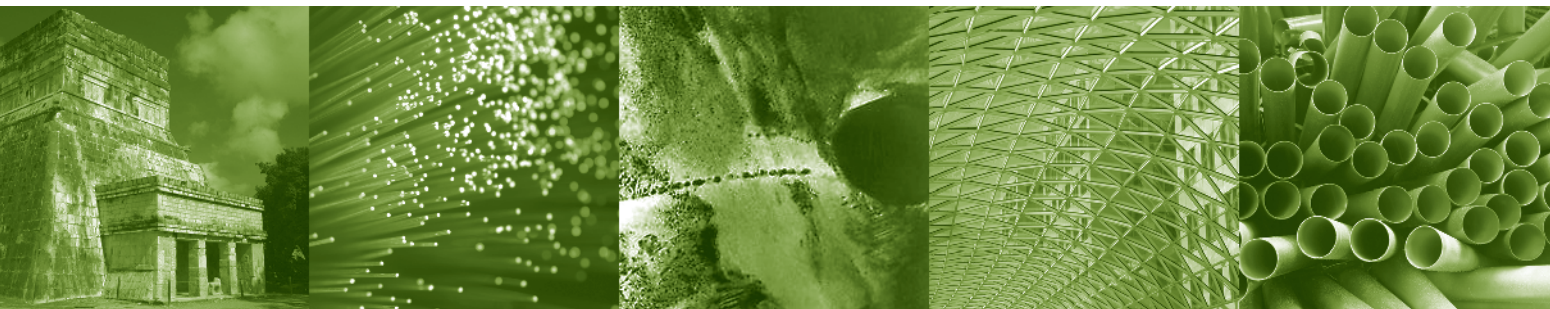




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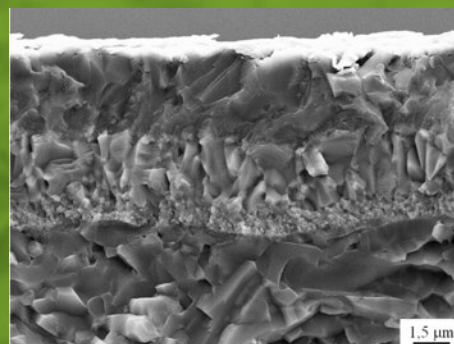
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Dear Readers,

As usual in December, we present an extended number of the journal and hand it to PT Readers, with the hope that they will find many interesting papers in it. 2013 year comes to the end. We send wishes from the bottom of the heart for the next New Year 2014, of further academic and professional successes, good health, successes and family happiness to all PT Authors and PT Readers of our journal, hoping to continue the excellent cooperation in the next 8th year of our activity in a tough market of research journals.

A Happy New 2014 Year!



The paper entitled "Forming of the surface structure and properties of tool's ceramic inserts with improved abrasion resistance" by D. Pakula on a page 55 presents cutting properties of coated tools made of nitride and sialon ceramics by means of investigations into mechanical properties, including microhardness, adhesion and abrasive resistance of the deposited coatings and by means of investigations into the chemical composition and structure of the coatings. Investigations were performed in the framework of the work accomplished encompassing the following in the first phase: the development of a technology of fabricating graded and multiphase coatings using the cathodic arc evaporation (CAE) methods; investigations were carried out in the second phase into the structure and properties of deposited coatings onto ceramic tool materials with the following required properties: high adhesion, microhardness, high resistance to abrasive, corrosive and diffusion wear in the working conditions of high-performance. The coating deposition technologies (coating systems) employed for coatings formed in PVD processes of cathodic arc evaporation (CAE) and in a high-temperature CVD process on tool ceramics are eligible for widespread industrial applications. For this reason, the implementation of the results of the research under this research work enables to achieve environmental objectives associated with elimination of cutting processes involving toxic machining liquids burdensome for the environment by introducing new coatings and a new generation of cutting tools with coatings for high-speed cutting and by enhancing the life of the manufactured parts and by decreasing their overall production, thus reducing environmental obnoxiousness, and also to achieve economic objectives related to a lower ratio between a manufacturing cost and the life of parts or a tool by significantly improving their durability, even with relatively higher manufacturing costs of tools and with limited social costs of environmental degradation as a result of smaller production by introducing more durable products. An original achievement of the work - as a result of the conducted cutting tests with varied technological parameters and based on the results of investigations of mechanical and structural properties - is that an application recommendation is proposed for the developed PVD and CVD coatings deposited onto ceramic tool materials for industrial applications.