. Mohd Azri Hizami Bin Rasid, Dr. Mohammad Heerwan Bin Peeie, Dr. Muhammad Yusri Ismail, Dr. Sutiman, S.Pd., M.T., Aan Yudianto, S.Pd., M.Sc., Dr. Agus Widyianto, M.T., I Wayan Adiyasa, M.Eng.**

## **ABSTRACT**

The increase in exhaust emissions is a major issue every year. This is evidenced by the reduction in the use of fossil fuels for power generation and transportation. The issue of suppressing exhaust emissions in transportation is a very serious concern, especially in Indonesia. The development of electric vehicle is one of the Indonesian Government's commitments to reduce emissions by 29% by 2030. The government's role is very large in encouraging national automotive industry players to produce electric vehicle. The electric motor is a basic component in the electric vehicle drive system. In research, overseas cooperation focuses on the process of develop and assembly electric motor, permanent magnet synchronous motor.

This research is important to do in assembling a permanent magnet synchronous motor with high efficiency. The greater the efficiency of the permanent magnet synchronous motor, the performance of the electric motor and the production cost can be optimized. With a collaboration program with foreign universities, Universiti Malaysia Pahang (UMP), Faculty of Manufacturing and Mechatronics Engineering Technology is able to provide electric motor products in the electric vehicle industry development program and accelerate the conversion of electric vehicles in Indonesia.

In this study, it has a very large impact on education to realize the enculturation scenario and academic acculturation on the vision, mission and goals of Yogyakarta State University (UNY). Improvements in the main performance indicators (IKU) of higher education can be obtained such as IKU 2 (Students Gain Off-Campus Experience), IKU 3 (Lecturers Do Activities Outside Campus), IKU 5 (Lecturers' Results Used by the Community), IKU 6 (Cooperative Study Programs) with World Class Partners). The goal of this research is to increase the Domestic Component Level (TKDN) in the industry and electric vehicle components.

*Kata Kunci: assembly process, electric motor, IKU, permanent magnet synchronous motor, TKDN*