

No more needles: TRUMPF and RSP Systems want to make blood glucose monitoring easier for people with diabetes

Partnership agreed to miniaturize a non-invasive glucose sensor for your wrist // Mini-laser-based technology to make life easier for diabetes patients // More than 540 million people worldwide are affected by this disease

Ditzingen/Odense (Denmark), 09 January 2023 – TRUMPF Photonic Components and RSP Systems want to make life easier for people with diabetes. Instead of having to prick with a needle or wear an implant, in the future people with diabetes will simply be wearing a wrist-worn device that reads their glucose with a mini-laser. The German high-tech company and the Danish medical device company have now entered a partnership to realize a corresponding sensor that will allow RSP's ground-breaking, non-invasive technology to be miniaturized to a wearable format. TRUMPF is bringing its expertise as a global leader in the field of the miniature laser diodes required for this purpose, so-called VCSELs. "With our knowledge of the mechanisms of photonics, we can soon enable people with diabetes to measure their blood glucose levels more easily, more cheaply and entirely without pain. This partnership once again shows the innovation potential of VCSEL technology," says Berthold Schmidt, CEO of TRUMPF Photonic Components.

RSP Systems already has portable, optical, sensor-based devices that can measure glucose levels – but in the size of a paperback book. "Touch Glucose Monitoring has been an ambition for device developers over the last three decades due to the vast implications for hundreds of millions of people, needing to keep an eye on their glucose levels. Together with Trumpf Photonics, we will realize a wrist-worn device, aimed to cover all uses from people on insulin therapy to people at risk for developing diabetes, literally hundreds of millions of people," says Anders Weber, CEO of RSP Systems. Over the past 10 years, the company has developed an accurate, factory calibrated and clinically proven glucose monitor that provides accurate glucose readings just by touching the skin and with no need for calibration.

Measuring blood glucose with laser diodes

According to the International Diabetes Federation, approximately 540 million adults worldwide live with the metabolic disease diabetes, half of whom have not yet been diagnosed. By 2030, the number of people affected is expected to rise to 643 million and by 2045 to 783 million. "If we are successful together, we will improve the lives of hundreds of millions of people," says Schmidt. The Ulm-based company's lasers are already used in smartphones, smartwatches, digital data transmission and sensors for autonomous driving. "VCSEL lasers are clearing the way for a glucose sensor for your wrist – people with diabetes can thus keep an eye on their glucose levels at all times," says Weber. Diabetes has caused worldwide at least \$966 billion in health care expenditures to date. If the disease is not treated or is treated incorrectly, there is a risk of secondary diseases such as blindness, kidney failure or heart attack, according to the WHO.

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About TRUMPF

TRUMPF is a high-tech company offering manufacturing solutions in the fields of machine tools and laser technology. The Company drives digital connectivity in manufacturing through consulting, platform products and software. TRUMPF is a technology and market leader in highly versatile machine tools for sheet metal processing and in the field of industrial lasers. In 2021/22, the company employed some 16,500 people and generated sales of about 4.2 billion euros. With over 80 subsidiaries, the TRUMPF Group is represented in nearly every European country as well as in North America, South America and Asia. The company has production facilities in Germany, France, the United Kingdom, Italy, Austria, Switzerland, Poland, the Czech Republic, the United States, Mexico and China.

Find out more about TRUMPF at www.trumpf.com

About RSP Systems

RSP Systems is dedicated to improving the health and quality of life of people worldwide through its unique and patented solution for non-invasive glucose monitoring. The first targeted application is a product line of non-invasive glucose monitors, which provides people with diabetes with a convenient, pain-free alternative to the current invasive solutions. Self-monitoring of glucose is a key element in efficient diabetes management and constitutes a global market exceeding USD 15 billion annually.

RSP combines Critical-Depth Raman spectroscopy with advanced mathematical modelling to accurately measure glucose in the interstitial fluid. The Company has demonstrated its technology in numerous clinical studies in Denmark, Germany, and Sweden, accumulating more than 250,000 datapoints, using our first device aimed for commercialization, and the Company is ready to prepare for market clearance in the US.

Find out more about RSP at www.rspsystems.com

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