

**NEW APPLICATIONS OF TOPOLOGY OPTIMIZATION IN THE CONTEXT
OF ADDITIVE MANUFACTURING**

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ABSTRACT

This Invited Session is devoted to new applications of shape and topology optimization, either taking into account explicitly constraints from additive manufacturing, or simply made possible because innovative and optimized designs can be built by additive manufacturing. Typical examples include (but are not limited to) optimization of sacrificial supports in powder bed fusion additive manufacturing, optimization of multi-scale lattice materials, multi-physics optimization of heat exchangers, optimization of electrical machines or of lithium-ion batteries.

These new applications are often requiring new theoretical and algorithmical developments in order to adequately model transmission conditions at interfaces between different physics subdomains, to take into account various geometrical constraints and to efficiently perform the optimization process. A special emphasis will be put on level-set and remeshing algorithms.

REFERENCES

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