

LOW COST 3D PRINTED PROSTHETIC HAND

NAME: ABHIPSA PATI

SCHOOL: DAV PUBLIC SCHOOL, CHANDRASEKHARPUR

ACHIEVEMENTS:

1) IRIS NATIONAL FINALAISTS 2022-23 (Only project from Odisha in the senior category)

2) 2ND IN GLOBAL SCHOOLPRENEUR SUMMIT 2022, FROM ACROSS 5+ COUNTRIES.

GALLERY:



Certificate of Achievement

Presented to

Abhipsa Pati

the student of **DAV Public School - Chandrasekharpur** from **Class XI** for coming up with a truly unique and innovative idea **Low cost 3d printed prosthetic hand** and secured **2nd Position** in the World's biggest idea pitching event - **Global Schoolpreneur Summit 2021**.

Pavan Allena

Pavan Allena,
Founder & CEO of Metamorphosis

Date: DEC 27, 2021



ABOUT THE PROJECT:

- I. The project aims to make an inexpensive, efficient and a customized arm/hand prosthetic, which can be used independently by its user and is realized with the help of 3D Printing technology and use of innovative means.
- II. In order to make a customized prosthetic, following measurements are required- vertical length of the palm from its base to the tip of middle finger; circumference of wrist, forearm and upper arm; and length of forearm.
- III. Aforesaid measurements are then used to create a computer aided design (CAD model) according to the individual's requirement.
- IV. The whole process takes only 30 hours, hence making production very efficient.
- V. This prosthetic is made by amalgamating carbon filter nanoparticles and polyamide in the ratio of 4:20.
- VI. High temperature resistant industrial grade rubber band, having less propensity to deform, is used for finger retraction.
- VII. Fingers, with unidirectional flexibility, are attached with upper arm through nylon strings.
- VIII. The expansion/contraction of these strings, caused by increase/decrease in angle between upper arm and elbow, helps in clinching/releasing of fingers respectively.