

Profile of Prof. KSubhas

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Prof. K Subhas is a Graduate in Electrical Engineering from A.U. College of Engineering, Andhra University and a Post Graduate in Electrical Engineering (Specializing in Applied Electronics and Servomechanisms) from Sri G S Institute of Technology, Indore University. He has retired from ISRO, Sriharikota as Deputy Director after serving 38 years in the areas of Electrical ,Instrumentation, Control systems ,Telemetry, Tracking, Telecommand , Quality control and Launch Vehicle Assembly & Integration. He has received ISRO's annual Merit award for the year 2008 and Extension of service for two years from the Govt. of India in view of his meritorious contribution to ISROs various programmes. Post retirement, he has worked for one and half years as an Advisor, R&D., Regen Powertech Pvt. Ltd (Manufacturers of Wind Turbines) and for one year as Professor & Dean R&D in Audi Sankara College of Engineering and Technology,Gudur. He was with MRCET as Professor in the department of ECE from December 2015.

Educational Qualifications:

Qualification	Institution	Year	Specialization
B.E.	A.U. College of Engineering, Andhra University.	1970	Electrical
M.E.	Sri G S Institute of Technology, Indore University.	1973	Applied Electronics and Servo Mechanisms.

Details of Experience In ISRO

1. Significant contributions:

- Design, development and fabrication of prototype models of universal and count down time code readers required for SHAR range.
- Installation, commissioning and operationalisation of all the Tracking Radars at SDSC SHAR.
- Conceiving, development and incorporation of several Interface circuits/units for enhancement of Radars' performance capabilities such as
 - Phase IN/OUT circuit to synchronise Down Range Radars
 - Computer Designate Mode (CDM) unit as an acquisition aid
 - Planning and implementation of on axis tracking methodology
 - calibration of PCMC radars using satellite
 - PC based data processing systems
 - SDC (Synchro to Digital Converters) based angle data processing add on cards with two speed processors
 - New 19 bit solid shaft encoder as replacement for the elevation Hollow Shaft Encoder
- Design, development and commissioning of first of its kind Infrared Astronomy Telescope control system at Mount Abu for PRL.(Physical Research Laboratory)
- Realization of traction control systems for ASLV & PSLV MSTs and SLP MLP from conceptual phase through design review, installation and commissioning.
- Guidance extended to M.Tech students for the following thesis works.
 - PC based adaptive filter for tracking Radar SERVO systems application. The necessary interface Hardware and Software were developed and tested.
 - PC based Radar data smoothing and filtering. The Software was developed, tested and is made operational.
- Guided SSD (Servo System Divn.)Engineers in the commissioning, performance review, improvement and evolving operational methodology for the optical Tracking Mount. & Antenna control systems for antennas at MCF Hasan
- Attended to the problems in NPOL'S and DOD's tracking cum MET Radars onboard their ships 'SAGAR DHWANI' at Cochin and 'SAGAR KANYA' at Goa.
- Realization of Cryo Arm control system right from conceptual phase, design review, installation and commissioning.

- Extended guidance for development, upkeep and maintenance of several other instrumentation and control systems in all entities. Typical such systems are Linacs in SPROB, Shaker Vibration control system, DDC of AC plants, Optical tracking mount, Antenna control systems for MCF, Hassan.
- As Group Director of the Centre's Quality And Reliability Group developed and built a strong and competent team to effectively and efficiently carry out QA and QC functions in all technical activities of our Centre.
- Participated in the Design review and subsequent T&E of the 32 mtr. Deep space antenna commissioned at Byralu, Bangalore for Chandrayan -1.
- As Deputy Director of Vehicle Assembly and Static Test facilities ensured the facilities readiness after through maintenance and T&E to participate in the major missions of PSLV , GSLV and Static tests of HPS3 RLV-TD SB and S200 motors.

2. Other important responsibilities :

As chairman of the committee reviewed the readiness of several important facilities /systems. Some of the most important of them are:

1. Test and evaluation of the modern solid propellant plant with several automation features
2. Flight readiness review of Range Instrumentation Electrical and A/C systems before all major launches
3. Standing review committee for augmentation of electrical and A/C systems along with related automation features.

3. Lecture Programmes :

- Conducted SHAR Centre Induction program for Engineers, Technical Assistants and Tradesmen as faculty member for both servo and electronics disciplines.
- Prepared the course material and delivered lectures on servo control systems.
- Delivered a guest lecture on Programmes of ISRO during the seminar on "Role of engineers in E governance" at Sri Venkateswara University, Tirupathi.
- Delivered a talk on "GPS over view and applications" during STCF/SHAR meet.
- Delivered a lecture on "Range Instrumentation System over view" at Institute of Armament Technology, DRDO, Pune, for their trainee officers.

