

Hightech for soft skin

A Swiss entrepreneur has created an exclusive lingerie collection using gold-coated yarn developed at Empa. It is proving particularly popular in the Middle and Far East. And soon his female clients will be literally “swimming in gold”.

TEXT: Dominique Bitschnau / PICTURES: Rococo Dessous, Empa

Gold is the epitome of luxury. Thousands of years ago princes and kings already adorned themselves with the glittering metal. And it is still a status symbol of the well-to-do even today. The St. Gall entrepreneur Sascha Hertli was quick to grasp this. He is the CEO of Rococo Dessous, a range of lingerie made from gold fabrics – a worldwide first. The products are exclusive: the “cheapest” item in the collection amounts to 1,200 Swiss francs. The prices know no limits and depend only on his clients’ wishes. The basis for the luxury products of Rococo Dessous was provided by Empa. In the laboratories in St. Gall a gold yarn was developed, which is soft and clingy and even survives several washing machine cycles without suffering any damage – the prerequisite for wearing the gold yarn on bare skin.

For now Hertli seems to be spot on with his idea. Since he founded Rococo Dessous in May 2013 dozens of lingerie sets have been sold. “The greatest interest has quite clearly been shown in the Middle East”, says Hertli. The luxury lingerie is also available in the USA, in Russia and in selected boutiques in Europe. The next market the 29-year-old wishes to conquer is China. Indians are also deemed to be lovers of gold. An up-and-coming middle class there could soon see the demand for precious metal adornment worn on bare skin rocketing. Hertli is ready. He





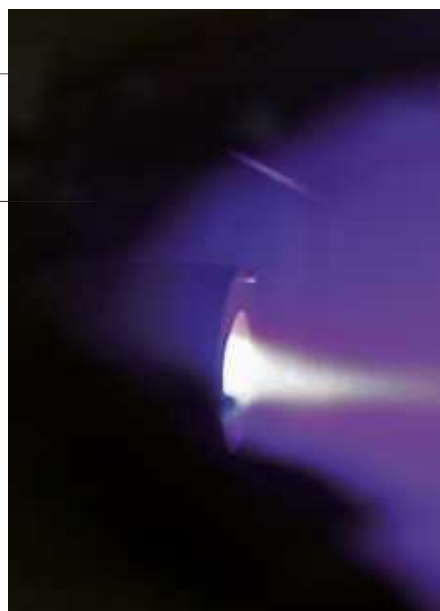
Video
Debut of Rococo Dessous at the
Lingerie Fashion Week, New York.
<http://tv.empa.ch/Rococo.mov>

How is gold applied to the threads?

Empa uses a technique called magnetron sputtering to anchor gold – or any other metal, for that matter – on yarn. All they need for this is electricity, a gold nugget, a few liters of argon gas and a vacuum container large enough to unwind 4,000 meters of yarn in narrow loops.

Inside the vacuum-plasma coating machine designed by Empa, the piece of gold – called a target – is bombarded with argon ions. Gold atoms fly off and land on a polyester fiber, which is slowly pulled through a machine just a few centimeters from the target.

The exact settings that ensure that the gold adheres to the fiber are, of course, trade secrets.



The first major appearance of the lingerie made from Empa gold yarn: Lingerie Fashion Week, New York, August 2013.



meets his clients in the luxury hotels of affluent cosmopolitan cities and presents his collection at fashion shows around the globe, for instance at the New York Lingerie Fashion Week in August 2013.

Real gold on bare skin

It is all down to Empa that real gold can now encounter soft skin. Gold embroidery was already coveted in past decades but it didn't last long. In the past the yarn was manufactured like the strings of a guitar. Wafer-thin golden wire was wrapped around cotton or silk yarn. The yarn was scratchy and not at all pliable. And you could forget about using a washing machine. The opposite is true of the Empa yarn that Sascha Hertli uses for his lingerie. "You can rub and knead the yarn as much as you like, the gold doesn't budge from the polyester fibers", enthuses the fashion designer. The super yarn can even withstand up to six hours at 80 degrees Celsius in the washing machine. However, hand washing is highly recommended to protect the lace in the lingerie, says Hertli. His clients have no problem with this. "The ladies who purchase our lingerie don't do their own washing anyway."

"Cold vaporization"

To develop a metalized yarn that is as silky as a normal fabric but still non-abrasive Empa engaged in basic research for more than ten years. The method is suited to anchoring various metals on yarn. Antibacterial socks that are less smelly can be produced from silver-coated yarn. Industry, too, uses the Empa silver yarn to weave textile filters, the functioning of which can be monitored by voltage. As soon as the filter tears anywhere, the power supply is interrupted and a technician is alerted.

Up to now gold-coated yarn offered no technical applications. However, the fashion industry is very interested because only Empa can anchor the gold to the thread

in a machine-washable manner. The method is as follows: inside a vacuum plasma coating machine there is a fiber and a 24-carat gold nugget. The nugget is bombarded with ions, individual gold atoms fly off. They more or less vaporize at ambient temperature – and land on the fibers. One yarn is made from around 100 of these polyester fibers. The scientists patented the novel method; industry came on board.

Neo-entrepreneur Hertli heard about the gold yarn in the summer of 2012 and saw a huge opportunity in the lingerie market. "Gold is everywhere except in the clothing sector." He hired the New York designer Breanna Lee who had already created underwear for the well-known lingerie company "Victoria's Secret". Together, they developed three different collections. Clients can choose between models made completely from gold or with black or white as the basic color with gold lace. Most of the production process remained in Switzerland. The gold yarn is produced by Tersuisse in Emmenbrücke near Lucerne and further processed in the embroidery atelier Bischoff Textil AG in St. Gall. The final sewing on the garments is then done in New York.

Swimming in gold

Although the lingerie sales are still being established, Hertli has already set his sights on the next product: swimwear. On a white or black sandy beach, by the blue sea is where the future collections will appealingly showcase their wearers. According to Hertli saltwater does not pose a problem for the textile pieces with the Empa gold yarn either. "We are only probing with the right elasticity." Once the solution is at hand, people will be able to admire the Empa innovation on the most exclusive beaches and pools around the globe, too. //