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FUNCTIONAL MATERIALS: DEVELOPMENT OF NANOSTRUCTURED CERAMIC-METAL XYLAN OF A COATING WITH THE OPERATED WETTING

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On the basis of earlier developed nanotechnology of receiving functional coatings in the open atmosphere, synthesis of ceramic-metal xylan coatings with the operated wetting is carried out. The new type of the functional materials has no analogues in triboengineering. We have made a number of theoretical and experimental studies directed to optimal synthesis parameters finding, coatings structure and tribological characteristics analysing and establishing correlation between the mentioned factors (the triad "synthesis parameters- structure-performances"). The findings suggest that the carbon coatings with orientating effect on boundary layers are advantageous for improving antifriction characteristics and for governing processes of boundary lubrication. New type functional materials can be recommended for the application on the countertops of the responsible steel elements of friction pairs lubricated with mineral or synthetic oils.

Biography

Vladimir Levchenko completed his Doctorate in Physics at the Lomonosov Moscow State University in 1988 and Doctoral studies at Lomonosov Moscow State University in 1999. He is the Director of Nanotribology centre LMSU – BIES RAS (Lomonosov Moscow State University – Blagonravov Institute of Engineering Science, Russian Academy of Sciences). CEO Skolkovo. He is Member of 8 international scientific societies. He has published 3 monographs and more than 220 papers in reputed journals and serving as an Editorial Board Member of repute. He is awarded by the international 4 Grand Prix and more than 40 gold medals for achievements in a science.

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