



MedLumics Announces “BiopsyPen Project” with €3.6M EU in Funding; Initiative Aimed at New Clinical Applications for Optical Coherence Tomography

MADRID – March 25, 2014 – [MedLumics](#), a medical imaging company specializing in advanced optical coherence tomography (OCT) technology, today announced the kick off of a three-year initiative to translate the latest OCT research into new clinical applications.

Called the “BiopsyPen Project,” the effort is led by MedLumics and the Medical University of Vienna, with participation from a consortium of European members including VTT Finland, Delft University of Technology, Exalos AG, the Polytechnic University of Madrid, and Optocap Ltd. Together, the organizations are working to develop the second generation of a compact handheld diagnostic imaging system that will radically transform the capability of biophotonic technologies for point-of-care diagnosis in dermatology.

“This unique collaboration of leading European technology and clinical centers will allow us to significantly extend the technical possibilities and clinical indications of our micro-chip based OCT system,” said Eduardo Margallo, president and co-founder of MedLumics.

The BiopsyPen Project is designed to solve one of the key challenges in dermatology today: the need for a rapid, non-invasive way to support diagnosis and monitoring of skin cancers without the need for an invasive tissue biopsy.

Non-melanoma skin cancer is the most common form of skin cancer in Caucasian populations, costing more than \$11 billion to treat annually in the United States. Melanoma is the fifth most common and deadly tumor type; approximately 2 percent of American men and women will suffer from it at some point during their lifetime. However, there is currently no compact, cost-efficient and non-invasive way to diagnose malignant tissue.

MedLumics is now developing its own first generation hand-held diagnostic device designed to help dermatologists quickly and minimally invasively diagnose skin cancer, among other pathologies. Expected to launch in the second half of 2014, the device combines epiluminescent microscopy and OCT imagery in a patent-protected built-in display that integrates seamlessly with current patient-centered workflows. If approved by regulatory bodies, it will be the first point-of-care OCT imaging

device to integrate all optical and electrical components in a compact microchip-based system that can produce dynamic, real-time, high-resolution diagnostic images with tissue penetration capability of up to two millimeters.

The BiopsyPen, expected to be fully developed in 2017, will build on this first generation device by providing even better performance as well as additional clinical workflow advantages that will make it even easier to use at the point of care. The consortium will also aim to decrease the device's size and cost in order to further accelerate market adoption.

Performance improvements will be driven by the use of more advanced technologies including Doppler OCT, elastography and polarization-sensitive OCT, which will provide greater image contrast for discrimination of malignant tissues. These more sophisticated OCT technologies will also open the door for additional clinical applications for the platform technology.

“Miniaturization of OCT-based imaging technology on integrated photonics enables a novel, unique generation of not only cost-effective, but also compact, robust and nearly maintenance-free handheld OCT systems,” said Prof. Wolfgang Drexler, head of the Center of Medical Physics and Biomedical Engineering at the Medical University of Vienna. “The partners of the BiopsyPen Project have exquisite complementary expertise to accomplish a significant step towards this ambitious goal.”

Consortium Partners

Each BiopsyPen Project partner brings unique expertise to the consortium.

Medical University of Vienna (MUV) brings more than 20 years of pioneering expertise in OCT to the consortium. Based in one of the largest University Hospitals in Europe, MUV will enable the translational research of clinical applications for the BiopsyPen.

VTT Finland will have the main responsibility for developing the photonic OCT chips on its SOI waveguide platform.

Delft University of Technology will lead the design, fabrication and characterization of the MEMS (Micro Electromechanical System) actuators and contribute to integration and assembly issues.

Exalos AG will develop and deliver Superluminescent Light Emitting Diodes (SLEDs) with optimized waveguide angles and far field matched to Si waveguides.

The Polytechnic University of Madrid will design and develop efficient signal and image processing technologies that will enable the reconstruction and enhancement of 2D and 3D OCT images, assuring the diagnostic quality required at the point-of-care. The Polytechnic University of Madrid will also collaborate on the system

integration with its expertise in system on chip (SoC) image acquisition systems and on the validation of the tools developed.

Optocap Ltd. will determine the required environmental operating conditions of the package and ensure that its design provides suitable environmental protection. The company will also assemble the package with appropriate interconnections and ensure that its design is compatible with standard assembly techniques such as die attach and wire bonding.

MedLumics will be the coordinator of the BiopsyPen consortium and of the system integration and will make key contributions in each phase of the project.

About MedLumics

Founded in 2009, MedLumics is a medical imaging company specializing in advanced optical coherence tomography (OCT) devices. Its proprietary integrated optics platform technology combines optical and electrical components in a miniature package, enabling for the first time ultra-portable, hand-held OCT systems that produce high quality real-time images. The systems allow physicians to improve diagnostic and therapeutic procedures through a non-invasive optical evaluation of tissue. MedLumics received a 3.5 million Euro/4.7 million USD Series A financing from joint investors Ysios Capital Partners and “la Caixa” (through Caixa Capital Risc) in November 2011.

For more information, visit www.biopsypen.eu or www.medlumics.com

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