

# **Design and Manufacture of Prosthetic Bionic hand Controlled via MYO-Sensors**

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## **Abstract**

The present world is highly focused in additive manufacturing technology. Bangladesh is also marching forward in the same field for the revolution of industry 4.0. Prosthetic hand or limb development with cheap price is a very demanding sector in Bangladesh. Over 47 thousand people living with autism in Bangladesh. There are many handless or limbless people, most of them are poor. They haven't enough money to buy a. Though different companies are producing prosthetic hand, those are very expensive and not affordable for middle class and poor people. Therefore, this study wanted to make a prosthetic arm affordable for poor people. This project tried to utilize locally available and low-cost parts for manufacturing this 3D printed bionic hand. This thesis project covers a wide spectrum of engineering disciplines. The root of the system is an innovative mechanical design for a 3D printed prosthetic arm. Modern actuators and electronic circuitry drive the device and provide sophisticated control schemes. Eventually, this work came up with affordable 3D printed prosthetic arm with appreciable performance.

## **Key words**

Industry 4.0, Additive Manufacturing, Prosthetic Hand/Limb and 3D Printing Technology.

## **Biography**

**Gopal Mandal** is a graduate of Mechanical Engineering from IUBAT - International University of Business Agriculture and Technology in December 2022. He was a Fellow Research Candidate at IUBAT's Innovation & Entrepreneurship Center. In his free time, he is interested in machine design, AI, industrial arms, electric vehicles, renewable energy, and biomedical mechatronics.

**Sazzad Bin Sharif** awarded PhD in Mechanical Engineering from University of Malaya (UM), Malaysia in December 2016. He did his MSc in Automobile Engineering in 2013 from International Islamic University Malaysia (IIUM) and BSc in Mechanical Engineering from Chittagong University of Engineering and Technology (CUET) in 2007. Currently, he is an Associate Professor of Department of Mechanical Engineering in IUBAT-International University of Business Agriculture and Technology. His fields of interest are corrosion inhibition and characterization of materials, Alternative energy (Battery), Renewable energy and Automobile, Additive Manufacturing and AI.