



Laboratory of Robotics

Principal goals and activities

- Development of industrial and service robots for specific applications.
- Development and system integration of industrial robots into robotized technology systems.
- Research and development of new types of robot effectors, especially gripping heads.
- Design of product-friendly handling of fragile, hot objects or objects that are of unstable shape.
- Providing of expert education in the accredited courses, lifelong education and special training for companies and institutions.

Specific instruments and outcomes

- Industrial robots: KUKA – KR 90, 2x KUKA – KR 16, KUKA – KR 3, KUKA – KR 5 SCARA, ABB – Flex Picker IRB 360.
- Mechatronic components, servo drive systems, etc.
- Service robot for cleaning and inspection of building facades.
- Gripping component using new materials with high level of adhesion.
- New technology for mechanical processing of flat glass.

General focus of laboratory

The unique laboratory includes several robotized model station cells for handling, technology and assembly applications. Software for virtual simulation of the layout of robotized cells is also available. The laboratory has at its disposal equipment for predictive testing of automation equipment.

- Service robotics from base research to functional prototypes.
- Investigation of contact tasks in the handling of products; this is expanded to static and dynamic loads in terms of industrial processes.
- Computer analysis of contact tasks.
- Preparation of a virtual model for a set or a problematic design node.
- Optimization of parameters in handling equipment for minimum loads applied to the object being handled and to the gripping head.
- Development of specific effectors and gripping components.

