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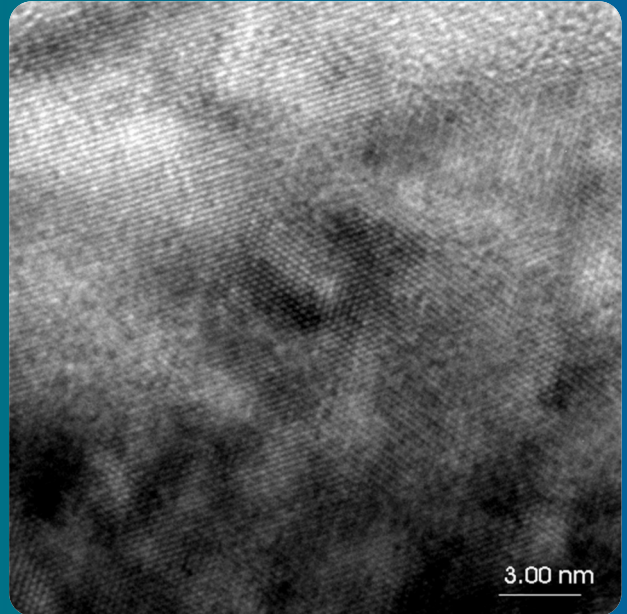


Gliwice 44-100, Poland
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The paper written by K. Lukaszewicz on “Investigations of nanocrystalline and gradient coatings produced by cathodic arc evaporation technology” on a **page 75** discusses the microstructure, corrosion resistance and the mechanical properties of the nanocrystalline TiAlSiN, CrAlSiN, AlTiCrN and the gradient TiAlN, TiCN, AlSiCrN coatings deposited by cathodic arc evaporation technology onto the X40CrMoV5-1 hot work tool steel substrate. It was found out that the microstructure of the nanocrystalline coatings consisted of fine crystallites, while their average size fitted within the range of 11÷25 nm, depending on the coating type. The critical load L_{c2} lies within the range of 46÷54 N. In case of the gradient coatings it was found out that the microstructure consisted of crystallites while their average size fitted within the range of 25÷50 nm, depending on the coating type. The coatings demonstrated columnar structure as well as good adhesion to the substrate. The critical load L_{c2} lies within the range 46÷59 N. The coatings demonstrate a high hardness (40 GPa) and corrosion resistance. The investigation results will provide useful information to apply the nanocrystalline and gradient coatings for the improvement of mechanical properties of the hot work tool steels. In order to evaluate in more details the possibility of applying these surface layers in tools, further investigations should be concentrated on the determination of the thermal fatigue resistance of the coatings. The very good mechanical properties of the nanocrystalline and gradient coatings make them suitable in industrial applications.