Embassy of India, Berne
19 August 2019

INDIA SCIENCE AND INNOVATION WEEKLY

Ask the right questions, and nature will open the door to her secrets.
- Dr. C.V. Raman, The Nobel Prize in Physics 1930

Birth anniversary of Dr. Vikram Sarabhai

100 years birthday of the father of India's space program, Dr. Vikram Sarabhai, was celebrated on 12 August. He was a great institution builder. These include physical research laboratory, Ahmedabad; Indian Institue of Management (IIM), Ahmedabad etc. Vikram lander of the Chandrayaan-2 has been aptly named after Dr. Vikram Sarabhai thus paying homage to his contributions to India space research and science.

Chandrayaan-2 enters Lunar Transfer trajectory

The final orbit raising manoueveur of Chandrayaan-2 spacecraft was carried out on 14 August. All systems onboard Chandrayaan-2 spacecraft are performing normal. Vikram Lander will separate from the orbiter on 2 September and will make soft landing on the lunar surface on 7 September.

450 Startups in Indian Agritech sector

National Association of Software & Service Companies (NASSCOM) unveiled it reports titled *'Agritech in India-Emerging Trends 2019'*. Growing at the rate of 25%, India hosts more than 450 start-ups in the Agritech sector. Every ninth Agritech Startup in the world is originating from India. More than 50% of Agritech start-ups offer supply chain solutions like market linkage, better access to inputs etc.

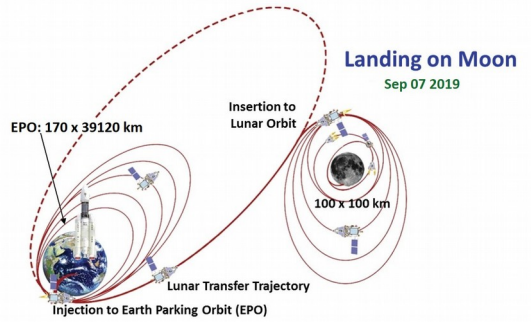
Fund to promote Innovation

Indian Pharmaceutical Alliance (IPA) has approached the think tank Niti Aayog and Department of Pharmaceuticals to promote innovation by setting up a fund to boost technological innovation in the pharma and healthcare startups. IPA has also requested the government's to increase investment in private sector R&D from 25% to 35%.

Simplifying Digital Payment

Students at SRM Institute of Science and Technology developed a product for simplifying digital payments at Smart Hackathon India 2019. The product integrates all forms of payment methods like e-wallets, bank transfers and mobile payments into one, thus increasing the ease of use for customer and merchants alike.

SPECIAL UPDATE: CHANDRAYAAN 2
[Inching towards the edge of Discovery]



Chandrayaan-2 is an Indian lunar mission that will boldly go where no country has ever gone before - the Moon's south polar region. Through this effort, the aim is to improve the understanding of the Moon - discoveries that will benefit India and humanity as a whole. These insights and experiences aim at a paradigm shift in how lunar expeditions are approached for years to come - propelling further voyages into the farthest frontiers.

Chandrayaan-2 was launched onboard GSLV MkIII-M1 on July 22, 2019. It is a follow-on mission to the Chandrayaan-1 Mission [launched in October 2008]. Chandrayaan-1 conclusively discovered traces of water on the moon. This was a path-breaking discovery. Chandrayaan-1 also discovered water ice in the North polar region of the Moon. It also detected Magnesium, Aluminium and Silicon on the lunar surface. Global imaging of the moon was another achievement of this mission.

Chandryaan-2 comprises of an Orbiter, Lander (Vikram) and Rover (Pragyaan). The Orbiter carries eight scientific payloads for mapping the lunar surface and study the exosphere (outer atmosphere) of the Moon. The Lander carries three scientific payloads to conduct surface and sub-surface science experiments. The Rover carries two payloads to enhance our understanding of the lunar surface. A passive experiment from NASA will also be carried on-board Chandrayaan-2.

The soft landing of the Vikram lander on the Moon's surface is likely to be on September 6, 2019. Chandrayaan-2 will attempt to soft land Vikram and Pragyan in a high plain between two craters, Manzinus C and Simpelius N, at a latitude of about 70° south. The mission life of Orbiter will be one year whereas the mission life of lander (Vikram) and rover (Pragyan) will be one Lunar day which is equal to fourteen earth days. The Rover can travel up to 500 meter (half a kilometer) from the landing spot on moon.

The lunar South Pole is especially interesting because of the lunar surface area there that remains in shadow is much larger than that at the North Pole. There is a possibility of the presence of water in permanently shadowed areas around it. In addition, South Pole region has craters that are cold traps and contain a fossil record of the early Solar System. This mission will help us gain a better understanding of the origin and evolution of the Moon by conducting detailed topographical studies, comprehensive mineralogical analyses, and a host of other experiments.