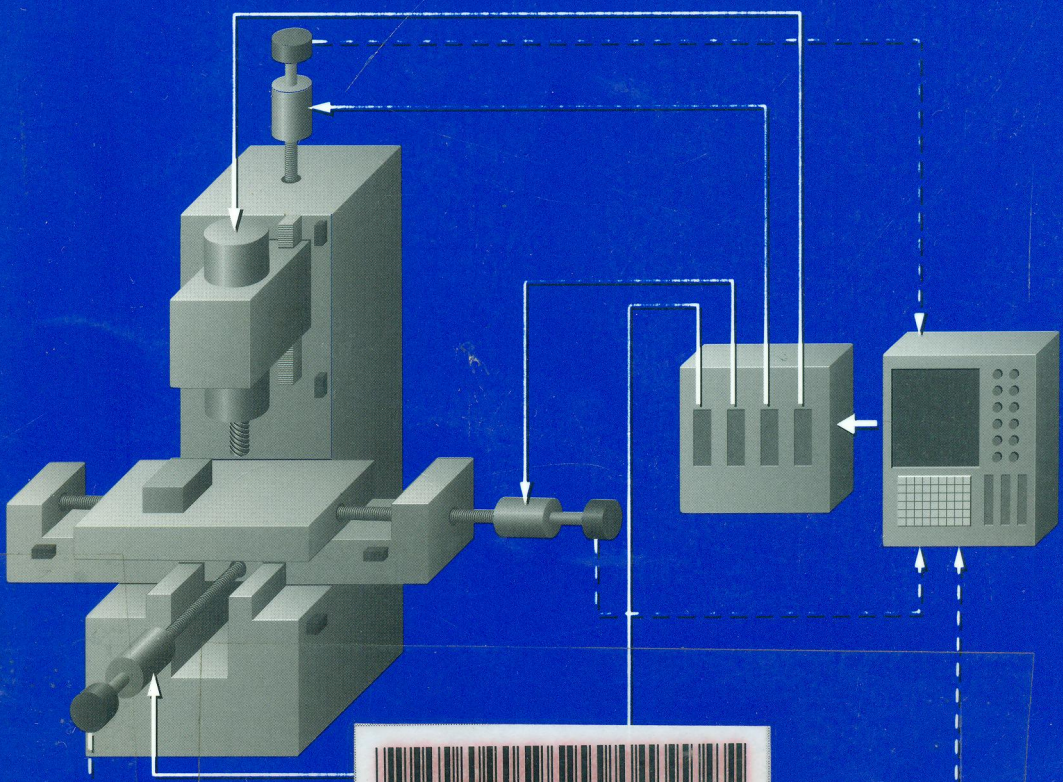
Manufacturing Automation

Metal Cutting Mechanics, Machine Tool Vibrations, and CNC Design



Yusuf Altintas

MANUFACTURING AUTOMATION

Metal cutting is one of the most widely used methods of producing the final shape of manufactured products. The technology involved in metal cutting operations has advanced considerably in recent years along with developments in materials, computers, and sensors.

This book treats the scientific principles of metal cutting and their practical application to solving problems encountered in manufacturing. The subjects of mathematics, physics, computers, software, and instrumentation are discussed as integration tools in analyzing or designing machine tools and manufacturing processes.

The book begins with the fundamentals of metal cutting mechanics. Basic principles of vibration and experimental modal analysis are applied to solving problems on the shop floor. A special feature is the in-depth coverage of chatter vibrations, a problem experienced daily by practicing manufacturing engineers. The essential topics of programming, design, and automation of CNC (computer numerical control) machine tools; NC (numerical control) programming; and CAD/CAM technology are fully discussed. The text also covers the selection of drive actuators, feedback sensors, modeling and analysis of feed drives, the design of real time trajectory generation and interpolation algorithms, and CNC-oriented error analysis in detail. Each chapter includes examples drawn from industry, design projects, and homework problems.

Advanced undergraduate and graduate students, as well as practicing engineers, will find this book a clear and thorough way to learn the engineering principles of metal cutting mechanics, machine tool vibrations, CNC system design, sensor-assisted machining, and CAD/CAM technology.

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Bạn đang có trong tay thông tin cơ bản của một trong số những tài liệu có hàm lượng chất xám cao, với những thông tin vô cùng hữu ích cho quá trình học tập và nghiên cứu của bản thân bạn !

Bạn đã và đang trải qua những ưu tư, trăn trở của bản thân mình trước biển kiến thức mênh mông vô hạn và đang tìm hướng đi cho riêng mình bằng việc biến kiến thức thành tài sản tri thức của riêng bạn !

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Thông tin tài trợ!

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