- Delivered a lecture on “Indian Space Research Programme” at the valedictory function of Department of ECE, GPR Engineering College, Kurnool.
- Delivered lectures on Tracking Radars to the students of MSc.Tech. at Sri Venkateswara university

4. Trainings Abroad:

- Undergone training at DFVLR, Germany for a period of three months on the Calibration, operation and maintenance of AN MPS 36 precision Tracking Radar.
- Visited M/S Asea Brown Boweri (ABB), France for Design review of the Mobile service tower traction control system.

5. Significance of the contributions :

The contributions were considered significant due to the following reasons and thus selected for annual ISRO merit award for 2008 and extension of service by Two years beyond the date of superannuation.

- Most of the systems designed and developed were first of their kind commissioned in our centre as new facilities.
- Many of the up gradation / augmentation activities were self conceived and implemented to improve the systems' performance in terms of quality and reliability
- Several rectification activities were carried out with dedicated effort during critical premission periods to bring the systems up for the launch.
- Incorporation of alternate pick off devices in Radars with out any compromise on accuracy during the crisis of embargo for the original devices.
- Consistent dedicated effort put up during the entire service in all the assigned and self conceived tasks towards achieving ISRO Programmes successfully.

Details of Experience in Regen powertech Pvt.Ltd.

1) Important works carried out and significant contributions:

- a) Review and finalization of purchase specifications for all components and subsystems of Frequency converter Pitch & Yaw control systems and other Electricals.
- b) Development of alternate vendors for and cost optimization of all major components & subsystems of Frequency converter, Pitch & Yaw control systems and other Electricals. Some of the important items are

Pitch motors, Surge Protection devices, ACBs, Ultra capacitors, FO cable assemblies, All varieties of cables and in particular special rubber torsional cables, Chokes, Transformers, Proximity sensors, Generator switches etc.
- c) Preparation and release of PDNs (Product development Notes) for all the newly developed items
- d) Prepared a draft document on lightning protection systems for the new Wd 2.8 Mw WT after a detailed study of all the relevant standards, present practices adopted on similar systems elsewhere, interaction with consultants from Electricon and careful analysis of the advantages and disadvantages of several options/configurations. .
- e) In close interaction with TQM team and other concerned Engineers from R&D, Initiated, technical guidance extended, reviewed and got the important technical documents like Test & Evaluation procedures and Quality assurance Plans prepared for Pitch motors, Control transformers and Inductors. They will help in getting quality & reliable subsystems from the vendors by removing the possible subjectivity during testing and on line quality control/stage level inspection.
- f) Participated in the Vendor assessment / first sample testing for major items like Pitch motors, ACBs, Ultracapacitors, Inductors, Brake resistors, FO cable assemblies, transformers, cables etc. and explained to the participating young engineers the intricate aspects to be looked into during this activity so that this can be independently carried out by them effectively.
- g) Assisted the Sr.Vice President in the overall review and conduct of all the activities of R&D
- h) Discharged the responsibilities as Head E&T for all the Electrical and Electronics systems

2) Visits Abroad:

- a) Visited South Korean Industries for development of Alternate vendors for ACBs, Ultracapacitors, and special purpose cables
- b) Participated in the company's annual Management meet in Malaysia

Details of work carried out In ASCET during the period July 2013 to May 2014

1. Taken **Electronic Devices and Circuits** for the 2nd year 1st Sem. EEE Students.
2. Taken **Power Semiconductor Drives** for the 3rd year 2nd Sem. EEE Students.
3. Detailed lecture notes were prepared, documented and provided to all the students.
4. Power Point presentation was extensively used to explain clearly complex circuit diagrams and waveforms in both the semesters.
5. As member of the Board of studies contributed significantly in the preparation of syllabus for the EEE branch.
6. Extended guidance to all the final year EEE students in their project works.
7. Studied in detail the requirements for meeting the criterion IX for NBA accreditation Programme (Program Educational objectives) and X (Program outcomes) .
Acted as the focal point for preparing the details and ensured that all requirements are complied with
 - a. For Department of EEE for criterion IX and X
 - b. For Departments of EEE, ECE and CSE for criterion IX
8. Coordinated all the R&D activities with different departments of the college and extended support to the Director to pursue this activity.

Details of work carried out In MRCET from December 2015 till date

1. He has taught The subjects '**Principles of Electrical Engineering**', '**Electrical Technology**' and **Signals & Systems** to the students of BTech 2nd year and **Radar Systems** to the students of B.Tech 4th year.
2. Detailed lecture notes were prepared, documented and provided to all the students for all the above subjects.
3. Power Point presentation was extensively used to explain clearly complex circuit diagrams and waveforms in all the semesters.
4. Guided the cofaculty members in the upkeep and maintenance of the ECE laboratories with all technical details during the NBA and JNTU Inspection and Reviews.
5. Assisted the Head, Dept of ECE in the regular conduct of the department's technical activities like conferences, Technical festivals etc.
6. Leading the team of EEE faculty for establishing of Laboratories required for the EEE department.

