About Flowgene

Flowgene was funded in Nov. 2000 with the mission to promote a proprietary technology that allows DNA sequencing by CapillaryElectrophoresis in a borate based buffer.

When most of the existing DNA sequencing technologies are based on a gel-sieving matrix, Flowgene offers a unique opportunity not only to allow sequencing of longer than usual DNA strands, but also to do it faster (30 KV high voltage) and more efficiently (no capillary aging).

Because Laser Induced Fluorescence detection is clearly associated with DNA Sequencing, even at the early stage of the company, Flowgene had the prospective to develop a dedicated detection device that will allow performing DNA sequencing on any CE instrument available on the market.

By 2003, Flowgene identified an original light detection concept based upon the properties of an ellipse. This detection concept not only provides a very high light level collection, but can be used on various applications, like fluorescence detection, Flux Cytometry, Chips technology, Raman effect detection, ….

Considering the prospective of such a detection technology, Flowgene decided to put the DNA sequencing technology on hold, and to concentrate its financial resources towards detector development.

This decision was comforted by the release (around 2000) by PhotonSystems of a new generation of Deep-UV lasers. These lasers emit at 224 or 248 nm, and at these wavelengths, most of biological molecules will natively fluoresce. Furthermore, it was later found out that the fluorescence spectrum emitted by a molecule when excited by one of these lasers might very well be used for molecule identification.

The association of the elliptic cell and the Deep-UV laser had the prospective to open a big market in Analytical Chemistry, mainly in HPLC and CE, providing the scientist with extra sensitivity, without the hurdle of using labeling chemistry. Results showed a sensitivity improvement around 100 fold when compared with Diode Array Detector.

In 2006, Flowgene was awarded a development contract to expand its fluorescence detection technology under a 224 nm laser towards Raman Effect detection with the same laser. The objective is to use Raman Effect to identify conformational changes of Proteins. The detector was released end of 2007, and now most of the work is dedicated to application development.

The 224 nm Laser Induced Native Fluorescence detector designed for the HPLC and Cap-LC market was released in 2007, and was toured through out Europe and the US to probe the applications, and incidentally the market. The most promising application identified so far concerns the proteins. And this will be further enhanced when the HPLC LINF detector will provide the fluorescence spectrum capability: this might lead to a very simple identification of conformational variation of proteins. This is a pending development. Again, by 2008, Flowgene received another development contract to expand its detection technology to a specific application in Analytical Chemistry. This contract is still running. Finally, by the end of 2010, Flowgene identified a proprietary technology based upon an adiabatic expansion to detect compounds in suspension in air. The term "compounds" includes particles, bacteria, spores, and Volatile organic compounds. Results so far demonstrate that the instrument is far more sensitive than a human nose. Investigations are still in progress. This detection technology opens several major markets, like diagnostic market (cancer detection by odor detection), food industry, drugs and explosive detection,… The story is not yet ended : Flowgene is now looking forward bacteria detection in fluids

Flowgene was incubated at the Genopole d’Evry, and later, was funded by a Seed Venture fund (Le Lanceur, Sofimac Partners). First sales started in 2004, and the financial break even was reached in 2006.