

Positive Coating colors the time

A spin-off of the Institute of Applied Microtechnologies of the Haute Ecole Arc Ingénierie in La Chaux-de-Fonds, Positive Coating has become a major player in decorative PVD surface treatment of watches' components. It is expanding now into other markets such as jewellery and medtech.

BY PIERRE-ALBERT STEINMANN, CEO OF POSITIVE COATING



Founded in 2004, Positive Coating SA increased from 3 to 25 employees and, thanks to its dynamism, has taken advantage of the great demand for innovation of the watch industry. The company results from the applied research and development valorisation promoted by the Institute of Applied Microtechnologies (IMA-Arc) of the Haute Ecole Arc Ingénierie as regards decorative, tribological, and functional coatings.

Positive Coating points to develop innovative solutions as far as surface treatments based on PVD technologies are concerned. With over 150 customers in the watchmaking industry, Positive Coating has become a major player in decorative PVD (Physical Vapor Deposition) surface treatment: dials,

indexes, hands, plates, bridges, screws, oscillating masses, cases, backs, bezels, bracelets, crowns. Other markets, especially jewellery, luxury articles (writing instruments, lighters, spectacle frames), and the technical and biomedical fields are also concerned.

Positive Coating has a cutting edge technical infrastructure at its disposal and an environment conducive to a high technology activity that unfolds in the surface treatments. The production facilities are placed in a grey room (class 100'000). A white zone is equipped for the handling and control of the produced pieces. The access to wide range installations allows little series items and high volume production.

The partnership with the Haute Ecole Arc Ingénierie also guarantees access to the infrastructure of mechanical, optical, and physico-chemical characterisations of elaborate coatings. Positive Coating's concerns predominantly involve quality, repeatability and care, three terms that lie at the very heart of the company's philosophy.

SURFACE TREATMENTS BASED ON PVD TECHNOLOGIES

The five families of coatings are distinguished by their proposed various properties of

color, hardness, wear resistance, tri-dimensional uniformity.

Decorative Coating, (DeCo), are applied on metal surfaces and plane ceramic. They are particularly well adapted to watches' internal components (hands, dials, indexes, appliques). The main advantage is the colour's "adaptation" or "personalisation". Thanks to their great chemical inertia, the tint of these coatings does not evolve according to time. The repeatability of the colour's shade is guaranteed through colorimetric control.

The coloured 3D Decorative Coating, (3DeCo) may be applied on metallic pieces and geometrically complex ceramics. They are well adapted to watches' internal components (hands, appliques, dials, oscillating masses, plates, bridges). The great diversity of colours obtainable is an essential characteristic of this type of layer.

The combination of vacuum depositions and photolithography allows the family of Optical Coating (OptiDeCo) products to meet the most original demands in an innovative and personalised way. The excellent resolution offers a good alternative to the traditional serigraphy or print techniques.

The diversity of the applied coatings, whether uniformed or selective, goes with the choice of opacity and tint for the decoration of transparent parts in mineral material (sap-

PHOTOS: DR



BLACK
HarDeCo and 3DeCo black PVD coatings on watch.

phire, glass). Hence, the OptiDeCo family is particularly well adapted to the execution of products with inscriptions such as logos, texts, or numbers.

Stemming from extremely resistant technical coatings and applied both to centrepieces of aeronautic reactors as well as in the industry of cutting tools, Hard Decorative Coating (HarDeCo) are particularly suited for the external casing of clock-making products, jewellery, leather goods, and other decorative objects such as writing instruments, lighters, and spectacle frames. Thus, the products maintain an impeccable aestheticism for a very long time, conferring the object an unrivalled quality compared to other types of coatings. Different colours, such as black, night blue, brown, light or

dark grey and golden yellow may be obtained. For each of these colours, personalisation is achievable thanks to a perfect mastery of the nuances and their repeatability.

Finally, the originality of the decorative two-coloured coatings (DUO) is to combine two colours in order to enhance the aestheticism of some parts. The decoration

possibilities are enormous thanks to the combination of the substrate's natural colour, the electroplating, and the depositions elaborated through PVD coating. The DUO family coatings are destined both to the internal and external watch components.

These selective coatings may also emphasize certain mechanical decorations and enable the coloration of the watchcases, jewels, and accessories set with stones. The know-how rests essentially on saving and removal techniques, as well as the mastery of vacuum depositions.

TOWARD DIVERSIFICATION

Eager to diversify, Positive Coating also profiled itself in the market of luxury items (writing instruments, leather industry), making a grand entrance by the world leader in leather goods.

PVD coatings are suitable to the requirements of technical- and bio-medical fields. Positive Coating thereby fulfils an increasing demand for both aesthetic (identification of tools and components) and functional aspects such as wear resistance, radio-opaque marking, bio- and thermo-compatibilities.

As an innovation-driven company, Positive Coating recently patented a world premiere: a red PVD coating, result of intense research with the Institute of Applied Microtechnologies of Haute Ecole Arc Engineering in a project supported by the Swiss Confederation's Commission for Technology and Innovation (CTI).

Industrial production capacity, supported by a strong engineering department driven towards innovation, is the key to our success. ■



RED
Patented red PVD coating on watchcase and sapphire bezel.

EN FRANÇAIS DANS LE TEXTE

Une entreprise multicolore

Fruit de la valorisation de la recherche appliquée et du développement menés dans le cadre de l'Institut des Microtechnologies Appliquées (IMA-Arc) de la Haute Ecole Arc Ingénierie en matière de revêtements décoratifs, tribologiques et fonctionnels, la société Positive Coating SA a été créée en 2004. Elle est passée de 3 à 25 collaborateurs et, par son dynamisme, a su profiter de la grande demande de l'horlogerie en terme d'innovation. Positive Coating a pour mission de développer des solutions innovantes dans le domaine des traitements et modifications de surfaces basées sur les technologies PVD. Visant à établir des partenariats de qualité avec les fabricants de composants et les marques horlogères de haut de gamme, Positive Coating est une société de services dont le domaine d'activités est essentiellement le traitement de surface décoratif et fonctionnel de composants horlogers tels que les aiguilles, index, cadrans, ponts, mobiles, boîtes et bracelets. D'autres marchés, notamment la bijouterie-joaillerie, les articles de luxe (instruments d'écriture, briquets, lunetterie, robinetterie), la maroquinerie, les domaines technico- et bio-médical, s'ouvrent actuellement.

