INFLUENCE OF ION IMPLANTATION ON MECHANICAL PROPERTIES OF U8A STEEL AND COBALT-TUNGSTEN CARBIDE PLATES

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In paper the influence of ion implantation on mechanical properties of materials using in metal treatment was carried out. Particular, it was shown that wear resistance of U8A steel after ion implantation by C, Si, Ti, Mo, Re increases linearly as function of the number of implanted atomic element.

As the initial blade tool of the hard-alloy R300-0828E-PM 1030 plates were used. Tests of hard-alloy plates for resistance were made at turning of HN77TYUR steel. The greatest resistance plates treated by Ar ion implantation ($F = 1 \times 10^{18}$ ions / cm^2) have shown. Plates treated by Ar ions have resistance 5 times higher and 3 times higher treated by Re compare plates without treatment.

Keywords: *ion implantation, resistance were, hard-alloy.*