

# PROTOTYPE DESIGN COLLECTION

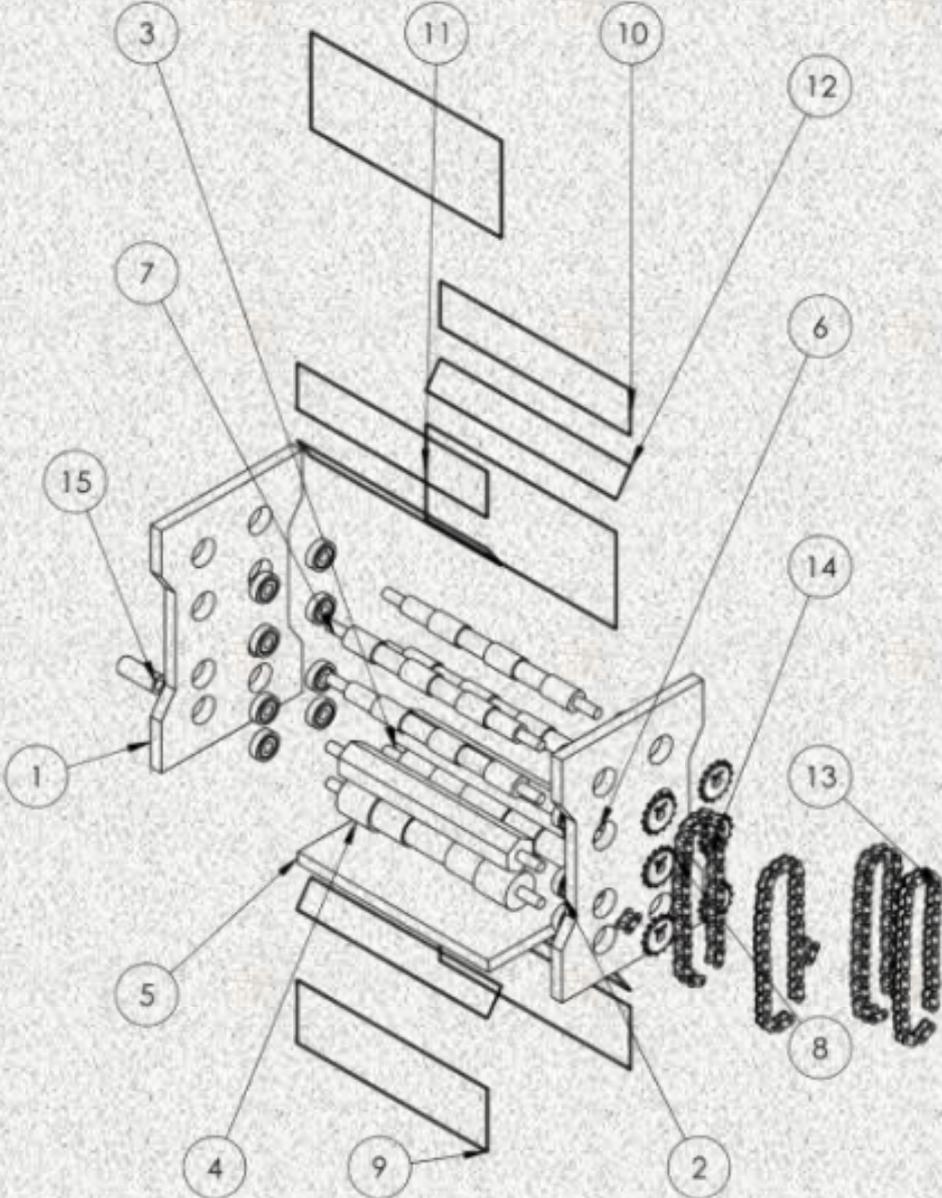
SERIES 4



Universiti Teknologi MARA  
Pasir Gudang Campus

# Prototype Design Collection

## Series 4



Ahmad Najmie Rusli

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# FOREWORD

This digital book on Prototype Design Collection Series 4 (PDC Series 4) 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.

