

EE3124 Introduction to Electric Machines and Drives

Mini-Project

Semester B, 2021/2022

In this project, you will learn how electric machines have been widely applied in the industries and improved our daily life. By investigating the machines' topologies, controls, and applications, the knowledge of electric machines and drives will be further consolidated.

1 Objectives

In this project, you will

- a) Learn the types of electric machines applied for the popular electric vehicles (EVs), and elevators which are inevitable in Hong Kong.
- b) Familiar with motor drives and control strategies.
- c) Understand the rated power designs and system performance.

2 Tasks

This project has two tasks, you may pick up one of them to do the investigation.

- a) Development of Electric Motors for EVs
- OR
- b) Development of Electric Motors for Elevators

3 Useful Tips

- a) Read relevant information from books, magazines, websites, etc.
- b) Describe a brief history of electrified EVs or elevators.
- c) Discuss traditional and modern electric motors for EVs or elevators.
- d) Summarize and compare the rated system parameters of different motors.
- e) Discuss their advantages and disadvantages.
- f) Describe the development trend of electric motors for EVs or elevators.
- g) There is no template available, you are free to organize in any pattern.

4 Submission Requirements

- a) Each student is required to submit a PDF file (Word not preferred) via CANVAS under Assignments before the deadline.
- b) The project report should not exceed 8 pages, including figures, tables and references, but should be informative.
- c) Please backup your file regularly since the submitted file may be corrupted or damaged (very rare). If that happens, you will be informed of resubmission.