

<i>Foreward.....</i>	<i>iv</i>
<i>Chapter 1: Overview of the MediVentors Challenge.....</i>	<i>1</i>
<i>Chapter 2: Establishing Eco-Systems in Support of Medical Devices Industrialisation.....</i>	<i>5</i>
<i>Chapter 3: Medical Monitoring Wearable Technology.....</i>	<i>17</i>
<i>Chapter 4: Design and Development of a Tracking System for Autoinjuectors Using Bluetooth Low Energy with Autonomous Emergency Alert.....</i>	<i>23</i>
<i>Chapter 5: Low-Cost Load Shedding-Resilent Medicine Storage with Phase-Change Material: Theoretical Heat Transfer Evaluation of a Design Concept.....</i>	<i>30</i>
<i>Chapter 6: Development and Validation of a Medical Device Software to Size Autoinjector Components.....</i>	<i>40</i>
<i>Chapter 7: Development of an Integrated Covid-19 Tracking and Monitoring System.....</i>	<i>46</i>
<i>Chapter 8: Design and Development of an Open-Source ADL-Compliant Prosthetic Arm for Trans-Radial Amputees.....</i>	<i>63</i>
<i>Chapter 9: Development of a Control Algorithm For A Bag Valve Mask Ventilator</i>	<i>72</i>
<i>Chapter 10: Development of an Ultraviolet C Irradiation Device: Initial Findings for the Treatment of Spiked Whole Blood.....</i>	<i>80</i>
<i>Chapter 11: The Use of Hollow Fibre Membrane Dialysers in a Liquid-Liquid Configuration for Respiratory Support</i>	<i>88</i>
<i>Chapter 12: Design and Developement of a BiPAP Non-Invasive Ventilator: Prototype Development</i>	<i>112</i>
<i>Chapter 13: Feasibility of Repurposing Hollow Fibre Membrane Dialysers for Oxygenating Blood in Resource Constrained Environments</i>	<i>122</i>
<i>Chapter 14: Design and Development of a Cost-Effective CPAP Device with Oxygenation and an Automated MDI Delivery System.....</i>	<i>136</i>
<i>Chapter 15: Hospital Oxygen Tank Valve Defrosting System.....</i>	<i>147</i>
<i>Chapter 16: Development of a PEEP (CATPUT) Valve For Ventilators: A Computational Approach.....</i>	<i>161</i>
<i>Chapter 17: Affordable Orthotic Moon Boot Alternative.....</i>	<i>172</i>
<i>Chapter 18: The Design and Devlopment of a Low-Cost High Flow Nasal Oxygen Device: A Functional Analysis</i>	<i>179</i>
<i>Chapter 19: Systems Integration of a Smart Iot-Based Telemonitoring System</i>	<i>191</i>