Announcement

Industry 4.0 SCIENCE

Resilient Manufacturing Systems

Global supply chain disruptions, resource constraints, cyber threats, and increasingly volatile market conditions are putting manufacturing systems under growing pressure. In this environment, resilience is becoming a key requirement for Industry 4.0. The central challenge is how to design production systems that can anticipate disruptions, absorb unexpected events, and recover quickly while maintaining productivity and quality.

Resilient manufacturing requires more than simply responding to crises. Flexible production structures, real-time data, digital twins, and AI-supported decision-making can help companies identify vulnerabilities, assess risks, and adapt operations as conditions change. At the same time, resilience depends on organizational capabilities, robust supply chains, and the ability to balance efficiency with redundancy and adaptability.

This issue of Industry 4.0 Science (www.industry-science.com) explores current approaches, technologies, and strategies for building resilient manufacturing systems. The focus is on how digital solutions, adaptive production planning, and new organizational concepts can help companies manage uncertainty, strengthen operational continuity, and create more robust and adaptable industrial value chains.

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