## Table of Contents

<b>CHAPTER 1</b> .....	1
<b>Design and Fabrication of a Multipurpose Baby Cot</b> .....	1
Nabil Qayyum Bin Roslan <sup>1</sup> and Miqdad Bin Khairulmaini <sup>2*</sup> .....	1
<b>CHAPTER 2</b> .....	3
<b>Design and Fabrication of a Weather Sensing Cloth Drying Rack</b> .....	3
Mustaqim Syah Bin Kamarul Zaman <sup>1</sup> and Miqdad Bin Khairulmaini <sup>2*</sup> .....	3
<b>CHAPTER 3</b> .....	5
<b>Design and Fabrication of a Patient Transfer Aid for Seamless Bed to Wheelchair Mobility</b> ..	5
Fateen Aqela Binti Azzaidi <sup>1</sup> and Miqdad Bin Khairulmaini <sup>2*</sup> .....	5
<b>CHAPTER 4</b> .....	7
<b>Prototype of a Donut Topping Machine</b> .....	7
Nurul Athirah Binti Ramizan Nassir <sup>1</sup> and Ahmad Najmie Rusli <sup>2*</sup> .....	7
<b>CHAPTER 5</b> .....	9
<b>Prototype of a PLA Filament Extruder</b> .....	9
Abdul Harith Hazim Bin Abd Rashid <sup>1</sup> and Ahmad Najmie Rusli <sup>2*</sup> .....	9
<b>CHAPTER 6</b> .....	11
<b>Prototype of a Candy Sorting Machine</b> .....	11
Hairul Ikhwan Bin Hazizan <sup>1</sup> and Ahmad Najmie Rusli <sup>2*</sup> .....	11
<b>CHAPTER 7</b> .....	13
<b>Prototype of a 3D Printing Scrap Recycling Machine</b> .....	13
Raziq Amir Bin Rosdi <sup>1</sup> and Ahmad Najmie Rusli <sup>2*</sup> .....	13
<b>CHAPTER 8</b> .....	15
<b>Manual Compaction Machine for Casting</b> .....	15
Muhammad Hazim Md Azli <sup>1</sup> , Najibah Ab Latif <sup>2*</sup> and Ainaa Maya Munira Ismail <sup>3</sup> .....	15
<b>CHAPTER 9</b> .....	17
<b>Convertible Cart-Ladder</b> .....	17
Mohamad Aimi Zuhairi Fikri Mohd Aimi Zamani <sup>1</sup> , Najibah Ab Latif <sup>2*</sup> and Ainaa Maya Munira Ismail <sup>3</sup> .....	17
<b>CHAPTER 10</b> .....	19
<b>Design and Fabrication of Mini Firefighting Device</b> .....	19
Adam Faris Bin Ahmad Zaidy <sup>1</sup> and Muhamad Faris Syafiq Bin Khalid <sup>2*</sup> .....	19
<b>CHAPTER 11</b> .....	21
<b>Design and Fabrication of Shuttlecock Launcher Machine</b> .....	21

## CHAPTER 29

### Development of an Automatic Wrapping Machine

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#### PROJECT DESCRIPTION

Current automatic wrapping machine that being develop has the problem in terms of design and performance. Available automatic wrapping machine that's being develop previously cannot withstand the load subjected to it which causing the wrapper machine to tilt. The objective of this project is to redesign and reanalyse the force that are acting on the body frame of the machine. This project fabricates a wrapping machine. Mild steel is cut and welded (SMAW, 80-120V) into a frame, then ground smooth. 5cm drilling allows frame disassembly and caster attachment. Rotating arms (rectangular and 'U' shaped mild steel) connect to a 24V DC motor and handle; 9cm holes adjust wrapping size. Aluminium 30 series profiles are attached with M6 hardware. An AC-DC converter and power regulator power the motor. The final product created a portable, automatic pallet wrapper. It works well, is made of strong steel, and helps factories wrap pallets faster with less work. It's easy to use and move.

**Keywords:** *Automatic, Wrapping*

#### PROTOTYPE



### DESIGN PARAMETER

