Press release

One year of Bosch Secure Authentication GmbH

Fraunhofer technology improves product protection: Origify hits the market

Identifying a single product or document among thousands based on its surface structure – that is the concept behind Origify. Fraunhofer IPM and Robert Bosch GmbH developed the technology for marker-free authentication and traceability in a long-standing research partnership. In January, Bosch Secure Authentication GmbH unveiled Origify for the first time at CES in Las Vegas. The company is now celebrating its first anniversary.

With Origify, counterfeit products can easily be identified with a smartphone app. The process relies on the biometrics of objects: upon close inspection, every surface displays unique characteristics, much like a fingerprint. To verify authenticity, each product is captured by a camera once, for example, during production. An algorithm analyzes the surface characteristics, digitizes the data, and stores it as a tamper-proof bit sequence in the cloud. Users can then verify authenticity by scanning the product with the Origify app or a stationary camera system. The data is compared with database entries in real time.

The concept and technology for marker-free identification were first developed in 2008 at the Fraunhofer Institute for Physical Measurement Techniques IPM in Freiburg. Robert Bosch GmbH has been involved as a development partner ever since. The breakthrough was made in 2019 with the development of particle sensors. Among more than 50,000 components, a recognition rate of 99.8 percent was achieved, even under harsh production conditions. This high recognition rate qualified the process for traceability of zero-tolerance products with very high safety requirements.

Authenticity check via smartphone

Florian Hachenberger and Oliver Steinbiss recognized the technology's potential to protect consumer goods, which led them to found the company. In recent years, product piracy has become a growing problem for brand-name companies and consumers alike. The founders believed that enabling anyone, anywhere in the world, to verify the authenticity of a product or document using a smartphone would be a significant step in the fight against counterfeiting. However, the consumer goods market requires different levels of robustness and independence from technology than an industrial environment does. Bosch invested in further development. Researchers at Fraunhofer IPM succeeded to make the process less susceptible to

external influences, such as lighting, shooting angle, camera model, and signs of wear on surfaces.

Bosch Secure Authentication GmbH was founded in spring 2025 and launched Origify. Origify uses image-based authentication technology to verify the authenticity of luxury goods, medications, banknotes, and security prints. Fraunhofer IPM will continue to support Bosch Secure Authentication as they further develop the technology and adapt Origify to new devices and business models.

Further information

About Bosch Secure Authentication GmbH

Bosch Secure Authentication GmbH, a wholly owned subsidiary of Robert Bosch GmbH, was founded in 2025 and is part of the Bosch Group. Bosch has been working intensively on authentication and traceability since 2017 and has already tested the technology on its own production lines. Projects to date were centered on registering and verifying automotive parts during production using Origify in a process that both serves legal requirements and maintains internal quality standards. Building on this, the company is now focusing on the development and marketing of solutions for the printing sector, the luxury goods market, and manufacturing industry.

https://www.bosch-origify.com/

Real or fake? With Origify, consumers can use their smartphones to verify the authenticity of products. At the heart of the technology is an algorithm developed by Fraunhofer IPM that converts images of a product's surface into a bit sequence. The algorithm is considered a global leader in marker-free component and product identification. © Bosch Secure Authentication GmbH

Close collaboration over many years: Oliver Steinbis (right), now the managing director of Bosch Secure Authentication GmbH, and Prof. Dr. Daniel Carl (left), the deputy director of Fraunhofer IPM, worked with their teams to develop technology for tagless product authentication and traceability. © Fraunhofer IPM

The Fraunhofer-Gesellschaft, headquartered in Germany, is one of the world's leading organizations for applied research. It plays a major role in innovation by prioritizing research on cutting-edge technologies and the transfer of results to industry to strengthen Germany's industrial base and for the benefit of society as a whole. Founded in 1949, the Fraunhofer-Gesellschaft currently operates 75 institutes and research units throughout Germany. Its nearly 32,000 employees, predominantly scientists and engineers, work with an annual business volume of 3.6 billion euros; 3.1 billion euros of this stems from contract research.

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