

Influence Ceramic Powder SiC Moisture during Green Machining

Imrich Orlovský, Michal Hatala, JánDuplák

The Faculty of Manufacturing Technologies of the Technical University of Košice with a seat in Prešov, Institute of Progressive Technology, Department of Production Technologies, Štúrova 31, 080 01 Prešov, Slovak Republic.
imrich.orlovsky@tuke.sk

This article describes the principle of Green Machining technologies and experimental tracking of moisture of ceramic granulate during the drying process. Green machining involves the machining of metal or ceramic bodies in the "green" state prior to sintering. Typically these bodies are comprised of ceramic or metal powder held together by an organic binder. In this state they are far easier to machine than monolithic blocks of the corresponding metal and ceramic. One of the materials that can be used in the green machining is silicon carbide. This material is produced in the process of spraying the emulsion in drying kiln. This process is very important considering the quality of ceramic powder with respect to its further use. One of the most important parameters to be monitored during the spraying is the moisture of the ceramic powder (granulate). [8][2]

Keywords: spraying, moisture, ceramic powder, green machining

References

- [1] ORLOVSKY, I.: Identification of thermal phenomena in technological processes, *PhD thesis*, FVTU Košice so sídlom v Prešove, Prešov 2008
- [2] ORLOVSKY, I.; HATALA, M.; JANAK, M.: Creation of simulation model of ceramic granulate production in spraying kiln. *Technical Gazette*, Vol. 17, No. 4, (Dec 2010), p. 419-423, ISSN 1330-3651
- [3] MICHALIK, P.; ZAJAC, J.: Using of computer integrated system for static tests of pipe conveyor belts, In: *Proceedings of the 2012 13th International Carpathian Control Conference, ICC 2012*, Pages 480-484, High Tatras; Slovakia; 28 May 2012 through 31 May 2012, ISBN: 978-145771868-7
- [4] JEZIERSKI, J.; JANERKA, K.: Experimental evaluation of the new lance for powder injection, *Manufacturing Technology*, Volume 13, p. 55-59, ISSN 1213-2489
- [5] ZAJAC, J.; HUTYROVÁ, Z.; TARASOVIČOVÁ, A.: Assessment of statistical significance of factors by machining in homogeneous materials – WPC, In: *Applied Mechanics and Materials*, Volume 308, 2013, Pages 165-169, ISSN: 1660-9336
- [6] EPERJEŠI, L.; MALIK, J.; EPERJEŠIŠ.; FECKO, : Influence of returning material on porosity of die castings, *Manufacturing Technology*, Volume 13, p. 36-39, ISSN 1213-2489
- [7] ČUMA, M.; ZAJAC, J.: The impact analysis of cutting fluids aerosols on working environment and contamination of reservoirs, *Tehnicki Vjesnik*, Volume 19, Issue 2, June 2012, Pages 443-446, ISSN: 1330-3651
- [8] MRKVICA, M., NESLUŠAN, M., KONDERLA, V., JANOŠ, V.: Cutting ceramic by turning of nickel alloy Inconel, *Manufacturing Technology*, Volume 12, p. 178-186, ISSN 1213-2489
- [9] MONKOVÁ, K.; MONKA, P.; HLOCH, S.; VALÍČEK, J.: Kinematic analysis of quick-return mechanism in three various approaches, *Tehnicki Vjesnik*, Volume 18, Issue 2, 2011, Pages 295-299, ISSN: 1330-3651
- [10] VASILKO, K.; SIMKULET, V.: Phenomenon of twist drill, *Manufacturing Technology*, Volume 12, p. 281-285, ISSN 1213-2489
- [11] MARCINČIN, J.N., BARNA, J., JANÁK, M., MARCINČINOVÁ, L.N., FEČOVÁ, V.: Utilization of Open Source tools in assembling process with application of elements of augmented reality (2011) *Proceedings of VRCAI 2011: ACM SIGGRAPH Conference on Virtual-Reality Continuum and its Applications to Industry*, pp. 427-430. ISBN: 978-145031060-4
- [12] JURKO, J., PANDA, A.: "Study on screw drill wear when drilling a new ELC stainless steels and accompanying phenomena in the cutting zone" *Advanced Science Letters*, Volume 19, Issue 8, August 2013, Pages 2490-2493 ISSN: 1936-6612
- [13] KASINA, M.; VASILKO, K.: Experimental Verification of the Relation between the Surface Roughness and the Type of Used Tool Coating, *Manufacturing Technology*, Volume 12, p. 27-30, ISSN 1213-2489
- [14] <http://www.dynacer.com/processing/green-machining/>