

PSG INSTITUTE OF TECHNOLOGY AND APPLIED RESEARCH TO HOST THE SPROS **INTERNATIONAL ROVER CHALLENGE AND INTERNATIONAL SPACE DRONE** **CHALLENGE 2024 FINALS**

A record number of 21 Rover and 10 Drone teams have arrived at the PSG iTech Coimabtoire for the world's biggest Space Robotics Event - The International Rover Challenge (IRC) and International Space Drone Challenge (ISDC). PSG iTech known for conducting unique programmes is the host for the 5th Edition of IRC. The competition will take place from 24 to 29 January at PSG Institute of Technology and Applied Research (PSG iTech), Coimbatore, Tamil Nadu, India. The teams are not only from premier Institutions across India, but also from Bangladesh and Russia. About 640 students are participating in the event.

The prominent Institutions participating in the event include IIT Bombay, IIT Madras, BITS Pilani, MIT Manipal, VIT Vellore, NIT Surat, Moscow State University, Bangladesh University of Engineering and Technology, among others, are taking part in the event.

When asked about IRC, Dr. Saravanakumar, Principal, PSG iTech, highlights the Comprehensive nature of the event by saying, "IRC offers a unique opportunity and is the ideal platform for budding engineers to showcase their robotics knowledge and skills. By attending this program, students will undoubtedly be inspired to delve deeper into the world of robotics and artificial intelligence."

Dr Nagarjun J, Chairperson, IRC 2024, said "It's not only an opportunity for the PSG iTech Students but also an opportunity for the school and Engineering students across Coimbatore to witness such an event on a grand scale. We invite all technical and Space enthusiasts to come and witness rovers and drones competing in a Mars like environment"

The unique aspect of this competition is that it is a competition for the students by the students. The organising committee of the 2024 event consists of the students of Team Aurora, which is an official project team of PSG iTech. Team Aurora participates in various rover challenges and has developed four rovers since its establishment in 2019.

The International Rover Challenge (IRC) is a space engineering competition organised by the Space Robotics Society (SPROS), which challenges university students to conceptualise, design, develop, and operate a next-generation space rover that can assist astronauts in performing specific missions in simulated Mars conditions. The event aims to ignite and encourage the spirit of innovation amongst budding engineers as they set on a quest to build a space exploration rover, using their skills and ideas. The main objective of this competition is to provide students with a real-world interdisciplinary engineering experience that combines practical engineering skills with soft skills, including business planning and project management. The International Space Drone Challenge (ISDC) is a competition similar to IRC, where the only difference is that the missions are performed using drones.

Every year, thousands of university students participate in the International Rover Challenge (IRC), which spans over 10 months and is divided into three stages.

Stage 1 is called the International Rover Design Challenge, and it is an online competition where teams are required to come up with a conceptual design for a Mars Rover. This stage encourages students to think innovatively and plan each sub-system of the rover, considering various extraterrestrial parameters.

Stage 2 - System Design and Development Review (SDDR) - During this stage, teams are required to submit an SDDR package that focuses on the technical and project management aspects of their rover development project. This package includes a written report and video components, which cover various aspects such as organisational structure, resource management, project planning, project timeline, budget, fundraising plans, sponsorships, prototypes, system design, science strategy, and testing strategy. The top 25 teams with the highest scores from stages 1 and 2 advance to the on-site finals.

Stage 3 is the IRC Finals, which take place over four days. The finals consist of four different field missions, namely

- The Reconnaissance and Delivery Operation
- The Instrument Deployment and Maintenance Operation
- The Astrobiology Expedition
- The Autonomous Expedition

These missions are performed within a specially designed 10,000 square-meter simulated landscape called Sproscape, which includes various topographical elements such as craters, mounts, rocky gardens, rifts, quarry fines, etc. Sproscape is the world's largest arena of its kind. The Sproscape will be developed inside the campus of PSG iTech.



