

Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website www-csc.utt.fr)

Supervisor's name : Given names :

Status (prof., assistant prof., ...):

Laboratory : Website address :

Institution : Website address :

Scientific competence of the supervisor:

Design, modelling and dynamic identification of multi-body mechatronic systems and their control.

Two major publications in the field proposed for the PhD :

1.
2.

Website address of the personal page :

Supervisor's email :

Description of the research work proposed for a PhD

Topic # (see list) :

Title :

Subject :

1. Literature review on elastic and dynamic identification of parallel robots. Will be discussed during this literature review, aspects of modeling, identification and compensation of all vibratory effects degrading the positioning accuracy. First, the stiffness of the angular ball bearing joints will be studied.
2. Increase accuracy of the elasto-static and elasto-dynamic models of the planar 3RRR robot obtained through the ADAMS Software.
3. Experimental validation of the methods on the planar 3RRR parallel robot available at the laboratory: elasto-geometric calibration, dynamic calibration, verification of the elasto-dynamic modelling by identifying the modal cartography of the structures by experimental modal analysis.
4. Study the extension of the computed torque control scheme using the elasto-dynamic model and the estimated values of the significant contributing parameters.

Keywords :

Expected collaborations :

Background required from the applicant :

The candidate must have skills in :

- Modeling, analysis, simulation and optimization of mechatronic systems ;
- Robotics ;
- Modeling and control of robots (MATLAB, CATIA, ADAMS)

Skills in signal processing, vibrations analysis and experimental modal analysis will be appreciated.

Existence of a PDF file detailing the proposal ("yes" or "no") :

(see guidelines on the website www-csc.utt.fr)