

Production Planning and Scheduling Techniques in Novel Manufacturing Systems

Today, enterprises face enormous challenges in an increasingly competitive market due to mass customization, a globalized and volatile market, workforce and environmental issues, and unexpected disruptions. In this regard, novel manufacturing systems like Reconfigurable Manufacturing System (RMS), Cloud Manufacturing (CM), and Additive Manufacturing (AM) have been employed to face these challenges efficiently. These novel systems enjoy the latest technology advancements, including Cyber-Physical System (CPS), Artificial Intelligence (AI), Internet of Things/Everything (IoT/E), Big Data Analytics, Metaverse, Smart Robotics, and 3D Printers. Nevertheless, planning novel manufacturing systems encounters much more complexity than traditional manufacturing systems. Thus, efficient production planning and scheduling methods shall be developed to meet the requirements of novel manufacturing systems and uphold their prosperity.

We welcome theoretical and applied contributions regarding production planning and scheduling techniques (e.g., mathematical modeling, exact, hybrid, heuristic, and metaheuristic solution methods, machine learning) in the following directions, but not limited to:

- ✓ Reconfigurable manufacturing systems
- ✓ Cloud and collaborative manufacturing systems
- ✓ Additive or hybrid additive-subtractive manufacturing systems
- ✓ Remanufacturing or hybrid manufacturing-remanufacturing systems
- ✓ Human-centric manufacturing systems under the Industry 5.0 paradigm (e.g., metaverse, assistive and wearable devices, human interaction in robotics and cyber-physical systems)
- ✓ Data-driven production
- ✓ Energy-aware production

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