

An Expert Talk under IIIC on “DESIGN AND MANUFACTURE OF AEROSPACE SYSTEMS”

22nd April, 2014

(Under TEQIP-II)

An expert talk was organized on “Advances in Design and Manufacture of Aerospace Systems” by **Dr. K. Ramesh Kumar**, Scientist ‘G’, Director, Productionisation and Technology Transfer, Defence Research & Development Laboratory (DRDL), Hyderabad under Industry Institute Interaction Cell (IIIC) activity sponsored by Technical Education Quality Improvement Programme (TEQIP-II) on the afternoon of 22.04.2014 by the Department of Mechanical Engineering, Sree Vidyanikethan Engineering College, Tirupati.

During the Session-I on **Design of Aerospace Systems**, the speaker Dr. K. Ramesh Kumar elucidated the components and configuration of missile and propulsion systems. He explained the importance of integrated product development in the aerospace systems, tools required for design and analysis like CAD/CAM, design for manufacture and assembly (DFMA), 3D tolerance analysis, structural optimization and finite element analysis. Later on, Dr. K. Ramesh Kumar illustrated the various tests like structural load test, frequency test and functional test to be conducted before manufacturing the missile systems.



During the Session-II on **Manufacture of Aerospace Systems**, the speaker Dr. K. Ramesh Kumar discussed the CAD/CAM/CAE technologies, advanced manufacturing processes like near net shape processes, metal additive processes, advanced manufacturing concepts like concurrent engineering, just-in-time, six sigma, advanced manufacturing systems like flexible manufacturing, lean manufacturing, agile manufacturing, advanced quality control systems like coordinate measuring machines, laser trackers, computer aided tomography, non destructive testing, advanced materials like composites, ceramics, super alloys, smart materials, welding technologies like friction stir welding, electron beam welding, interpulse TIG welding, capacitor discharge resistance spot welding, magnetic pulse welding and the applications of MEMS in the manufacturing of missile systems. He had given a clear picture on the simulation and manufacturing of various components of missile systems.



Dr. K. Ramesh Kumar, Scientist 'G' addressing the students

The students of Mechanical Engineering got enriched by the interaction with Dr. K. Ramesh Kumar and his knowledge and experience helped them in appreciating the significance of various subjects they are studying for design and manufacture of complex Aerospace Systems.