

PO2038

The new Hybrid LACS® Technology (Lateral ARC and Central Sputtering by Rotating Cathodes)

Radek Žemlička¹, Mojmír (Sr.) Jílek², Mojmír (Jr.) Jílek², Andreas Lümke¹, Tibor Cselle¹, Dominik Bloesch¹, Vladimír Krsek²

¹Platit AG Advanced Coating Systems, Selzach, Switzerland ²Platit a.s., Šumperk, Czech Republic

r.zemlicka@platit.com

The flexible PVD hard coating unit π^{411+} is able to operate with ARC, sputtering and PACVD. While the ARC technology brings highest performance for cutting tools, the sputtering achieves very smooth surfaces. The combination of both technologies in one coating unit enables the advantages of both worlds.

We would like to present the new LACS® technology (Lateral ARC and Central Sputtering by rotating cathodes). The novelty of this hybrid technology is the simultaneous use of Arc evaporation and sputtering, to evaporate non-alloyed metallic (Ti,Al,Cr,W, etc) and magnetron sputtered ceramic (TiB₂, B₄C) targets, resp. cathodes.

LACS® allows to deposit different high-performance coatings, like AlCrN/BN, AlTiN/BN, TiWN, TiCNWCC or TiB₂. On the other hand, the supplementary electron injection provided by ARC discharge can improve the microstructure and performance of the plasma-enhanced magnetron sputtered coatings.

On the example of BN-containing coatings we would like to illustrate how is it possible to optimize mechanical parameters of the coating by tuning of the process parameters. We will also present industrial applications of Boron doped coatings.

Keywords

Hybrid LACS®

Lateral ARC

Sputtering

Rotating Cathodes

Platit PVD