

## Brief Bio-data of Dr. D Sam Dayala Dev



Dr. D Sam Dayala Dev,  
Distinguished Scientist / **Former** Director  
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Dr. D Sam Dayala Dev is a Distinguished Scientist and was the Director of IISU from July 1, 2017 to June 30 2023.

Prior to taking over as Director, IISU, he was the Associate Director of IISU and Deputy Director of Advanced Inertial Systems Area which is responsible for the design, development and production of advanced inertial sensors such as ISRO ring Laser Gyro (ILG), Chandrayaan and Mangalyaan fame Ceramic Servo accelerometer (CSA), Advanced Inertial Navigation Systems (AINS) for LVM3 vehicle and Precision Scan mechanisms for Spacecraft payloads. Innovative low cost but high precision MINS-6S, developed under his leadership, has been successfully proven in SSLV-D2 mission. He has more than 38 years of experience in the design, analysis and simulation of inertial sensors, actuators, systems and mechanisms. He has specialized in Rotor dynamics of turbo rotors and momentum wheels, passive vibration control of precision rotors, harnessing micro-vibrations for inertial sensors and actuators. Under his leadership IISU has developed and successfully operating in space including NVS-01 Magnetic levitated Reaction wheels and high dynamic capable Control Moment Gyroscopes for agile Spacecrafts such as Cartosat 3. Currently leading teams in developing autonomous Navigating systems with ultra-stable inertial sensors such as Hemispherical Resonator Gyro (HRG) for long duration missions of ISRO, vision based navigation system for Space Robotics and the Atom interferometer based ultra accurate quantum gyros and accelerometers. These can be installed in submarine for precise navigation and for Geologists looking for mineral deposits by measuring subtle change in gravity.

Synergising the multi domain expertise and knowledge base of IISU teams, he has initiated AI and ML enhanced Space Robotics activity. The Smart Space Robot (SSR), a technology demonstrator for space debris management and Half-humanoid for first unmanned Gaganyaan mission as an astronaut assistant are being developed under his active involvement and leadership. On orbit refuelling technology demonstration is also under development under his leadership.

Dr. D Sam Dayala Dev had graduated in Mechanical Engineering from College of Engineering Guindy, Chennai, did his masters from IIT, MADRAS and PhD from IIT, Guwahati. He has been deputed as mechanical expert for design review in other Space organisations like CNES.

Dr. Sam Dayala Dev is recipient of ISRO Performance Excellence award, ISRO Merit award and few ISRO Team leader and team excellent awards, ISRO-ASI award for performance excellence in Rocket and related Technologies (Rocketry). He is a Fellow of Aeronautical Society of India. He has to his credit various publications in National and International journals and book chapters on advanced manufacturing methods and precision engineering and holds many patents as first inventor.

He is a strong proponent of industrialisation of inertial sensors production in India and has adopted aggressive initiatives to indigenous electronic components involving Indian Academia and Industries.

He is a nature lover and his hobbies are trekking and nature camping.