

Technical University of Košice  
Faculty of Mechanical Engineering

# **PRODUCTION PROCESSES AND SYSTEMS DIGITALIZATION**

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## Preface

Digital modeling and simulation of processes and systems are now increasingly important in all fields of economic activity. This fact results from the needs of industrial practice, for which the issue of verification and validation of production process and system designs is necessary primarily from the aspect of cost savings. This monograph focuses on the research of state-of-the-art software products and systems into real business practice, using the examples of the Tecnomatix Process Simulate software module from Siemens.

Product lifecycle management can be defined as a set of product-oriented software tools. It covers product design, product construction, production design, production technology design, warehouse management and, last but not least, the disposal of production-related waste. The information generated in these processes is used by the designer, technologist, industrial engineer, product manager, manufacturer, customer, waste disposer and many others. The basic gist is that they are all working with the same information at any given point in time. Modeling and simulation of production are not dealt with in a one-off manner. Because they are made up of multiple components, they are built incrementally, and it is the integration of these components that ultimately creates an enterprise-wide solution. Modeling and simulation using these systems should be primarily intended for industrial production.

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