

**Report on 2 day workshop on “HAPTICS” by Robogenesis, Bangalore
on 22 & 23 February 2016 as part of Magnovite 2016.**

22 February 2016

The workshop was formally inaugurated at 09:30am by **Prof.Dr.P.PalPandian** with an inspiring and thought provoking speech on robotics. The trainer from Robogenesis **Mr.Sidhardh Sharma** a robotics engineer was introduced to the participants of the workshop from different parts of Karnataka and Tamil Nadu and the training commenced.

There are **80** participants from all over Karnataka and Tamilnadu and they were divided into **16** teams. All 16 teams were given an insight of Haptics and its scope by the trainer for two hours and refreshments were given. After a short break of 10 minutes sessions continued and the participants were trained on the very basic coding to control a motor using a microcontroller different problem statements were given and were given enough time for understanding.

In the afternoon session the teams were given the microcontrollers and they were trained to code them to control various actions to be performed by the motor. This went on till evening and the day's sessions were winded up with another problem statement as assignment.

23 February 2016

The training started at 09:30am, with the solution for the previous day problem statement. The day was tightly packed with lots of information and the fabrication of the robotic arm. The coding of the chip was done and the fabrication of the robotic arm started. In a short time of just one and a half hour the fabrication was done with very less instructions from the trainer, totally driven by the enthusiasm of the teams.

As told always “Success is the result of hard work” the teams were delighted to see their robotics arm moving with the help of another motor the robots started rotating . Sensors were fit on the hands of the team members and they were controlling the robotic arm. Thus 16 teams of 5 members in every team were given the hands on experience on Haptics.

The course content which was followed in the workshop is mentioned below:

- Introduction
 - Introduction to Haptics
 - Application of Haptics
- Basic parts of a Robot
 - Mechanical System
 - Design Criteria
 - Statics and dynamics of a robotic arm
 - Power Supply System
 - Actuators
 - Servo motor
 - DC motor

- Control System
 - Microcontrollers and microprocessors
 - Installing and using WinAVR
 - Installing Drivers
- Sensors
 - Feedback sensors
 - Potentiometer
- Hands On Session
 - Construction of the robotic arm
 - Construction of the Haptic Glove
 - Interfacing the glove and the robotic arm
 - Programming the microcontroller
 - Hardware connections

The validictory function for the two days workshop was conducted at around 05.00pm. **Prof.Glady Jacob** and **Prof.Dr.P.Pal Pandian** were issued the certificates to the participants.

Three members team of student volentees Mr.Geou Akshil, Mr.Rahul Thiwari, Mr.Manikantan were also appreciated during the validictory function.



Dr. P. Pal Pandian