DANISH TECHNOLOGICAL INSTITUTE

NEWSLETTER DTI TRIBOLOGY CENTRE

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Would you be interested in testing our new TiB2 coating?

The Tribology Centre at Danish Technological institute launches a new titanium diboride (TiB2) coating optimized for tooling and machining in non-ferrous-materials as

- Aluminium alloys
- Titanium alloys
- Magnesium alloys
- Copper alloys

Tools coated with the new TiB2 coating

We are currently accumulating performance data on our new TiB2 coating and would like to establish a dialogue with potential end-users who would consider testing and validating the performance of our new TiB2 coating.

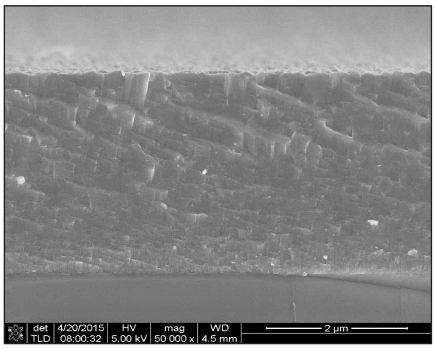
Therefore, we seek companies who would be interested in benchmarking the coating versus current alternatives.

Among the benefits of the new coating, our initial tests have revealed low affinity to aluminum, improved chip control, reduced build-up at the cutting edge combined with excellent wear resistance.

The high hardness of the TiB2 coating, its good oxidation resistance and thermal stability, as well as its chemical inertness are attributed to the crystal structure and atomic bonding in the coating.

The hardness of the coating is 4800 HV (48 GPa), which is approximately 50 % of the hardness of diamond and 30-50 % harder than many conventional wear-resistant coatings.

Even though the hardness is high, the internal stress in the film has been optimized using the newest High Power Impulse Magnetron Sputtering (HiPIMS) technology, which enables stress minimization and ensures good adhesion to the underlying substrate without compromising its superior hardness.



SEM cross-section image of the TiB2 coating

Properties of the TiB2 coating	
Hardness	4800 HV
Process temperature	550 °C
Application temperature	< 900 °C
Milling and Tooling of	Aluminium alloys Titanium alloys Magnesium alloys Copper alloys

For more information, please contact

Tribology Centre
Kongsvang Allé 29
DK-8000 Aarhus C

Tel. +45 72 20 15 99
Mail: tribo@teknologisk.dk
www.dti.dk