

Date: 24/5/2024

Report on Industrial Visit to NAL, Bengaluru

The industrial visit of 6th semester students of ECE Branch along with Prof. Suraj Kadli and Prof. Rohini Kallur to **NAL Bengaluru on 22/5/2024** was accompanied by **Mr. Gurupadappa**, Executive of NAL, Bengaluru. The **National Aerospace Laboratories (NAL)** is India's first and largest aerospace research company established by the Council of Scientific and Industrial Research (CSIR) in 1959. The company closely operates with HAL, DRDO, and ISRO and has the primary responsibility of developing civilian aircraft in India. It concentrates on research in advanced topics in aerospace and related disciplines. Based in Bengaluru, the NAL employs a staff of about 2500 people.

NAL is equipped with the Nilakantan Wind tunnel Centre and a computerized fatigue test facility company. NAL also has facilities for investigating failures and accidents in the aerospace engineering domain.

Students visited **Flight mechanics and control division** in which **Mr. Manjunath and Mr. Harish** explained about the flight simulation in 1:1 terrain. Students observed the flight take off and landing operation along with banging of the aircraft. Students understood about the control panel of Civilian Aircraft.

Students visited **Aerospace Electronics and Systems division**, in which **Dr. Shivakumar**, Senior Scientist along with **Mr. Manjunath**, Technician explained about Transmissometer which works on the principle of Photo diode and detector implemented in airports to avoid collisions between aircraft.

Students visited **Acoustic Test Facility**, in which **Sri Mahesh S** explained the students about the different acoustic settings to be done at the aircraft and he demonstrated an experiment to identify the noise generation in a mass through a 360 degree camera and microphone array.

Mr. Anand explained students about the contributions done by NAL to ISRO starting from small sensors to missile launching vehicles. He also explained about the simulation of real bird like silicon structure attacking the aircraft and the effects of the attack.

Mr. Chandrappa explained about the effect of vibrations on the satellite structure and aircraft.

Dr.Satish Nimbyal in **Advanced Composites division** explained our students about composite materials, co curing of the materials and also about the methods used to mould them.

Students discussed with scientists regarding the research carried out @ NAL,Bengaluru such as damage analysis, replacement of wires with optical fibres to increase the shelf life. Students visited **Sub component fatigue test facility Division**, in which scientists demonstrated about the quality checks to be done to ensure that the aircraft is in good condition and also explained about the real time data analysis of Fatigue test done using Electronic Control Room.

Deputy Head of CSIR, NAL **Dr. Naidu** Briefed about the different branches of CSIR across India, Facilities provided by NAL and explained about the achievements of NAL.

Overall the Industrial visit was successful and our students got an insight about Aerospace and researches being carried out at NAL, Bengaluru.

