

News release

Backgrounder trinamiX GmbH

January 2021 – Ludwigshafen, Germany – trinamiX GmbH is a leading supplier of 3D and IR sensing solutions based on patented technology originally developed by BASF SE, the world's leading chemical company. As a unique, wholly owned subsidiary of BASF, trinamiX is also based in Ludwigshafen and was founded in 2015 as an operationally-independent company with complete access to the resources, expertise and experience of the entire BASF Group. Led by its founder, Dr. Ingmar Bruder, the company now has several offices worldwide and serves customers across multiple market segments.

trinamiX is developing unique sensor systems based on cross-disciplinary BASF research. In 2011, scientists from BASF made an unexpected discovery while characterizing under-development opto-electronic materials. The discovery, at first considered a bug, turned out to be a revolutionary, eye-opening feature that enabled instantaneous depth measurement through a monocular system. As trinamiX has evolved, it has placed great emphasis on not only foundational research into both chemistry and physics, but also into algorithmic design for 3D imaging, infrared sensor solutions and cloud-based spectroscopy solutions across multiple industries.

trinamiX has developed an entire suite of different sensor technologies with a singular purpose: to enable humans and machines to better understand the world around us for improved decision-making and security. With a team of around 150 experts across different fields ranging from algorithmic design to chemistry and optics, trinamiX is uniquely qualified to leverage its 500+ granted and pending patents into a host of vertical markets that can best take advantage of the company's unique value proposition.

3D imaging

trinamiX has developed the patented Beam Profile Analysis technology, which succeeds in turning a standard camera and light projector into a robust and powerful imaging system with a novel set of features enabling smart interaction between humans and machines.

Beam Profile Analysis adds a new dimension of reliability to both object- and user-recognition by extracting 3 data streams from 1 system: a 2D image, a 3D depth map and a unique material classification capability. The system is used for face authentication, secure face unlocking of smartphones or reliable access control systems. Smart algorithms are used to check in real time whether the user in front of the device is a real human being alive.

trinamiX has succeeded in integrating the patented technology as an in-display solution in the smartphone. This paves the way for new smartphone designs, such as all-screen displays, without compromising on data safety.

trinamiX uses its experiences gained in the smartphone industry to apply its imaging solution in other fields of application as well. It is ideally suited for use in robotics, such as industrial bin picking and enhances driver monitoring systems significantly for a comfortable and safer driving experience.

IR sensing

During the development of the original 3D sensor systems, the trinamiX team was searching for a wafer-thin infrared (IR) detector made of lead salt, which has unique properties required for the design of the 3D sensor system. In 2015, a product with these specifications was not yet available on the market – so trinamiX created it and even developed a new 100nm thin-film encapsulation in the process. trinamiX product innovations in IR technology satisfy customer's needs for small-sized sensors with high sensitivity.

Based on the experience with IR detectors, trinamiX has developed a mobile NIR spectroscopy solution. It helps to improve on-the-spot decision-making in various industries. For the first time, powerful NIR spectroscopy will now be affordable and accessible beyond factory and laboratory applications. trinamiX offers all the needed competences in a single, handheld device: mobile and robust hardware, precise data and material analytics and excellent molecular and chemical expertise. Applications for the solution are industrial, agriculture, food and beverage production as well as pharmaceuticals and cosmetics. Together with Qualcomm® Technologies, Inc., the IP and semiconductor leader for the mobile market, trinamiX presented their vision to bring Near-Infrared Spectroscopy into smartphones at the Qualcomm® Snapdragon™ Tech Summit 2020.

About trinamiX

trinamiX GmbH develops and sells cutting-edge 3D vision and infrared sensing solutions for use in both consumer electronics devices and industrial designs. The company's products enable humans and machines to better capture data, with the goal of understanding the world around us. This results in improved decision-making as well as stronger security. trinamiX, based in Ludwigshafen, Germany was founded in 2015 as a wholly owned subsidiary of BASF SE. The company employs around 150 people worldwide. Further information on www.trinamixsensing.com.

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