DSM SL-DSM-13-0733

Research field:

Cellular biology, physiology and cellular imaging / Life Sciences
Biotechnology, biophotonics / Engineering science

Title:

Fast detection and characterization of pathogens on microsystems

Abstract:

The fast detection of bacterial pathogens is a major issue in several fields. Several crises occurred and illustrated the impact of such pathogens epidemics in our society: Anthrax crisis (USA, Autumn 2001), Legionella (Factory, Nord pas de Calais, late 2003), Salmonella (dried sausages, Haute-Loire, Spring 2010), E. coli (sprouting seed, Germany, Spring 2011), nosocomial infections (recurrent crisis), etc. These examples emphasize the large number of social domains (national safety, food safety, environment, health...) where the detection and characterization of bacterial pathogens is important.

Surprisingly, the techniques involved for 'routine' microbiologic issues are quite old and did not show any significant improvement for the last decades (on the time-delay needed for a full characterization, for instance).

In this context, we propose an alternative and original technique significantly reducing the analysis delay developed in the lab. Beyond this important aspect, we wish to keep going one step further by exploring new routes for the rapid identification of antibiotics sensitive/resistant profiles, the size-reduction of the device, its suitability for 'complex' sample analysis. This project will be carried in strong interaction xwith a start-up company launched in March 2012.

Location:

Institut nanosciences et cryogénie
Structures et Propriétés d'Architectures Moléculaires
Groupe Chimie pour la Reconnaissance et l'Etudes d'Assemblages Biologiques
Starting date: 01/11/2013
Centre : Grenoble

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More about:

http://inac.cea.fr/Phocea/Vie_des_labos/Ast/ast_groupe.php?id_groupe=29

University/Graduate School:

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