

## Accepted Manuscript

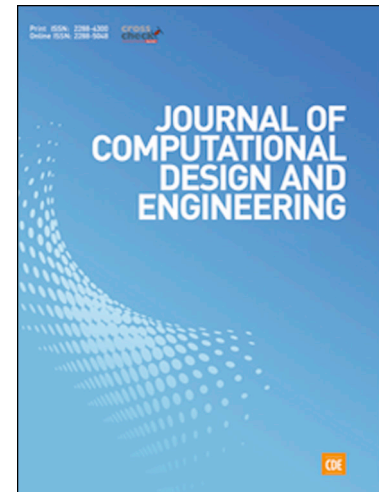
An additive manufacturing oriented design approach to mechanical assemblies

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## Title page with Authors

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Dear Editor-in-Chief of the Journal of Computational Design and Engineering,

Enclosed is a paper, entitled “*An additive manufacturing oriented design approach to mechanical assemblies*”. Please accept it as a candidate for publication in the *Journal of Computational Design and Engineering*.

Below are our responses to your submission requirements:

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**Abstract:**

Firstly introduced as a prototyping process, additive manufacturing (AM) is being more and more considered as a fully-edged manufacturing process. The number of AM processes, along with the range of processed materials are expanding. AM has made manufacturable shapes that were too difficult (or even impossible) to manufacture with conventional technologies. This has promoted a shift in engineering design, from conventional design for manufacturing and assembly to design for additive manufacturing (DFAM). Research efforts into the DFAM field have been mostly dedicated to part's design, which is actually a requirement for a better industrial adoption. This has given rise to topologically optimized and/or latticed designs. However, since AM is also capable of manufacturing fully functional assemblies requiring a few or no assembly operations, there is a need for DFAM methodologies tackling product's development more holistically, and which are, therefore, dedicated to assembly design. Considering all the manufacturing issues related to AM of assembly-free mechanisms and available post-processing capabilities, this paper proposes a top-down assembly design methodology for AM in a proactive manner. Such an approach, can be seen as the beginning of a shift from conventional design for assembly (DFA) to a new paradigm. From a product's concept and a selected AM technology, the approach first provides assistance in the definition

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