Profile «venture leaders»

Nicolas Abelé
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SCANLIGHT: Micro-mirrors for optical solutions

Industry: Barcode and endoscope manufacturers

Biography

Nicolas Abelé was born in France. He received a double MSc. degree in Paris and Edinburgh in Electronic and Micro-systems Engineering and is currently finishing a PhD at EPFL for a semiconductor manufacturer (STMicroelectronics, France), developing integrated micro components (MEMS) for mobile phone applications. He is involved in three European-founded projects where he prototypes devices at the EPFL facilities and is in charge of the technology transfer to the STMicroelectronics fabrication platform. He is a laureate of the 2005 European Award for Innovation and holds 6 patents on technology and applications in his PhD research field.

In addition to his PhD research, together with Faouzi Khechana, a micro-fabrication expert from EPFL who developed a new technology for micro-mirrors, he plans to start a company implementing these devices for optical scanning applications. Stéphane Bourquin completes the team, being one of the world experts in OCT endoscopes where micro-mirrors are bringing new opportunities.

Company / project

Micro-mirrors were developed at EPFL for Intermec, one of the world's leading barcode manufacturers. Mirrors are classically used in barcode readers to scan a surface by deviating a projected red light beam. Micro-mirrors allow large size and cost reductions, 20x smaller and 5x cheaper, compared to current technology where ¼ of the barcode reader price comes from the mirror. 5 years of development were needed to meet current technical specifications. They plan to launch the company during the next semester.

The business model is to sell stand-alone micro-mirrors for optical components. The IP strategy is based upon the micro-mirror technology protection with 2 patents currently under filling. The short term market is barcode scanners with large manufacturers as targeted customers. The long term perspective is medical applications, by implementing micro-mirrors to develop the first 3D non-invasive OCT endoscope.

Our preliminary goal is to make agreements with Intermec and other barcode manufacturers for micro-mirror implementation in their products. The next step is to fund the development of the second generation of micro-mirrors for OCT endoscopes.

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