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| Nota di contenuto | The Competitive Edge -- Copyright -- Preface -- Contents -- Executive Summary -- 1 Overview -- CHANGING GROUND RULES OF MANUFACTURING COMPETITIVENESS -- A THREE-PRONGED THEORETICAL BASIS -- Information -- Integration -- Intelligence -- BARRIERS TO COMPETITIVENESS -- Inflexible Organizations -- Inadequate Technology Base -- Inappropriate Performance Measures -- Lack of Career Esteem -- STEPS FOR CHANGING -- FINDINGS OF THE PANELS -- Intelligent Manufacturing Control -- Equipment Reliability and Maintenance -- Advanced Engineered Materials -- Product Realization Process -- Manufacturing Skills Improvement -- VISION -- NOTES -- 2 Intelligent Manufacturing Control -- IMPORTANCE -- VISION -- PRESENT AND FUTURE PRACTICE -- Manufacturing Assumptions -- An Architecture for IMC-the World Model -- Integration -- Control -- Intelligence -- Case Studies -- IMC in the Wire-Drawing Industry -- IMC in the Chemicals Industry-Five Years from Today -- PRIORITIZED RESEARCH RECOMMENDATIONS -- |

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To maintain competitiveness in the emerging global economy, U.S. manufacturing must rise to new standards of product quality, responsiveness to customers, and process flexibility. This volume presents a concise and well-organized analysis of new research directions to achieve these goals. Five critical areas receive in-depth analysis of present practices, needed improvement, and research priorities: Advanced engineered materials that offer the prospect of better life-cycle performance and other gains. Equipment reliability and maintenance practices for better returns on capital investment. Rapid product realization techniques to speed delivery to the marketplace. Intelligent manufacturing control for improved reliability and greater precision. Building a workforce with the multidisciplinary skills needed for competitiveness. This sound and accessible analysis will be useful to manufacturing engineers and researchers, business executives, and economic and policy analysts.