Call for Book Chapter(s) Proposals

1. Title: Industry 4.0 and Smart Manufacturing: Foundations, Technologies, and Future Frontiers

2. Editors

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3. Overview and Rationale: This book provides a comprehensive, interdisciplinary, and application-focused guide to Industry 4.0 and Smart Manufacturing. As the global manufacturing sector undergoes digital transformation, there is a critical need for a definitive resource that integrates foundational theory with technological enablers, implementation strategies, and real-world case studies. The book is intended for:

- Academics and researchers in industrial engineering, manufacturing, and computer science
- Industry professionals and managers
- Graduate students and policy makers
- It should offer structured, chapter-by-chapter progression from the basics to advanced applications, along with forward-looking insights into sustainable manufacturing.

4. Scope of Contributions

- Combines technical depth with strategic management and policy perspectives.
- Covers core technologies (AI, digital twins, IIoT) alongside integration and implementation.
- Includes case studies from the automotive, aerospace, education and electronics sectors.
- Addresses workforce development, transformation and required skilled trades.
- Forward-thinking content on green manufacturing.

4. Targeted Audience

- Academic institutions (graduate/undergraduate courses in industrial and manufacturing systems, AI, and automation)
- Industrial R&D divisions
- Government and policy agencies focused on advanced manufacturing
- Professional societies and continuing education platforms

5. Contents and Structure

Part I: Foundations and Context

- Introduction to Industry 4.0 - Origins and evolution of the industrial revolutions; global impact and drivers.
- Key Enablers of Industry 4.0 - Overview of core technologies like AI, and IoT.
- Smart Manufacturing Defined - Frameworks and principles of intelligent production systems.
- Others…

Part II: Core Technologies

- Industrial Internet of Things (IIoT) - Architecture, connectivity, and applications in modern plants.
- Cyber-Physical Systems and Digital Twins - Real-time simulation, synchronization, and system modeling.
- Artificial Intelligence in Manufacturing - Predictive analytics, machine learning, and AI for quality and efficiency.
- Robotics and Autonomous Systems - Collaborative robotics, autonomous logistics, and control strategies.
- Additive Manufacturing and Advanced Materials - Role of 3D printing, customization, and material science in smart factories.
- Others…

Systems and Integration

- Manufacturing Control Systems - SCADA, ERP, and real-time factory control platforms.
- Factory Design and Architecture - Digital threads, flexible layouts, and system modularity.
- Cloud Manufacturing - Infrastructure for decentralized intelligence and distributed control.
- Others…

Part IV: Implementation and Applications

- Industrial Applications and Use Cases - Sector-specific implementations and comparative insights.
- Workforce Transformation and Skills Development - Future skillsets, education programs, and human-machine collaboration.
- Cybersecurity and Risk Management - Mitigating threats in interconnected systems.
- Others…

Part V: Policy, Ethics, and Future Trends

- Policy, Regulation, and Standards - National initiatives, international standards, and regulatory landscapes.
- Sustainability and Green Manufacturing - Energy optimization, circular economy, and eco-efficiency.
- Ethical Considerations and Societal Impact - Automation ethics, and socio-economic implications.
- Others…

7. Chapter(s) Proposal

- Tentative title with a short description
- Scope (Contents and Structure**)**
- Major features and strengths of your chapter
- Please list the estimated number of:
    - Number of pages
    - Number of figures and photos
    - Number of tables
    - Number of equations

    - Number of problems
    - Number of case studies

8. Timeline

- Submission due date February 1, 2026
- Review results April 1, 2026
- Final Chapters due date September 1, 2026

Please forward all questions and corresponding to akkamrani@watetech.edu