

MANUFACTURING CONCEPTS FOR LASER PROCESSING

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Keywords: Laser processing, Virtual commissioning, Process integration, Discrete event simulation, Operation optimization

ABSTRACT

Currently in the metal sheet industry, the laser processes are usually implemented as standalone processes. However, the laser types used for the processes do not differ significantly, between the areas of use; cutting, welding, and the future possibilities within bending. Today, the biggest difference is the nozzles, which are different for each of the processes. Because of this, a state-of-the-art analysis is made to get an understanding of the processes and the laser types, which are used. The analysis shows that it is possible to integrate different laser processes into one laser cell.

Based on the integrated processes, different concepts, for the manufacturing of different products, are generated. The products are developed in collaboration with JPBC A/S and are 3D products which requires multiple process steps. The manufacturing concepts are evaluated by use of 3DEXPERIENCE and ENTERPRISE DYNAMICS. The results are afterwards compared with conventional methods, for manufacturing low volume and high variety.

Depending on the comparison, it is determined whether the developed manufacturing concepts are economically beneficial, or not.

Acknowledgement

The authors of this work gratefully acknowledge Grundfos for sponsoring the 9th MechMan symposium.