THE DYNAMIC SUBLAYERS FOR IMPROVING THE ADHESION OF CVD DIAMOND FILMS ON COPPER

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The dynamic sublayers for improving CVD diamond coatings adhesion on copper substrates have been used. Variable thickness sublayers of Al / Cu / Cr, were sequentially deposited on a copper substrate. Aluminum layer was used as the dynamic melting sublayer, copper layer was used as carbon diffusion barrier and Cr layer was used as «new» substrate for polycrystalline diamond film synthesis. Influence of each sublayer thickness on the diamond film adhesion to copper substrate was studied. In addition, the effect of copper sublayer thickness on the aluminum carbonization was studied. The policrystalline diamond films obtained were characterized by scanning electron microscopy (SEM) and X-ray diffraction (XRD). Element distribution by thickness of the sample was studied by Auger electron spectroscopy (AES).

***Keywords:** CVD synthesis, CVD diamond, dynamic sublayers.*