

Diamond coating for friction reduction

* This is a longer version of an article which appeared in the Surface Treatment feature of AIT November/December 2010.

DIARC-Technology has developed its next generation coating system which enables ta-C (tetrahedral amorphous carbon) structured diamond-like coatings to be produced in volume quantities for industrial applications. The company's improved process is targeted at companies who need a hard-wearing protective coating that can deliver increased efficiency and reliability of components operating in challenging and critical wear environments in mechanical systems.

The latest generation of coatings from DIARC, also offers extremely low friction in the presence of lubricants so supporting reduce in energy consumption.

The super-lubricant coating has broad industrial applications for all types of wear parts in engines, hydraulic systems and power transmissions and also for precision tool applications. "In many cases the coated component or tool ensures a trouble free operation of the machine and the production process. On tools, for example, the improvement in service life offered by the coating plays a more important role.

Also, improved quality and more efficient production gained when using coated tools is



in many cases as important as the service life of the tools," says Tapani Haikola, Vice President of Diarc .

Diarc is a pioneer in a low temperature vacuum plasma deposition process which can lay down a thin tough layer of diamond like carbon onto a range of materials from metals to plastics. The process is based on a special plasma accelerator technique to create highly ionized plasma of the coating material. The plasma is electromagnetically accelerated to a high velocity (energy), directed towards the workpiece and targeted onto the surfaces to be coated.

This principle makes it possible to process

well adherent dense coatings at low temperatures. Typical deposition temperature is below 100C.. The temperature can be adjusted by the process parameters so that it is possible to make coatings at even lower temperatures (~< room temperature). The thickness of the coating can range from a few nanometres to several micrometres, depending on the application.

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