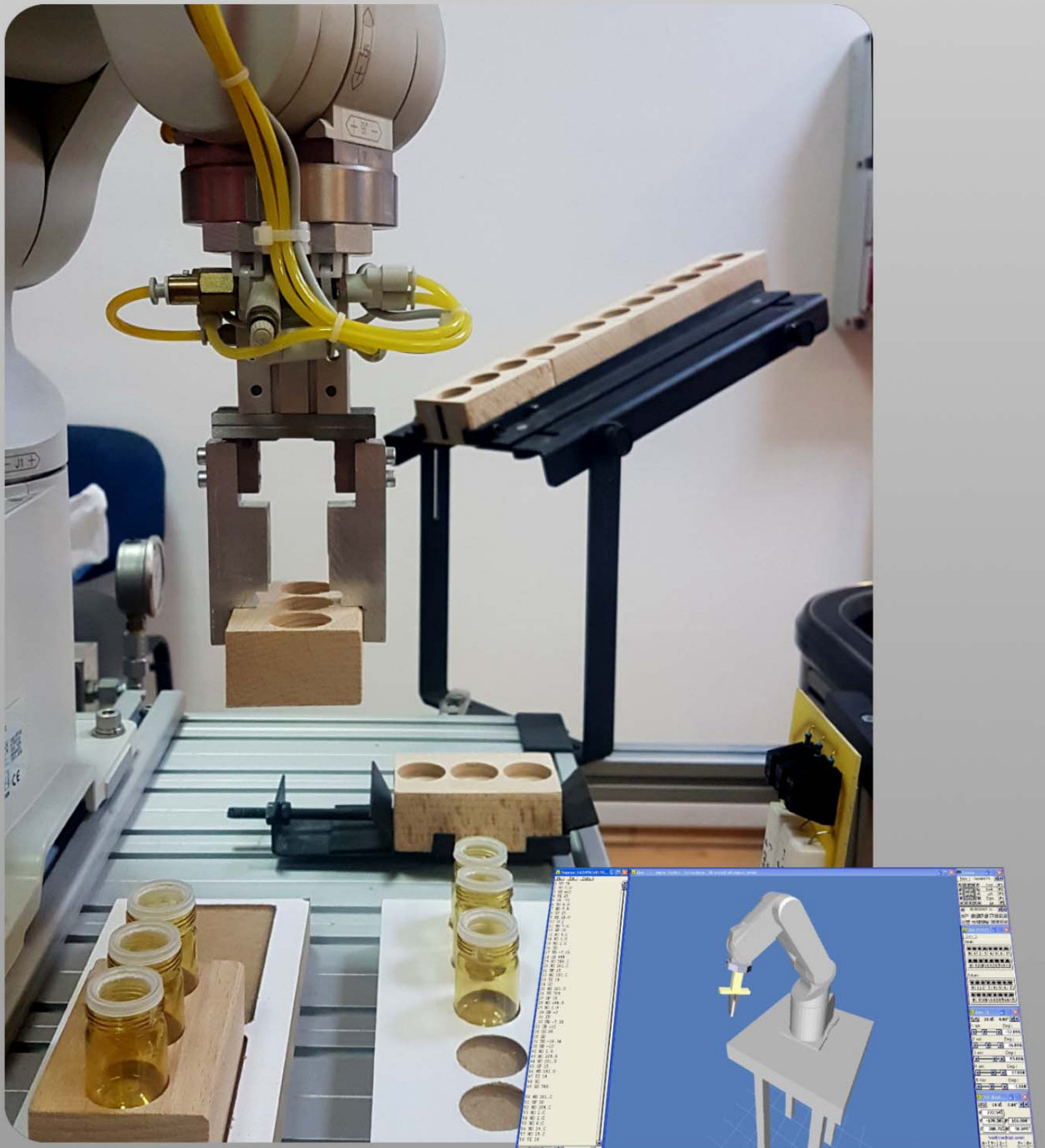



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**COMPUTER INTEGRATED
MANUFACTURING
- APPLICATIONS -**

*Experience without theory is blind, but theory without experience
is mere intellectual play.*

(Immanuel Kant)

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Today, the producers need flexible and intelligent manufacturing systems, able to adapt quickly and cost effectively to market dynamics.

In recent years the fourth industrial revolution arised, based on cyber-physical systems, which involves, among others, the integration of the production equipment and the use of powerful tools for simulation and data processing.

The aim is to optimize the resources and energy to ensure a quick adaptation to the market requirements, to meet the environment regulations and to guarantee the increase of profit.

Obviously, all these concepts are particularly useful, but to benefit of them, it is first necessary to understand how to control and exploit the equipment in a production system. It is also necessary to develop skills on how to program and control the equipment of a production system (robots, CNC machines, storage and transport systems, sensors, PLCs, etc.).

This digital book contains 16 units addressing various aspects of the manufacturing: modeling and simulation of production lines, performance analysis of production systems, optimization, programming of several types of industrial robots and PLCs, etc.

Each unit includes practical examples that explain the theoretical concepts. Exercises are also proposed for solving to strengthen the acquired knowledge.