


[Home](#)
[Directory](#)
[Content](#)
[Products](#)
[Books](#)
[Information](#)
[Advertise](#)
[News](#)
[Articles](#)
[Podcasts](#)
[Videos](#)
[Events](#)
[Courses](#)
[Jobs](#)
[Classifieds](#)
[Join the NT-MDT ProIMAGE Contest 2010](#)

Nanopositioning


www.parkAFM.com

imec Launches European Seventh Framework Project MIRACLE

[Email / Share](#)
[Back One](#)

 Posted in | [Lab on a Chip](#)

Today, at the Engineering in Medicine and Biology Conference (EMBC) in Buenos Aires (Argentina), [imec](#) and its project partners announce the launch of the European Seventh Framework Project MIRACLE. The MIRACLE project aims at developing an operational lab-on-chip for the isolation and detection of circulating and disseminated tumor cells (CTCs and DTCs) in blood. The new lab-on-chip is an essential step towards faster and cost-efficient diagnosis of cancer.

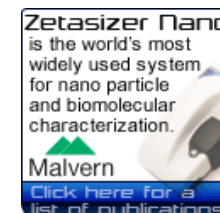
[Ads by Google](#)

[Treat human cells gently](#)

 Better tube-based isolation Find the tools here www.invitrogen.com

Detection of circulating and disseminated tumor cells in blood is a promising methodology to diagnose cancer dissemination or to follow up cancer patients during therapy. Today, the detection analyses of these cells are performed in medical laboratories requiring labor intensive, expensive and time-consuming sample processing and cell isolation steps. A full tumor cell detection analysis can take more than a day. A lab-on-chip, integrating the many processing steps, would enable a faster, easy-to-use, cost-effective detection of tumor cells in blood. They are therefore labor-saving and minimally invasive, increasing the patient's comfort and the efficiency of today's healthcare.

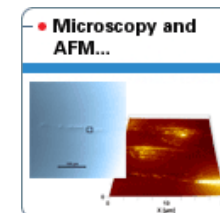
In a preceding joint project by some of the partners (MASCOT FP6-027652), individual microfluidic modules for cell isolation, cell counting, DNA amplification and detection have been developed. Based on this expertise and strengthened by additional partners, the development of a fully automated, lab-on-chip platform to isolate, count and genotype CTCs is envisaged within the framework of the MIRACLE project. For genotyping, genetic material (i.e. the mRNA) will be extracted from the cells and multiple cancer related markers will be amplified based on multiplex ligation dependent probe amplification (MLPA) followed by their detection using an array of electrochemical sensors. Full integration of all steps requires innovative research and processing steps that need a combination of the multidisciplinary and unique expertise of the different project partners (ranging from microfluidics to interfacing, miniaturization, and integration skills). The



advancing dynamic light scattering



The Business of Science®



resulting lab-on-chip tumor detection system will be well ahead of the current state-of-the-art, revolutionizing cancer diagnostics and individualized theranostics.

Within the framework of the MIRACLE project, imec as project coordinator, collaborates with the Universitat Rovira I Virgili (Spain), the Institut für Mikrotechnik Mainz, AdnaGen, ThinXXs and Consultech (Germany), MRC Holland (The Netherlands), the Oslo University Hospital (Norway), the KTH Royal Institute of Technology, Multi-D and Fujirebio Diagnostics (Sweden), ECCO - the European CanCer Organisation and ICsense (Belgium) and Labman (UK). The project aims at developing a fully automated and integrated microsystem providing the genotype (gene expression profile) of CTCs and DTCs starting from clinical samples. MIRACLE is partly funded by the European Commission (FP7-ICT-2009.3.9).

[Ads by Google](#)

[Treat human cells gently](#)

Better tube-based isolation Find the tools here www.invitrogen.com

Posted September 1st, 2010

Related News

- [16 IMEC Authors Accepted for IEEE International Electron Devices Meeting](#)
- [Imec Researchers Examine Gate Oxide Trapping](#)
- [Imec Establishes Metrology Method for Optimizing Etch Rate Uniformity in Transformer Coupled Plasma Reactor](#)
- [10 European R+D Project Consortia Coordinate Efforts in Silicon Photonics](#)
- [Imec's Tandem Organic Solar Cells Offer Path to Higher Efficiencies](#)
- [Imec Demonstrates Value of SiGe above-IC MEMS Technology Platform](#)
- [Imec and ASML Qualifies ASML's Tachyon and FlexRay](#)
- [Imec Sets Major Step Towards 20nm Half Pitch Interconnects](#)
- [Imec Large-Area Epitaxial Solar Cell with Efficiency of 16.3% on High-Quality Substrate](#)
- [Imec Reports Promising Results in Extreme Ultraviolet Lithography Mask Cleaning Program](#)

Popular Latest Random

- [Altairnano Signs MOU with HNEL to Deliver 1 MW Energy Storage System](#)
- [First DRAM Module Based on Nano Thermal Dissipation Technology](#)
- [DuPont and HK Electric Partner for Thin-Film PV Rooftop Project](#)
- [EnSol, University of Leicester to Develop Thin Film Solar Cell Technology](#)
- [AIXTRON Receives Repeat Order From Philips Lumileds](#)

[Nanotechnology News Archive](#)

? Top

Back One

0261239050