

PO3051

**Highly Ionized Deposition of CrN from Rotating Target**

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CrN is a well-known material in different industrial application providing good electrical conductivity, high hardness, corrosion resistance, and high temperature stability. High power impulse magnetron sputtering leads to significant improved properties and advanced productivity for industrial use. Modulated Pulse Power (MPP) CrN films produced on a lab scale machine without additional heating showed already very high hardness compared to state of the art sputtering processes. For industrial use an upscaling of the process and the perspective for production is essential.

This presentation will discuss the influence of different process parameters (peak current, gas composition, working pressure) on adhesion, hardness, composition, and crystal structure of the thin films. In contrast to conventional processes that use temperatures in the range of 250 °C and additional biasing, the presented films showed hardness values up to 2500 HV without neither substrate bias nor additional heating.

**Keywords**

Hard Coatings

Modulated Pulse Power

Rotatable

CrN