Key academic courses projects

1. **Development of a low cost, porous Machinable Glass-Ceramic composite** **[May 2011-till date]**

Guide: Prof. Parag Bhargava *Summer Project*

- Did an extensive litreture survey on machinable glass ceramic and made a binary composition of low cost materials and found out a nobel route by which machinability of sintered samples could be found.
- The samples so formed were tested and examined using vicker's hardness test, SEM, LASER diffraction and surface roughness analysis test.
- The abstract of the work done is sent for the Indian Ceramic Society (ICerS) for the Annual Conference in Agra in December.

2. Screw dislocation in metals **[March 2010]**

Guide: Prof. Dr. A. S. Panwar *Course Project*

- Did extensive literature survey in the **formation of screw dislocation defects in metals, how disadvantageous they are for metal structures**, **how they traverse and the preventive measures** to be taken to prevent it.
- Made a **working model** to explain how the dislocation traverses through the lattice sites.

3. Self repairing polymer composites **[Feb.2010]**

Guide: Prof. Dr. A. S. Panwar *Course Project*

- Did an extensive study in **structural, physical and chemical properties** of these materials, their **implications and its economic feasibility.**
- The work done was presented to the entire batch using a presentation.

4. Structural analysis of Eiffel Tower **[November 2010]**

Guide: Prof. Dr. Narsimhan *Course Project*

- Did a **structural analysis** of the Eiffel tower and made a **model and gave a presentation** on the same.
- Studied the **beam structure and the design aspects** of the structure and **its economic feasibility**.

5. UID (Unique fingerprint identification system) **[October 2009]**

Guide: Prof. D. B. Phatak ***Course Project***

- Involved in the **firmware development** of one of the **largest collaborated student program** built in institute, which currently fully developed and its now used to take attendance of the current first year students.
- **Developed the code for registering information** from a segment and then **tagging** it with a required set of information so that the next segment could use it.

Projects

1. ABU Robocon 2011 **[Dec. 2010 – March 2011]**

Guide: Prof. Dr. C. Amarnath

- ROBOCON is the Asia's biggest student level robotics competition, which involves designing and making manual and autonomous machines to implement certain pick and place tasks.
- Played a pivotal role in the 20 membered team and with a budget of INR 4,00,000 to design , manufacture and automate machines that could efficiently place blocks at specified location with precision.
- Responsible for the **entire designing, prototyping and manufacturing of the manual machine.**
- **Most successful manual machine of the event that could complete 100%** of the task and could score the maximum in the whole competition and the **most efficient and lightest gripper assembly** of all the teams etc., were some the major technical achievements of the team.
- 2nd (out of 61) in the National level ROBOCON in Pune and awarded the best autonomous robot and best design.

2. ABU Robocon 2010 **[Dec. 2009 – March 2010]**

Guide: Prof. Dr. C. Amarnath

- Responsible for the **entire designing, prototyping and manufacturing of the manual machine and conceptualizing the autonomous machines.**
- **Most successful manual machine of the event that could complete 80% of the given task** in 90 seconds, the **most efficient and lightest gripper assembly** of all the teams etc., were some the major technical achievements.
- Ranked 4th (out of 54) in the national level ROBOCON competition held in Pune.

3. Roboliga **[May 2010-June 2010]**

- Roboliga is a robotics competition conducted by **TRI** (Thinklabs Research Institute) at national level, which involves making manual and autonomous machines to perform certain pick and place tasks.
- Played a pivotal role in **designing and manufacturing the manual machine and designing the most efficient gripper in the whole of the competition.** Responsible in the **algorithm design** and **firmware development on an 8bit microcontroller** for the autonomous machine and its **wireless communication** to the computer using CC2500 transceivers.
- Secured **1st position at the nationals** held in Mumbai and received best indigenous award for the manual machine

Current Academic courses

1. Ceramic processing technique
2. Ceramics and Powder metallurgy
3. Mechanical behavior of materials
4. Phase transformations
5. Heat treatment lab
6. Mechanical testing lab

Computer skills

Programming language: c++, Matlab **Cad designing:** Solidworks **Microcontroller experience:** ATMEL AVR

Operating systems: Windows, Mac

Position of responsibility

Photography and Fine Arts Secretary **[July 2010-April 2011]**

- Conducted photography and fine arts workshops for over 200 students. Taught the basics of Adobe Photoshop and movie making and editing.
- Responsible in acquiring funds and the purchase of Hostel Camera and conducted inter wing photography competition. It saw over 1000 entries and participation from more than 100 students.