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Solid as Iron: Integrated Blast Furnace Control, Optimization, Condition Monitoring, and Simulation

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Efficient blast furnace operation is essential for competitive iron and steel production, impacting productivity, hot metal quality, and cost-effectiveness. This paper explores how a combination of integrated automation systems enabled the successful start-up and stable operation of a blast furnace following a relining that included the installation of a bell-less top charging system:

A flexible, state-of-the-art process control system acts as the plant's digital heart. It is supported by a comprehensive digital knowledge package, which includes operational knowledge from a rule-based expert system, maintenance knowledge from a predictive condition monitoring system, and a test and training system to enhance the operations team's expertise.

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