

# PRESS RELEASE

*True solid-state LiDAR camera »TinyOwl«*

**One-shot image collection: New 3072-pixel LiDAR camera for fast image capture improves safety and autonomy in vehicles and production by providing high accuracy under harsh weather conditions or machine-induced vibration**

**The Fraunhofer Institute for Microelectronic Circuits and Systems IMS has upgraded its LiDAR (Light Detection and Ranging) camera TinyOwl to 3072 pixels. A 3D integration has been technologically enhanced by Fraunhofer IMS for the SPAD-based (Single-Photon-Avalanche-Diode) camera demo. The advanced camera is particularly robust and can ensure accurate image capture even under harsh weather conditions or machine-induced vibration.**

The TinyOwl 3072 Pixel captures its environment in 3D enormously fast through sensitive, optical components and separately manufactured and then stacked, connected readout electronics. Due to the powerful LiDAR sensor technology without moving components (»solid-state«), the TinyOwl beats many other systems in accuracy, even in harsh environments. The solid-state design allows the system to address applications in the mobility, industrial, aerospace and aviation sectors, helping them to detect their environment despite strong vibrations and motion. Thus, irritations and dangerous situations can be detected faster and incidents can be prevented.

Fraunhofer IMS has been developing SPAD-based LiDAR sensor technology for 10 years and can realize large array arrangements through 3D integration by backside illumination.

---

**Redaktion**

**Lea Krammer** | Fraunhofer Institute for Microelektronik Circuits and Systems IMS | Telefon +49 203 3783 343 | Finkenstraße 61 | 47057 Duisburg | [www.ims.fraunhofer.de](http://www.ims.fraunhofer.de) | [presse@ims.fraunhofer.de](mailto:presse@ims.fraunhofer.de)

This can guarantee high-resolution detection of the environment in a wide range of applications, which can significantly improve safety and autonomy in various means of locomotion and industrial robots.

Are you interested? Get in touch for more information about our new, improved LiDAR camera and how we can apply it: [sales@ims.fraunhofer.de](mailto:sales@ims.fraunhofer.de)

[Learn more on our website.](#)

## **Fraunhofer IMS**

For over 30 years scientists at Fraunhofer IMS in Duisburg have been dealing with the development of microelectronic circuits, electronic systems, microsystems and sensors. Because of its comprehensive know-how, the access to technology and the high-quality development work, the Institute is a globally recognized partner for the industry. In four business units and core competencies each, Fraunhofer IMS is dedicated to applied research, advance development for products and their applications. High-quality, efficient and marketable technologies and procedures that are used in a very wide range of branches take center stage in contract work.

[www.ims.fraunhofer.de/en.html](http://www.ims.fraunhofer.de/en.html)

## **Research Fab Microelectronics Germany (FMD)**

The Fraunhofer IMS is part of the Forschungsfabrik Mikroelektronik Deutschland (FMD) - a cooperation of the Fraunhofer Group for Microelectronics with the Leibniz Institutes FBH and IHP. As a pioneer for cross-site and cross-technology collaboration, the FMD addresses current and future challenges in electronics research and provides important impulses for the development of elementary innovations for the world of tomorrow.

---

### **Redaktion**

**Lea Krammer** | Fraunhofer Institute for Microelectronic Circuits and Systems IMS | Telefon +49 203 3783 343 |  
Finkenstraße 61 | 47057 Duisburg | [www.ims.fraunhofer.de](http://www.ims.fraunhofer.de) | [presse@ims.fraunhofer.de](mailto:presse@ims.fraunhofer.de)

---

**PRESS RELEASE**

31 May 2023 || Page **3** of **3**

---

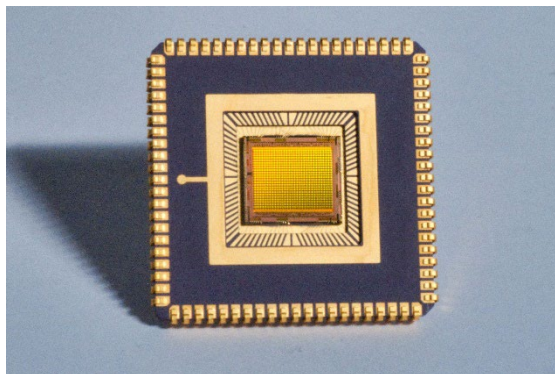
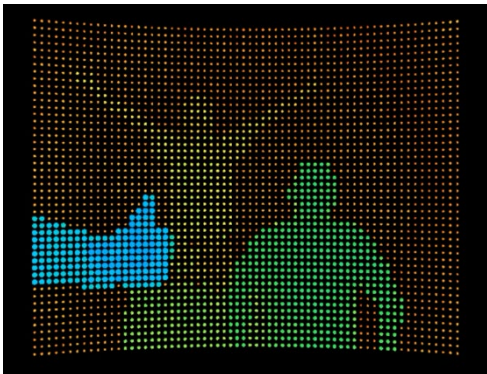
<https://www.forschungsfabrik-mikroelektronik.de/en.html> | Also visit our virtual 3D showroom at  
<https://fmd-insight.de/showroom>

### Pictures and captions



© Fraunhofer IMS

Left: LiDAR camera TinyOwl, bottom left:  
Point cloud monitor output, bottom right:  
built-in CSPAD chip.



---

#### Redaktion

**Lea Krammer** | Fraunhofer Institute for Microelektronik Circuits and Systems IMS | Telefon +49 203 3783 343 |  
Finkenstraße 61 | 47057 Duisburg | [www.ims.fraunhofer.de](http://www.ims.fraunhofer.de) | [presse@ims.fraunhofer.de](mailto:presse@ims.fraunhofer.de)