ISRO Launched Satellite HySIS

ISRO launched rocket PSLV-C43 carrying India's earth observation satellite **Hyperspectral Imaging Satellite (HysIS)** and 30 co-passenger satellites from Sriharikota on November 29.

- The **co-passengers of HySIS** include **one micro and 29 nano satellites from eight different countries.**
- The satellite have been projected into a **polar sun-synchronous orbit.**
- HysIS is ISRO's **first full-scale working satellite with Hyper-spectral imaging capability.**
- The space agency tested hyperspectral imaging technology in April 2008, a small 83-kg demonstration microsatellite called IMS-1 (Indian Mini Satellite-1) was launched as a secondary passenger with Cartosat-2A.
- In October, 2008, it put a HySI or Hyperspectral Imager on the Chandrayaan-1 and used it to scan Moon's surface for minerals.

Significance of HySIS

- The primary goal of HySIS is to study the **Earth's surface in visible, near-infrared and shortwave infrared regions** of the electromagnetic spectrum.
- Hyperspectral imaging satellite can see in 55 spectral or colour bands from 630 km above ground.
- 'Hyspex' imaging allows **distinct identification of objects, materials or processes on Earth** by reading the spectrum for each pixel of a scene from space.
- It can be highly useful in marking out a suspect object or person and separate it from the background. This could aid in detecting transborder or other stealthy movements.
- It can be used for a range of activities from monitoring the **atmospheric activity and climate change, studies of Earth's magnetic field, agriculture, forestry, water management, coastal patterns, looking for oil and minerals all the way up to military surveillance.**