RAJALAKSHMI ENGINEERING COLLEGE

Thandalam, Chennai – 602 105

DESIGN COMPETITION for Third year B.E./B.Tech. Students

(Students of Rajalakshmi Engineering College only)

Organized by TIFAC-CORE REC

Important Instructions

Register Your Team (Not more than 4 persons)

Click the following link **(Press Ctrl & Click)** to register
https://spreadsheets.google.com/spreadsheet/viewform?formkey=dHhGYjhITmN2MkpfV2lyT2x4NFFfUnc6MQ

Titles for Design (specification given below)

- o Vision Based Sorting Robot
- o Mosaic Creation with Vision Assisted Cartesian Robot

Dates to Remember

- o **Last date for Registration**: 06th July 2011
- o **Last date for submitting of design proposal**: 17th August 2011
- o **Presentation** on 19th August 2011
- o **Selected project implementation**: By end of January 2012

* Assistance may be taken from TIFAC CORE members through e-mail queries or through personal contacts between 3.30 pm to 5.00 pm.

SPECIFICATION FOR DESIGN

VISION BASED SORTING ROBOT

A basket will contain colour plastic cuboids. The vision assisted robot needs to pick up the cuboids and place them in the appropriate colour baskets. (Sorting)

The following are the general specification of robot:

- Articulated configuration
- 3 axis
    - Hip joint (twisting)
    - Shoulder joint (revolute)
    - Elbow joint (revolute)
- Robot reach(with two arms fully extended)- 750mm
- Payload of 0.5 Kgs
- Two-jaw gripper (motorized) to be attached to the end effectors. The gripper should have a roll motion.

  The design must be on solid works or Pro-E, Solid Works or Catia. The type of motors, actuators, grippers and Electrical drive to be specified. The software can be developed in Lab VIEW/ MATLAB/C++

MOSAIC CREATION WITH VISION ASSISTED CARTESIAN ROBOT– SPECIFICATIONS

The vision assisted robot needs to take multiple images (sequentially) of a scene and process it after adding it.

The following are the general specification:

- Cartesian configuration
- 3 axis (X-Y-Z)
- X-Y movement limited to 1000mm x 750mm, Z movement to 150mm.
- Payload of 250 grams

The design must be on solid works or Pro-E, Solid Works or Catia. The type of motors and Electrical drive to be specified. The software can be developed in Lab VIEW/ MATLAB/C++