

1. Record Nr.	UNINA9910831009603321
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Titolo	CIRP Novel Topics in Production Engineering: Volume 1 [[electronic resource] /] / edited by Tullio Tolio
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-54034-4
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (362 pages)
Collana	Lecture Notes in Mechanical Engineering, , 2195-4364
Disciplina	670
Soggetti	Industrial engineering Production engineering Production management Engineering design Computer-aided engineering Industrial and Production Engineering Production Engineering Design Computer-Aided Engineering (CAD, CAE) and Design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I. STC A - LIFE CYCLE ENGINEERING AND ASSEMBLY -- Chapter 1. AI-based pose estimation of human operators in manufacturing environments -- Chapter 2. Seamless human-robot collaboration in industrial applications -- Part II. STC C – CUTTING -- Chapter 3. Leveraging Transients and Material Properties to Improve Machining Material Removal -- Part III. STC DN – DESIGN -- Chapter 4. Modelling, Design and Simulation as-a-Service based on Extended Reality (XR) in Industry 4.0 -- Part IV. STC E - ELECTRO-PHYSICAL, CHEMICAL, LASER, AND RELATED ADDITIVE MANUFACTURING PROCESSES -- Chapter 5. Material extrusion-debinding-sintering as an emerging Additive Manufacturing process chain for metal/ceramic parts construction -- Part V. STC M – MACHINES -- Chapter 6. Tool path planning and feed scheduling for time-dependent processes -- Part VI. STC O - PRODUCTION SYSTEMS AND ORGANIZATIONS -- Chapter 7. Decision making for fast productivity ramp-up of manufacturing systems --

Chapter 8. Artificial Intelligence for Production Management and Control Towards Mass Personalization of Global Networks -- Part VII.
STC P - PRECISION ENGINEERING AND METROLOGY -- Chapter 9.
Atomic and Close-to-atomic Scale Manufacturing: the Fundamental Technology of Manufacturing III.

Sommario/riassunto

This is the first volume in the CIRP Novel Topics in Production Engineering (CNTPE), a collection of essays addressing novel research areas in production engineering, published regularly in book volumes. Each essay provides a systematization and explanation of a technology, an approach, a process, etc., and covers a novel research area once it has been published in the scientific literature for several years. The essays provide focused and structured knowledge of a defined and limited subject in terms of detailed implementation, a systematic description of theoretical hypotheses and results, constructive and design characteristics for a product/process or experiment, and exemplary applications to real cases. These constitute the background knowledge for scientists/professionals to approach a novel scientific and technological area - addressing background concepts, relevant tools and methodologies, language, and theory.
