



Modelisation of the selective laser sintering process of polyamide 12

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Abstract:

Optimizing the laser sintering of polymers for additive manufacturing requires thermomechanical modeling of this process. In our work, we are interested in the modeling and numerical simulation of the entire process in order to predict certain characteristics of the final parts, such as crystallinity and porosity as well as stresses and strains of thermal origin. Several physical phenomena are involved in a coupled manner in laser sintering. Its multi-physical couplings which make it possible to include the thermal history of the material and the thermal dependence of its properties during the modeling of its transformations (fusion, coalescence, densification, crystallization). Mechanics (constitutive law, stresses, strains) and metallurgy (composition of materials, crystallographic structure) are the dominant phenomena.

Biography:

Hanane YAAGOUBI : was born in morocco on 24th april 1992. state engineer diploma (mechanical design and innovation) , FST FES, sidi mohamed ben abdellah university in FES and she is currently a PHD student in the laboratory of applied mechanics and technologies (LAMAT), ENSET,STIS research center mohammed V university-Rabat, Morocco , Her research is focused on printing 3D.



Publication of speakers:

- Hanane Yaagoubi et al ; A New Method to Analyze the Quality Characteristics Of 3D Printing Technologies: Production, Time, Cost.
- Hanane Yaagoubi et al ;A One Dimensional Meshfree-Method For Solving Thermal Problems Of Selective Laser Sintering Process Of Polymer Powders.
- Hanane Yaagoubi et al ; Mathematical study on the relation of energy density and other parameters in the selective laser sintering of polyamide12 and their influences on the quality of the final produced part.

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