

# PROTOTYPE DESIGN COLLECTION

## SERIES 2



# Prototype Design Collection

## Series 2



**AHMAD NAJMIE RUSLI**

**UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR  
KAMPUS PASIR GUDANG**

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**CHIEF EDITOR:**

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Tel: +60 7-381 8493

# FOREWORD

This digital book on Prototype Design Collection Series 2 (PDC Series 2) is published as a reference design for mechanical engineering students. The designs presented experience a few phases of analysis before fabrication of prototype. Each project summarises the project description, prototype, figures, and design parameter. The design products vary in tools or equipment for household, workshop, entrepreneur, etc. Suggested material and detail of prototype dimension are also mentioned in this book.

It is hoped that this book will assist the students to have more ideas on innovation design products in the future.

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## CHAPTER 77

### Design and Fabrication of Automatic Recycle Bin

Muhammad Iqbal Wafiuiddin Johar <sup>1</sup> and Raja Muhammad Aslam Raja Arif <sup>2\*</sup>

<sup>1,2</sup>*Mechanical Engineering Studies, College of Engineering, Universiti Teknologi MARA  
Johor Branch, Pasir Gudang Campus, 81750 Masai, Bandar Seri Alam, Johor Darul Ta'zim.*

*\*Corresponding author (e-mail): rajaaslam@uitm.edu.my*

#### PROJECT DESCRIPTION

The improper sorting of recyclable waste leads to environmental pollution, which can be harmful to living organisms. The objective of this project is to develop an automatic recyclable bin that will sort waste accurately into their respective categories, without the need for manual sorting. The bin comprises of sensors to detect each type of waste and containers for each category. A separator mechanism, controlled by servo motors, separates the waste into their respective containers. This automatic recyclable bin is a cost-effective and eco-friendly solution to reduce pollution and minimize the need for producing new items with the same materials. The project will help to raise awareness about the importance of recycling and create a healthier environment for living beings. In conclusion, the automatic recyclable bin project is a sustainable and efficient way to sort waste into their respective categories. It promotes eco-friendliness and encourages responsible waste management, making it an essential project in creating a healthier environment for living organisms.

**Keywords:** *Automatic bin, Environment, Recycle*

#### PROTOTYPE



### DESIGN PARAMETER

