

Use of polystyrene production wastes in selective laser sintering processes

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Abstract

© Published under licence by IOP Publishing Ltd. The purpose of this study is to determine the possibility of using polystyrene waste in Selective Laser Sintering (SLS) technology. The powder was subjected to mechanical and chemical influences and was studied in optical and IR microscopes. Test samples were obtained on the sPro 60HD unit (3D Systems, USA).

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References

- [1] Way Y and Puwanto H 2014 Investigation into the differences chemical properties of laser sintering polymer powder materials using fourier transform infrared spectroscopy *Applied Mechanics and Materials* 548-49 and etc
- [2] Shmidt J and Sachs M 2015 A novel process chain for the production of spherical SLS polymer powder with good flow ability *The 7th World Congress on particle technology and etc*
- [3] Kruth J-P and Levy G Consolidation of polymer powder by selective laser sintering
- [4] Shmidt J and Plata M 2012 Production of polymer particles below 5 μ m by wet grinding (*Powder technology*) 228
- [5] Kashapov R N, Kashapov L N and Kashapov N F 2017 Analysis and development of methods for obtaining metallic powders for selective laser melting *IOP Conference Series: Materials Science and Engineering* 240 012071
- [6] Kashapov R N, Kashapov L N and Kashapov N F 2015 The research of anodic microdischarges in plasma-electrolyte processing *IOP Conference Series: Materials Science and Engineering* 86 012019
- [7] Kashapov L N, Kashapov N F and Kashapov R N 2013 Research of the impact acidity of electrolytic cathode on the course of the plasma-electrolytic process *Journal of Physics: Conference Series* 479 012011