Optaglio prepares new generation of microholograms

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High-resolution security hologram firm Optaglio has established a research unit focused on microholograms.

In a statement, the firm said scientists and technicians are working together in the new team, which is closely connected to Optaglio Labs. This new research program is partly financed by European Union funds.

"Microholograms are our unique solution, but they also started a new general trend. In a few years, it will be normal that documents and brand goods are protected against counterfeiting also at the material level. The material will include inspectional micro-particles to prove the genuineness," said Dr Tomas Karenský, senior research manager in Optaglio. "This situation brings new challenges, and we need to prepare in time."

Research and development activities will mainly concentrate on the following areas:

- Future microholograms will need to sustain extremely tough conditions such as high temperatures and an aggressive chemical environment. It will enable them to be used for marking of engine parts and for forensic investigation of remains of destroyed documents or products.
- New visual effects. Current technology enables application of virtually all visual effects that are used on normal size holograms. However, sometimes it would be useful to have special effects that are good for microhologram inspection and not so interesting on normal size holograms.
- Technologies for integration of microholograms into different substances. Existing solutions are powerful for polycarbonate and paper. However, there are also other materials to be covered.

"What we are starting now is a long term program that will generate innovations continuously. It will be backed by our extensive experience from a microholograms application as well as extensive material research in other units of Optaglio LABS. I am looking forward to this incredible task very much," stated Karenský.

Microholograms, sometimes called "holographic dust", are microscopic metallic particles of a size from 40 micrometres. Seen by a naked eye, they look like just as metallic dust.

Viewed under higher magnification, it is evident that these particles are of regular shape and with a holographic surface. In addition to that, alphanumerical symbols can be engraved into the microholograms. Several levels of inspection are thus enabled from basic intuitive up to forensic. Microholograms are usually sealed into plastic foil or paper or added to transparent lacquer. They were invented in Optaglio Labs and are protected by patent.

Optaglio has been focused on research and development since 1994 when the company was established by a group of scientists from Czech Academy of Science.