《计算机集成制造》

图书基本信息

书名：《计算机集成制造》

13位ISBN编号：9787111146872

10位ISBN编号：7111146875

出版时间：2004-7

出版社：机械工业出版社

作者：雷格

页数：574

版权说明：本站所提供下载的PDF图书仅提供预览和简介以及在线试读，请支持正版图书。

更多资源请访问：www.tushu111.com

《计算机集成制造》

内容概要

理解一个全方位的CIM解决方案的运作，需要掌握传统制造实践的知识，洞察CIM的当前状态，考虑现在的技术和操作规程在将来会如何变化。整合产品设计技术和制造基本原则，并关注在整个企业中支持CIM的不断变化的运作和信息系统，会使计算机集成制造技术成为制造行业中独一无二的关键技术。

本教材专为技术人员和工程人员全面了解计算机集成制造技术而写，它具备以下特点：

●描述了世界各地企业所采用的不同类型的制造系统或生产策略，并展示了如何运用技术来解决实际的工业问题。

●讲述的内容超出了自动化机器和软件解决方案的描述范围，以便讨论成功实现一个CIM所必需的所有因素。

●讨论CIM对一个企业的所有重要因素(产品设计、车间技术以及制造生产和操作控制系统)的影响。

●提供了一个令人信服的论据，来说明实现CIM会使企业在全球市场中更具有竞争力。

本书在旧版基础上经过彻底更新和扩展以包含最新的重要信息，同时本书还有另一个令人激动的新特点——一张包含WinMan软件的演示版本的光盘。这个有价值的工具会帮助读者理解一个现代的数据驱动的系统如何帮助公司更好地管理数据和运管。

《计算机集成制造》

作者简介

James A. Rehg是宾夕法尼亚州立大学阿尔纳分校工程系的副教授，教授电子机械工程技术专业的自动化控制课程。他撰写了5本自动化和机器人技术方面的专著并发表了大量的专业论文。他因为在教学领域里的杰出成绩而多次获得嘉奖，并被社区大学评论员协会评为全国优秀导师。

《计算机集成制造》

书籍目录

PrefacePART I. INTRODUCTION TO CIM AND THE MANUFACTURING ENTERPRISE. 1. The Manufacturing Enterprise. Introduction. External Challenges. Internal Challenges. World-Class Order-Winning Criteria. The Problem and a Solution. Learning CIM Concepts. Going for the Globe. Summary. Bibliography. Questions. Problems. Projects. Appendix 1-1: The Benefits of a CIM Implementation. Appendix 1-2: Technology and the Fundamentals of an Operation—Authors'Commentary. 2. Manufacturing Systems. Manufacturing Classifications. Product Development Cycle. Enterprise Organization. Manual Production Operations. Summary. Bibliography. Questions. Projects. Case Study: Evolution and Progress—One World-Class Company's Measurement System. Appendix 2-1: CIM as a Competitive Weapon. PART II. THE DESIGN ELEMENTS AND PRODUCTION ENGINEERING. 3. Product Design and Production Engineering. Product Design and Production Engineering. Organization Model. The Design Process: A Model. Concurrent Engineering. Production Engineering. Summary. Bibliography. Questions. Projects. Case Study: Repetitive Design. 4. Design Automation: CAD and PDM. Introduction to CAD. The Cost of Paper-Based Design Data. CAD Software. CAD: Yesterday, Today, and Tomorrow. Application of CAD to Manufacturing Systems. Selecting CAD Software for an Enterprise. Product Data Management. Summary. Bibliography. Questions. Projects. Appendix 4-1: Web Sites for CAD Vendors. Appendix 4-2: B-Splines to NURBS. Appendix 4-3: Web Sites for Computer Companies. 5. Design Automation: CAE. Design for Manufacturing and Assembly. CAE Analysis. CAE Evaluation. Group Technology. Production Engineering Strategies. Design and Production Engineering Network. Summary. Bibliography. Questions. Problems. Projects. Appendix 5-1: Ten Guidelines for DFA. Appendix 5-2: Web Sites for CAE Vendors. Appendix 5-3: Web Sites for Rapid Prototyping Vendors. PART III. CONTROLLING THE ENTERPRISE RESOURCES. 6. Introduction to Production and Operations Planning. Operations Management. Planning for Manufacturing. MPC Model—Manufacturing Resource Planning (MRP II). Production Planning. Master Production Schedule. Inventory Management. Planning for Material and Capacity Resources. Introduction to Production Activity Control. Shop Loading. Input-Output Control. Automating the Planning and Control Functions. Summary. Bibliography. Questions. Problems. Projects. Appendix 6-1: Priority Rule System. 7. Detailed Planning and Production-Scheduling Systems. From Reorder-Point Systems to Manufacturing Resource Planning (MRP II). Material Requirements Planning. Capacity Requirements Planning. Manufacturing Resource Planning. Features of Modern Manufacturing Planning and Control Systems. Summary. Bibliography. Questions. Problems. Projects. Appendix 7-1: Wright's Bicycle Example. Appendix 7-2: ABCD Checklist. Appendix 7-3: An ERP Example Using WinMan. 8. Enterprise Resources Planning, and Beyond. MRP II: A Driver of Effective ERP Systems. Information Technology. The Decision to Implement an ERP System. Identifying ERP System Suppliers. Developing Technologies: Converging and Enabling. Integrating Systems to Manage Design Data. Summary. Bibliography. Questions. Projects. 9. The Revolution in Manufacturing. Just-in-Time Manufacturing. Synchronized Production. The Emergence of Lean Production. Modern Manufacturing Systems in a Lean Environment. Summary. Bibliography. Questions. Projects. Case Study: Production System at New United Motor Manufacturing, Part 1. Case Study: Production System at New United Motor Manufacturing, Part 2. PART IV. ENABLING PROCESSES AND SYSTEMS FOR MODERN MANUFACTURING. 10. Production Process Machines and Systems. Material and Machine Processes. Flexible Manufacturing. Fixed High-Volume Automation. Summary. Bibliography. Questions. Projects. Appendix 10-1: History of Computer-Controlled Machines. 11. Production Support Machines and Systems. Industrial Robots. Program Statements for Servo Robots. Programming a Servo Robot. Automated Material Handling. Automatic Guided Vehicles. Automated Storage and Retrieval. Summary. Bibliography. Questions. Projects. Case Study: AGV Applications at General Motors. 12. Machine and System Control. System Overview. Cell Control. Proprietary Versus Open System Interconnect Software. Device Control. Programmable Logic Controllers. Relay Ladder Logic. PLC System and Components. PLC Types. Relay Logic Versus Ladder Logic. Computer Numerical Control. Automatic Tracking. Network Communications. Summary. Bibliography. Questions. Projects. Appendix 12-1: Turning G Codes. 13. Quality and Human

《计算机集成制造》

Resource Issues in Manufacturing. Quality Foundations. Total Quality Management. Quality Tools and Processes. Defect-Free Design Philosophy. The Changing Workforce. Self-Directed Work Teams. Summary. Bibliography. Questions. Projects. Index.

《计算机集成制造》

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:www.tushu111.com