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Investigation of the thermal properties of different grades polyamide 12 (PA12) in improving laser sintering process (SLS) (Conference Paper)

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Abstract

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Selective Laser Sintering (SLS) is a combined technology of computer and laser to produce complex 3D prototypes directly from CAD modeling. One of the main advantages of employing this technology is that the non-sintered powder can be recycled and reused for another fabrication. However, the fabricated part could be affected by rough and unacceptable surface texture. As a result, the parts may have to be scrapped and the build has to be repeated with a higher ratio of new material. This paper presents an experimental study of the thermal properties of new and recycled of PA12 powder in the Laser Sintering process. The influence of melting temperature, glass transition temperature and crystallization temperature on these properties is investigated. The experimental results have shown that PA12 powder with high melt flow rate, low melting temperature, low glass transition temperature and low degree of crystallization temperature could improve the sintering process. © (2014) Trans Tech Publications, Switzerland.

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[Laser sintering](#)
[Polyamide 12](#)
[Surface finished](#)
[Thermal properties](#)
[Viscosity](#)

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1 Pham, D.T., Dotchev, K.D., Yusoff, W.A.Y.
Deterioration of polyamide powder properties in the laser sintering process
 (2008) *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, 222 (11), pp. 2163-2176. Cited 41 times.
 doi: 10.1243/09544062JMES839
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2 Dotchev, K., Yusoff, W.
Recycling of polyamide 12 based powders in the laser sintering process
 (2009) *Rapid Prototyping Journal*, 15 (3), pp. 192-203. Cited 55 times.
 doi: 10.1108/13552540910960299
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3 Gornet, T.J.
 Characterisation of Selective Laser sintering TM to Determine Process Stability
 (2002) *Proceedings of Solid Freeform Fabrication*, pp. 546-553. Cited 27 times.
 Austin, Texas

4 Gornet, T.J.
 (2002) *Improving Selective Laser Sintering Consistency*, pp. 1-3. Cited 4 times.
 CAD/CAM Publishing

5 (1998) *DTM 2nd European User Group Meeting Leuven*
 Belgium, Rapid Steel 2.0, 7-8 October

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