

Realization and Characterization of TiN Coating and Metal Working Application

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Abstract : Titanium nitride coatings have been extensively used in industry, such as in cutting tools. TiN coating were deposited by chemical vapour deposition (CVD) on carbide insert at a temperature between 850°C and 1100°C, which often exceeds the hardening treatment temperature of the metals. The objective of this work is to realize, to characterize of TiN coating and to apply it in the turning of steel 42CrMo4 under lubrication. Various experimental techniques were employed for the microstructural characterization of the coatings, e. g., X-ray diffraction (XRD), scanning electron microscope (SEM) model JOEL JSM-5900 LV, equipped with energy dispersive X-ray (EDX). The results show that TiN-coated demonstrate a good wear resistance.

Keywords : hard coating TiN, carbide inserts, machining, turning, wear

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