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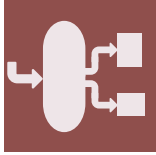
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Section

Manufacturing Processes and Systems



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Section

Manufacturing Processes and Systems

Featured Papers

DOI:10.3390/pr10020391

A Review of Lean Adoption in the Irish MedTech Industry

Authors: Anna Trubetskaya, Declan Manto and Olivia McDermott



Abstract: There have been many literature reviews carried out on Lean implementation in larger organisations with specific focus on the automobile industry. Lean implementation in the medical device industry has not been extensively investigated. Thus, this research endeavored to analyse the benefits of Lean, tools utilised and challenges and results of Lean implementation in Medtech companies. This article aims to bridge a gap in the literature by reviewing the literature that discusses Lean implementation in MedTech companies in Ireland with a perspective of identifying the benefits and challenges faced. The quantitative methodology allows us to review the comprehensive numbers and data which were collected from 20 Enterprise Ireland MedTech case studies. There are very few published case studies in the literature on Lean due to the highly regulated nature of MedTech sector and the vast array of medical devices, which are often under privacy and confidentiality constraints. The results showed that integration of Lean has brought benefits to companies by increasing productivity and product quality, optimised cost, and time. An inclusive discussion of Lean tools for Lean implementation within MedTech was established and suggestions for future research orientations are thus provided.

DOI:10.3390/pr10010091

Enhancing Droplet Quality of Edible Ink in Single and Multi-Drop Methods by Optimization the Waveform Design of DoD Inkjet Printer

Authors: Oke Oktavianty, Shigeyuki Haruyama and Yoshie Ishii



Abstract: The multi-drop method with a good droplet quality is a big challenge in inkjet technology. In this study, optimization of Drop on Demand (DoD) inkjet printer waveform design was conducted. The effectiveness of the waveform design, so-called W waveform, from previous study as a preliminary vibration for the multi-drop ejection method was investigated. The unmodified W waveform was proven not to be an effective waveform for lower viscosity of liquid, especially when compared by the standard waveform obtained from a print-head manufacturer. Edible ink with a viscosity below the optimum range for print-head specifications was employed as the operating liquid. The preliminary vibration W waveform was modified to improve the droplet quality of the edible ink. It was proven that a 40% adjusted voltage of the rear wave of the W waveform was effective as the optimum waveform design for edible ink. The droplet quality of the multi-drop ejection method for grey-scale technology was improved by optimizing the W waveform design.

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