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Report prepared by - Young Tinker Team

The following is the progress report for the Young Tinker Space at VSSUT Burla over the last three months. The Young Tinker Space has been instrumental in fostering creativity, innovation, and practical learning among our students. Below are the projects created by our students using the tools, equipment, and machinery provided in the Young Tinker Space:

YOUNG TINKER SPACE: PROJECTS

1. CANSAT



A CANSAT, or "Canister Satellite," is a compact educational tool that offers students and researchers a taste of space exploration. These mini-satellites, resembling beverage cans, are equipped with sensors, instruments, and communication systems, simulating larger satellites. Launched into the Earth's atmosphere, they provide practical experience in space science and engineering.

Our students embarked on a journey to design a specialized CanSat body using Computer-Aided Design (CAD) software. This body was meticulously engineered to accommodate and protect the delicate PCB, ensuring it remains secure and functional throughout its mission. The design process involved careful consideration of dimensions, weight distribution, and structural integrity. The 3D printing process allowed for the precise manufacturing of the CanSat body, resulting in a lightweight yet sturdy casing.

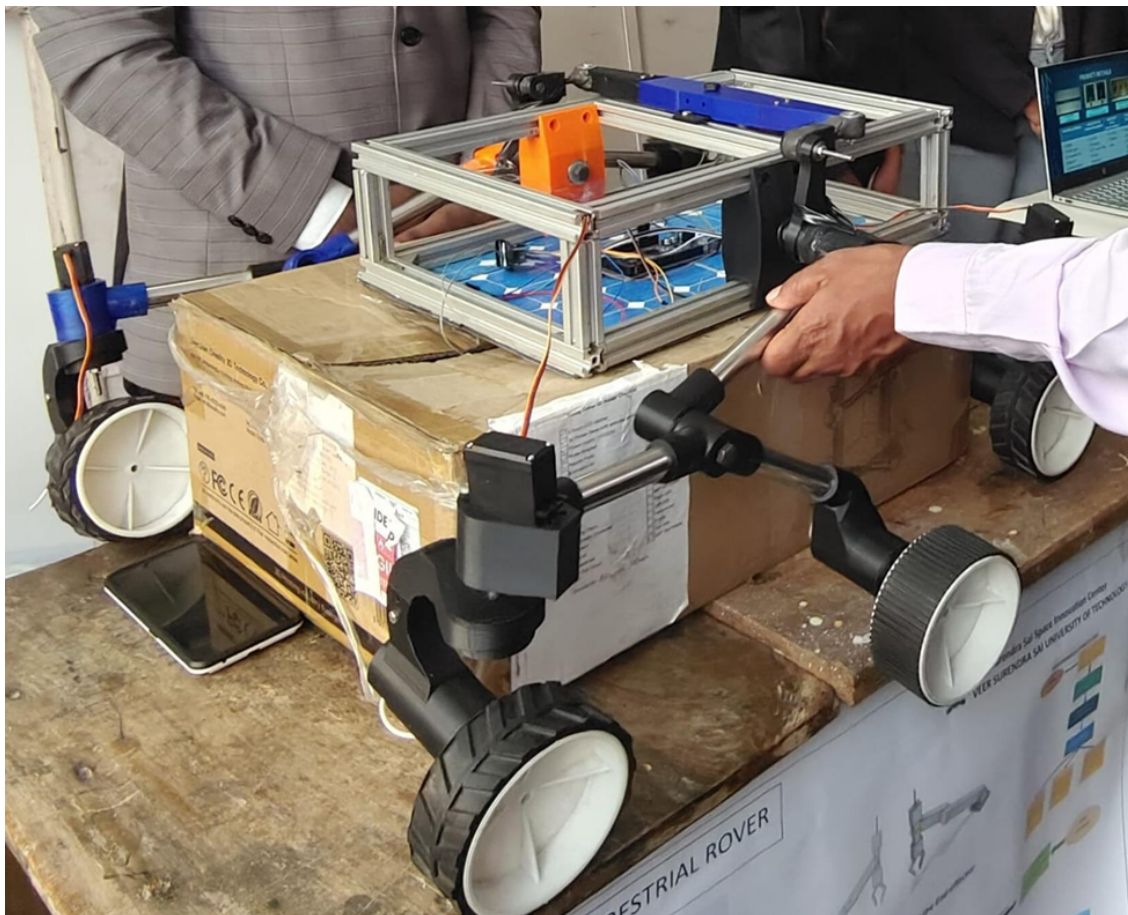
2. Rover

Rovers are versatile robotic vehicles used in space missions by agencies like NASA, ESA, and private companies. They explore planets, moons, and celestial bodies, equipped with instruments, cameras, and mobility systems to collect data on geology, climate, and habitability. These machines are essential for advancing our cosmic understanding and preparing for human exploration beyond earth.

Our students have been actively engaged in the design and production of rover components within the Young Tinker Space. Using Computer-Aided Design (CAD) software, they meticulously crafted detailed designs of various parts required for the rover project.

Once the CAD designs were finalized and meticulously reviewed, the students proceeded to the next exciting phase of this project: 3D printing. Leveraging the 3D printers available in the Young Tinker Space, our students brought their designs to life by fabricating the rover components with precision and accuracy.

The ability to design and create intricate components not only enhances students' technical skills but also sparks their creativity and problem-solving abilities.



3. Nozzle & Bulkhead



The students utilized 3D printers to produce an innovative rocket nozzle. The intricate and precise manufacturing process enables the creation of complex nozzle geometries, optimizing the flow of propellants and combustion gases. As a result, it improves the rocket's overall performance and reliability

3D printed rocket nozzles excel in rocket performance due to their tailored, lightweight designs with intricate channels that optimize propellant flow. These nozzles are customizable, quick to prototype, and reduce manufacturing complexity, enhancing reliability. They withstand high temperatures, cut costs over time, and innovate cooling solutions.

4. Idea Lab's Logo

Students, using their tinkering skills, have created our Idea Lab's logo with a 3D printer. This means they've turned a digital design into a real, 3D logo. It's a great example of how we blend art and technology in the Young Tinker Space to encourage creativity.

