Flexible Integrated Multifunctional Robot Cell Design

Summary

Taltech School of Engineering, Department of Mechanical and Industrial Engineering offers a 4-year PhD position in Smart Manufacturing.

Research field:	Mechanical engineering
Supervisors:	Tauno Otto Jüri Riives
Availability:	This position is available.
Offered by:	School of Engineering Department of Mechanical and Industrial Engineering
Application deadline:	Applications are accepted between June 01, 2020 00:00 and July 03, 2020 23:59 (Europe/Zurich)

Description

Manufacturing companies must ensure high productivity and low production cost in rapidly changing market conditions. At the same time products and services are evolving permanently. In order to cope with those circumstances, manufacturers should apply the principles of smart manufacturing together with continuous processes improvement. Smart manufacturing is a concept where production is no longer highly labour-intensive and based only on flexible manufacturing systems, but production as a whole process should be monitored and controlled with sophisticated information technology, integrated on all stages of the product life cycle.

The purpose of the research is to find possibilities to integrate existing robot cells into multifunctional workplaces where enterprises can use to maximize the functionality and flexibility of a processes. The research includes determining and modelling parameters, also constraints for cell design principles, together with simulations.

Responsibilities and tasks:

- Research on the defined topic
- Smart manufacturing environment development and integration
- Representation of the research group at events, conferences, demos

The applicants should fulfill the following requirements

Mandatory:

- Master’s degree in production engineering or corresponding qualifications
- Experience in research
- Experience in the field of:
  - Industrial processes
  - Robotics
  - Mechanical engineering
  - 3D simulations (CAD, CAM)

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