Lamp Lighting during the opening ceremony from left Dr Nagarjun J, IRC Chairperson 2024, Dr Mohanram P V, Secretary, PSG iTech, Mr Sagar Daka, Founder, SPROS, Ms Justyna Pelc, Member, SPROS, Ms Adrianna Oracz, Member, SPROS, Dr Saravanakumar, Principal, PSG iTech



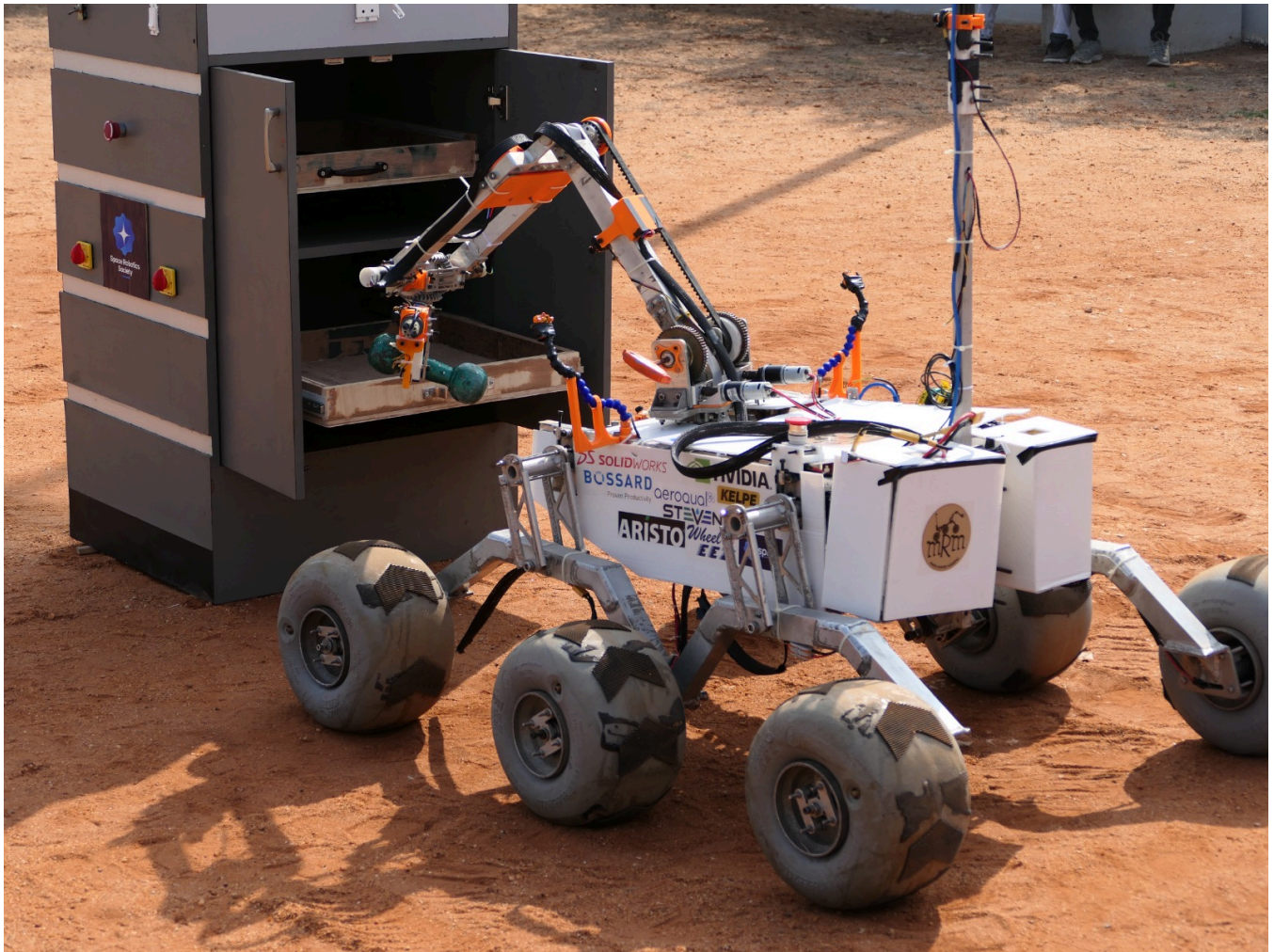
Participants arriving with their Rover at PSG iTech, Coimbatore



A Rover Performing at the Simulated Mars terrain environment at PSG iTech, Coimbatore



A Rover Performing at the Simulated Mars terrain environment at PSG iTech, Coimbatore



A Rover performing a delicate task during the IRC event 2024