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所 属	職 名	氏 名
ビジネス研究科	教授	殷 勇
研 究 題 目	サステナブル生産の実現を目指す生産管理方式の構築に関する研究	
研 究 成 果 の 概 要	<p>下記の国際学術誌に論文を掲載しました。 Liu, C., Yang, J., Lian, J., Li, W., Evans, S., & <u>Yin, Y.</u> (2014). Sustainable performance oriented operational decision-making of single machine systems with deterministic product arrival time. <i>Journal of Cleaner Production</i>, 85, 318-330.</p> <p>概要： In order to achieve industrial sustainability and realize low carbon economy, various measures should be taken to reduce carbon dioxide emissions of production processes without compromising economic factors. In this paper, we study the operational decision-making problem incorporating both economic and environmental performance. We focus on single machine systems with deterministic product arrival time and the First Come First Served processing rule, and emphasize the processing time and consumed energy of the machine when it stays idle and is switched. We formulate a multi-objective optimization model with aims to minimize the total carbon dioxide emissions and the total completion time simultaneously. Considering the properties of our model, a non-dominated sorting genetic algorithm II (NSGA-II) is proposed to solve this problem. Several simulation examples and an industrial case are used to validate the feasibility and effectiveness of our proposed model and algorithm. Comparison with a previous algorithm confirms the better performance of our proposed algorithm.</p>	