

Application spotlight: Functional & decorative coatings

In medicine, electronic implants, surgical tools, orthopedics...for automobiles, wheels, lighting and reflectors, interior and exterior trim... around the home, faucets, window and door hardware, consumer electronics...

Items made with functional and decorative coatings surround us.

These thin-film coatings are traditionally produced using technologies such as evaporation, cathodic arc or planar magnetron deposition.

However, developments in rotary cathodes (magnetrons), perfected by Sputtering Components, have enabled longer campaign times and thicker, defect-free coatings.

Magnetics with stronger fields allow not only thicker targets but also lower operating pressures, which can increase throw distance and improve coating uniformity of three-dimensional substrates.

Magnetrons are also available with a variety of sputtering angles or even variable sputtering angles by rotating the magnet bar automatically with the Swing Cathode™ feature, which allows the user the ultimate flexibility when coating complex shapes.



Automobile parts are often finished with decorative and functional coatings.

medical devices, tooling, consumer electronics and more. “Using them we can build thicker coatings with higher gloss than we could with traditional cathodic arc approaches.”

Besides the quality improvement, rotary magnetrons are priced competitively. For most functional and decorative-sized coaters, the cost of rotary cathodes is comparable to planar mag-

netrons as little as one-tenth as often as with planar targets.

“Our customers value the longevity of the target material’s life in high-volume manufacturing and the stability of the process,” Anton said. “Maintenance is much easier than with conventional planar magnetrons.”

As well as the various rotary magnetron products, SCI offers the en-vis-ION™ Dual Magnetron Pretreatment for functional and decorative applications. The DMPTS is capable of providing effective pre-treatment of plastic substrates as far as 200 mm from the source. This source is capable of operating using standard sputtering power supplies and at standard sputtering pressures.

Around the globe, people use products with high quality and durable decorative and functional finishes every day. Many are made with technology provided by Sputtering Components.

“SCI cathodes are ideal for decorative applications where durability is critical.”
—Bryce Anton, R&D Manager, Vapor Tech

“SCI cathodes are ideal for decorative applications where durability is critical,” said **Bryce Anton**, R&D Manager at Vapor Tech a Colorado-based company specializing in thin film equipment to produce surface finishes for plumbing fixtures, home hardware,

netrons. This allows the manufacturer to take advantage of the higher material utilization provided by cylindrical cathodes.

In addition to the material savings, users of cylindrical cathodes need to change targets less often, in some cases