

ACTIVITIES - WAVES ELECTRONICS (P) LTD, ALWAYE

MOU SIGNING

Government Engineering college , Thrissur have made several innovative steps in improving the institute relation with industries. As part of improving the institute-industry interaction , a MOU had been signed on 23rd July 2016 at Eastern Amphi , Government Engineering College Thrissur with Waves Electronics (P) Ltd, Kizhakkambalam, Alwaye.

WAVES Electronics Private Limited was founded in 1972 by Mr. C.P. Philipose and Mr. P.I. Chacko, alumni of National Institute of Technology, Warangal, South India. WAVES is today the market leader in the manufacture of Industrial Battery Chargers, Marine Control System, Navigation Light Indicator Panel, Generator Automation, and Automatic Power Factor Correction Control Panel.



MOU signing ceremony



Members Present

Party 1. Waves Electronics Pvt. Ltd

1. Mr.P I Chacko (Managing Director , Waves electronics(P) Ltd) ,
2. Mr.Jayan C B (executive director , waves electronics (P) Ltd) (signed on MOU)
3. Mr.Sankarankutty P (Consultant , waves electronics(P) Ltd)
4. Mr.Varghese Paul(Management Trainee)

Party 2. Govt. Engg. College, Thrissur

1. Dr. K P Indhiradevi (Principal) Signed on MOU)
2. Dr. M Nandakumar(Head,Dept of EE)
3. Dr.Ambilikumar C K (IIC co-ordinator)
4. Dr.B Jayanand(professor , Dept of EE)
5. Prof.Joseph K D, (Asst.Professor , Dept of EE)
6. Dr.Jaison Mathew (Asst.Professor , Dept of EE)
7. Prof.K P Preetha (Asso. Professor, Dept of EE)
8. Prof.Haryhar A S(Asst Professor, Dept of EE)
9. Prof.Lalgy Gopi (Asst Professor, Dept of EE)
10. Prof.Suresh K.Damodaran (Asst Professor, Dept of EE)
11. Prof.Jose Sebastian T K (Asst Professor, Dept of EE)
12. Prof.Binoy B B(Asst Professor, Dept of EE)

By the end of the meeting several decisions were taken in such a way to improve the institute interaction with the industry. Government Engineering college, Thrissur could offer technological assistance to the firm for their variety of projects. At the same time the MoU helped the research fellows in the institute for conducting their research works in an industrial environment especially projects in high power ratings. The industry also offers facilities for Post graduate scholars to conduct their academic Projects as per curriculum and Industrial Training to students of the institute.

ACTIVITIES

1. Industrial Training for Post Graduate Students, Date : 13/07/16 to 22/07/16

M.Tech PE (S3) Students

1. Joseph Mani C.G.
2. Drisya K Sasi
3. Vishnu C.
4. Anooj A.S.
5. Amalraj P.M

WAVES Electronics (P) Ltd is today the market leader in the manufacture of Industrial Battery Chargers, Marine Control System, Navigation Light Indicator Panel, Generator Automation, and Automatic Power Factor Correction Control Panel. It caters to the leaders in Indian industry and exports to countries in South East Asia, Middle East, Europe, and Africa. Waves produces high quality, performance tested and fully certified control systems that provide a stable operation over the complete life cycle. Factory site is located at Kizhakkambalam, Ernakulam district, Kerala. Factory Building has a built-up area of 7000 Square Meters.

Five of Post Graduate scholars in the institute were given a two week industrial training at Waves electronics (P) Ltd. They were given training on the major products of WAVES Electronics : Battery Chargers and Switch Boards .

A battery charger is a device used to put energy into a rechargeable battery by forcing an electric current through it. They are designed to provide the most reliable supply to the batteries to which they are connected. Battery chargers are mainly using for charging the battery bank which is responsible for the supply of control systems such as breaker closing coil, trip coil, indications, protection relays etc. In WAVES Electronics, they manufacture mainly two types of battery chargers viz SCR based chargers and SMPS based chargers. . SCR based

chargers can be either six pulse or three pulse. That is, the rectifier can be full converter or semi converter respectively. The battery chargers manufactured in the firm offers three modes of operations : Boost mode , Float mode and Auto mode.

Recently R & D wing of Waves Electronics (P) Ltd have developed a DC electronic bank. DC electronic load bank is a relatively low-voltage electronic load with high current capability. These DC Loads are used in a wide variety of applications that involve automated testing of power conversion device outputs to simulate real-world loading conditions. It always draws a constant current irrespective of input voltage.

Waves electronics also produce navigation lighting control panel for warships. NLCP is an instrument which enables the ship crew to operate the lighting mechanism of the ship from a single room under any situations. It basically consists of PLC (Programmable Logic Control) which will monitor and control both AC system as well as DC system. All the components used for the production of NLCP are designed to work properly under any harsh conditions like storm, extreme radiation etc.

2. Battery Charger Testing 29.07.2016&30.07.2016

Two Post graduate students from M.Tech. (S3) Power Electronics students

- a. Anooj A.S.
- b. Amalraj P.M.

represented GEC Thrissur and witnessed testing of Battery chargers at Waves Electronics Pvt. Ltd, Kizhakkambalam, Alwaye.

Equipments tested

1. Battery Charger 15A, 110V DC
2. Battery Charger 30A, 110V DC
3. Battery Charger 60A, 110V DC

The following tests conducted

- Functional test
- No load test
- Voltage regulation test
- Efficiency test
- Ripple test
- Insulation Resistance Test

- Annunciation test (Alarm and indication test)
- Temperature rise test

3. ACADEMIC PROJECT :

Name of Student: Joseph Mani, M.Tech. S3. Power Electronic student.

Title : DC-DC Converter for industrial float cum boost charger

A Post graduate scholar of the Institute was offered facilities to conduct the academic project in the industry as per the MOU. The project has been started on August 1,2016 and is ongoing. The objective of the project is to design and develop a Dc-Dc converter topology for industrial single phase float cum boost charger. Since the project requires devices and equipments with high power rating , a state of art industrial atmosphere in Waves Electronics can be utilized for implementing the proposed topology.

4. PROJECT PROPOSAL

A project proposal has prepared and submitted to **Kerala State Council for Science, Technology and Environment**, Thiruvananthapuram for ENGINEERING AND TECHNOLOGY PROGRAMMES on 09.09.2016.

The details of project proposal are given below

- a. Title of the Research Project Proposal: Reduction of ripple current and performance improvement in interleaved DC - DC Converter for high power applications.
- b. Broad Area: DC-DC converters, **This project is intended to design and develop a DC-DC converter with high power handling capability.** Testing of the converter with industrial load at Waves Electronics Pvt. Ltd., Alwaye.
- c. Principal Investigator : Dr. Jayanand B, Professor, Dept. of EE.
- d. Co-Investigator : Prof. Joseph K.D., Assistant Professor, Dept. of EE
- e. Total Cost : 38.5 lakhs
- f. Project Duration : 36 months