Decorative Coatings
PVD

the bright choice
Best surface properties
PVD is still one of the most effective methods for modifying and improving surface features in terms of aesthetic appearance, mechanical properties and durability. PVD coatings are usually harder and more corrosion resistant than coatings applied by traditional electroplating processes. They can resist to high temperatures and to abrasion stresses so that, generally, it is not necessary to apply a protective coating on top.

Large variety of materials for many applications
Possibility of depositing different kinds of coating materials: organic, inorganic, conductive, not conductive on a wide range of substrates and surfaces. Surface finishing is preserved.

Many layers and different techniques (PVD and PECVD)
More than one technique can be used in the same production to get all the advantages offered from the merging of the best property of the coating. This allows to deposit every material on several kinds of substrates.

Environmentally friendly
Extremely ecofriendly especially compared to existing technologies. It is an excellent alternative to electroplating (galvanic) and painting techniques, known to be harmful for the environment. PVD is therefore replacing galvanic technology in many production processes.

Kenosistec is looking forward to be the first-choice supplier for high performance coating equipment on a global scale, being committed to set new standards and to constantly provide and implement new ideas and solutions.
Kenosistec has an extensive experience in designing and producing equipment for thin film vacuum deposition. PVD and PECVD are the innovative technologies for depositing materials to obtain better surface properties and surface modification. They represent a substantial improvement over conventional electroplating (galvanic) coatings and they are totally environmentally friendly.

Kenosistec supplies "turnkey" systems with the know-how needed to get the best throughput in their production process. Customer support and its production process optimization are our priority!

A wide range of colors for a wide range of applications

** KSA Series with PVD and PECVD technologies **

** Kenosistec can supply customized systems for in-line production, large area substrates and metallization. **
V-See is a user-friendly supervisor for controlling PLC and instruments network architecture. It is running on Windows Operative System.

The Main logic is based in the PLC; the equipment status is continuously monitored and each cycle data are stored in the PC memory. Recipes are built-in with a large number of sequential steps. They are easy to recall and intuitive to create and modify.

Remote servicing is possible to assist our customers.

**PLC - Programmable Logic Controller**

In all our equipment we use Simatic S7-Series PLC (Programmable Logic Controller).

- Controllers with extensive system functions and high performance
- High-speed signal processing
- It ensures maximum performance

For sputtering deposition, Kenosistec has developed planar and rotating cylindrical magnetrons that allow to increase the deposition material. V-See, Kenosistec software, is a real added value to our systems. It ensures high reliability and flexibility in the implementation of customer process.

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PVD Coating

KSA SERIES

Deposition and Activation Sources

- PVD Cylindrical Magnetron Sputtering & Cathodic Arc
- Evaporation sources
- PECVD Sources

Substrate holder

- Carousel with double rotation for 3D samples to get coating uniformity

Samples cleaning

- Dedicated Power supply connected to the carousel for plasma cleaning

Heating

- Resistive elements - Infrared radiation

Accessories

- A special trolley for a quick load / unload of the carousel
- Special shields optimized for quick maintenance
Kenosistec has invented, developed, produced and tested a new generation of sputtering cathodes. The so-called ‘Target’ (material to be deposited) has a cylindrical geometry. It is mounted on a magnetic array that is moving. In this way the target is consumed uniformly and almost entirely. Typical materials: Aluminium, Titanium, Chromium, Copper, Nickel, Silver.

Deposition rate 10 times higher than traditional planar cathodes. This makes Hi.P.Po. competitive against traditional metalization, more reproducible and tunable.

Energy consumption 1/3 compared to traditional sources

Savings on target material 60%, 2/3 of material cost savings; for same amount of deposited thickness

Equipment maintenance time reduction Routine target exchange will occur less frequently, typically one out of seven compared to standard technologies.

Customized dimensions Tailored as a function of production

Chamber Volume reduction about 40% Even with same carousel used in traditional batch coater with planar magnetron, it is possible to reduce chamber dimension, amount of surfaces and pumping time.

Main Pros

Hi.P.Po. Cathode

Kenosistec

Hi.P.Po. High Productive Powered Sputtering Cathode

Kenosistec

PVD Coating

Hi.P.Po.

Patent deposited for cathode and its applications, geometries and materials.
Support for coating development

A flexible coating system, dedicated to “process set-up” and samples production, is available at our site to meet customers’ requirements. Coating properties can be tested in environmental test chambers and measured in our laboratory or at our partners lab.

R&D Coating Lab

We have developed and manufactured a fully configurable equipment and installed it in our Laboratory. This equipment is designed so that different coating deposition techniques can be used at the same time:

- Sputtering with planar magnetrons, rotating magnetrons in single or dual configuration.
- DC, RF, MF according to process type (reactive or metal or insulating materials)
- PECVD
- Etching and Plasma cleaning
- Cathodic Arcs
- Heat treatment
- Hi.P.Po. source

The system is equipped with a carousel with double rotation so that 3D samples can be coated. Sample maximum dimension can be ø= 700 mm and h=800 mm. Our goal is to develop, together with our customers, processes tuned on their needs and their samples. The equipment represents a useful tool also for developing our own deposition sources.

Test and measurement Lab

In order to verify the quality of our developed process we have in house a Lab equipped with:

- Profilometer
- Colorimeter
- Glossmeter
- Optical Microscope
- 4 Probes resistivity measurements
- Ball-cratering
- Corrosion chamber (ACS DCTC600 PN)
Angelantoni Group
Innovation to excel.

Angelantoni Group has always been a hub of innovation thanks to its collaboration with research institutes and universities, which has led to the design, manufacture, and marketing of state-of-the-art products in diverse application fields and the registration of a significant number of patents.

Since its beginning in 1932, numerous challenges have been met and won, with a focus on offering innovative solutions, providing customers with ingenious products and tailored services, and assisting them in the best possible way.

www.angelantoni.com
Kenosistec, owned by Angelantoni Group, is a company capable to offer a wide range of systems for thin film deposition. Passion, technical competences, experience are the basis for offering innovative and competitive solutions for research, industrial and large area coating processes. Our leadership in this market is based on high quality products. New solutions and new improvements are constantly promoted in order to satisfy our customer needs. We are committed to respect and value the environment.