



*This project
is supported by:*

The NATO Science for Peace
and Security Programme

Biodetectors based on Advanced Microchips

(ref. 983207)

Since November 2008, investigators from France, Russia and Belarus have cooperated in an effort to couple the emerging nanotechnologies with the protein microarrays and liquid phase NCs-encoded chips technologies through the application of highly-sensitive conjugates of highly luminescent semiconductor NCs with capture molecules as detecting probes. The goal is to develop a bio-detector system employing multi-color, multi-marker microbeads for biodetection using the flow cytometry set-up for single-bacteria and/or single-virus early detection. The developed innovative set-up will then be applied to early detection of bacteria stains that are slow growing (e.g., *Mycobacterium*), or highly infectious (e.g., *Bacillus anthracis*) and simultaneous detection of different bacterial and/or viral species in a single sample using the bacterial *Meningitis* infectious agents detection as a proof-of-the-principle multiplexed demonstration. In the following months, proof of the Concept demonstration of multiplexed bio-detection of at least three different bacterial species provoking bacterial Meningitis and two viruses provoking virus meningitis is expected. One of the end-users is "NanoScan Technologies Ltd." which is specialized in developing and manufacturing of micro-spectroscopy tools, developed the design of the special instrument for optimal excitation and readout of data from the microchips based on nanocrystals.

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Approval Date: 23/07/2008

Effective Start Date: 17/11/2008

Duration: 3 years; expected completion by October 2011