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# CANDY THRUST: A HANDS-ON TECHNICAL WORKSHOP ON SUGAR ROCKETS

**Abstract**

This paper explores the role of introductory workshops, such as *Candy Thrust*, in advancing practical space education and equipping aspiring professionals with essential technical skills. As part of the technical fest at BITS Pilani, Hyderabad Campus, Students for the Exploration and Development of Space (SEDS) organized a three-day workshop on the fundamentals of solid rocket propulsion, where participants built and tested sugar rockets.

Designed primarily for undergraduate students with minimal prior experience in space science, the workshop aimed to introduce fundamental concepts from the ground up. Participants learned the complete process of constructing a sugar rocket, including its components, safety protocols, and performance considerations. They were also introduced to Open Motor software, enabling them to simulate various parameters—such as core diameter, propellant type, and grain diameter—crucial for designing solid rocket motors.

Each participant received a kit containing KNDX propellant and other essential materials to build their rocket. Under the supervision of an experienced SEDS team, students were guided through the step-by-step assembly process. A quiz encouraged interactive engagement, while hands-on testing on the final day provided a range of results, offering valuable feedback to both attendees and organizers.

To assess the impact of hands-on learning, participant feedback was collected. Observations revealed a significant increase in interest in space science and STEM-related activities. Over the course of the

workshop, students successfully integrated theoretical knowledge with practical application, demonstrating impressive problem-solving skills and the ability to complete the project independently with minimal external assistance. Their confidence and sense of achievement grew as they successfully launched rockets they had built themselves.

The success of this workshop highlights the benefits of making *rocket science* more accessible to undergraduate students. It underscores the potential of incorporating space technology into college curricula and emphasizes the effectiveness of experiential learning in fostering the next generation of aerospace engineers and researchers. This experience makes a strong case in favor of bringing such projects to students of more underprivileged backgrounds. SEDS aims to take steps toward making space technology more accessible, possibly through collaborations with NGOs and other non-profit organizations, allowing a larger audience to engage in STEM fields.