



## Who we are

### Biosensor srl offers:

- new biosensor instruments for environmental monitoring, agri-food analyses and biomedical applications;
- bioassay development;
- technological solutions and consulting services in the biosensor development sector;
- a strong know how and documented expertise in the field of algae growth, water waste treatment by algae, bio-reactor design and development.

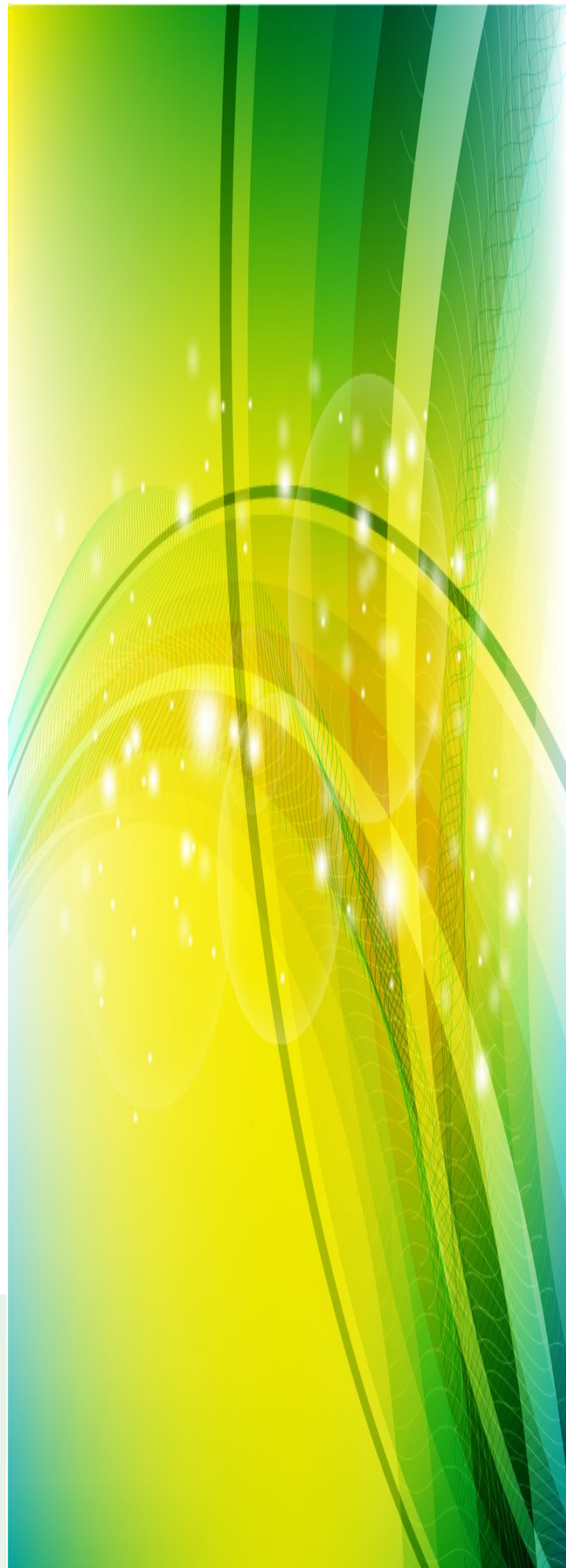
Biosensor is available as partner in technology development in European programmes.

## Vision

Being a leading company supporting basic life sciences through advanced manufacturing, multidisciplinary competences, and the constant pursue of new business and research opportunity on biology.

## Mission

Providing expertise in design, prototype fabrication, calibration, testing and product engineering of miniaturized modular automated instruments for biotechnology, agrifood, environmental monitoring, biomedical application.



## Biomediators and Analytes

Possible matrix: water, juices, oil, plasma, urine etc.

Substance to detect analyte	Example of specific analytes	Principle of Analysis Biomediator	Type of Analysis	Limit of Detection LOD
				Concentration w/v
Photosynthetic herbicides	Triazine: Atrazine, Simazine Phenyl-uree: Diuron, Linuron	Algae	Fluorescence and Amperometry	Range 0.68 - 0.02 µg/l
Photosynthetic herbicides	Atrazine, Simazine, Diuron, Linuron	Thylakoids	Amperometry	Range 9.9 - 0.17 µg/l
Carbamate and Organophosphate	Chlorpyrifos	Acetylcholinesterase	Fluorescence	0.35 µg/l
Carbamate e Organophosphate	Paraoxon	Butyrylcholinesterase	Amperometry	3.5 mg/l
Phenolic Compounds	Catechol	Tyrosinase	Fluorescence	0.2 µg/l
			Amperometry	0.3 mg/l
		Laccase	Fluorescence	0.1 mg/l
			Amperometry	0.1 mg/l
	Bisphenol A	Laccase	Amperometry	11 mg/l

Substance to detect	Principle of analysis Biomediator	Type of Analysis	Limit of Detection LOD
			Concentration w/v
Glucose	Glucose Oxidase	Amperometry	0.9mg/l
Lactose	Glucose Oxidase+ β- galactosidase+ Horseradish peroxidase	Amperometry	31mg/l
	β- galactosidase	Fluorescence	0.09g/l
Urea	Urease	Fluorescence	0.12g/l

## Devices for biomediators: microorganisms, enzymes, proteins, cells, tissues



### Amp Biosens

Amp Biosens is a one cell Amperometric Biosensor based on Screen-printed Electrodes (SPEs) reading responses from a biological mediator which interacts directly with the substance to detect.

### Antiox Biosens

The Antiox Biosens device is an electrochemical Biosensor based on Screen-printed Electrodes (SPEs) detecting antioxidant capacity from a biological mediator. Among the substances analyzed there can be especially food, juices and raw materials.



### BioITO Biosens

BioITO Biosens is an Amperometric Biosensor prototype based on Indium Tin Oxide (ITO) electrode reading responses from a biological mediator which interacts directly with the substance to detect. The output current is read out by two electrodes: the ITO (coated on a glass substrate) and a (carbon) screen printed electrode (SPE).

### Fluo Biosens

Fluo Biosens is a modular biosensor instrument, characterized by 2 (until 6) independent cells for carrying out, simultaneously, fluorescence tests on several types of biomediators.



### Fluo Flux

Fluo Flux is a modular biosensor instrument able to grow microorganisms used as biomediators, and to perform fluorescence measurement detecting analytes in the samples.

### MultiArray Biosens

MultiArray Biosens is a multi-cell Amperometric and Fluorescence Biosensor based on Screen-printed Electrodes (SPEs). MultiArray Biosens can read responses from a biological mediator which interacts directly with the substance to detect.



### MultiBioPlat

MultiBioPlat is a prototype biosensor platform which combines three types of transduction systems into miniaturized measurement cells: Fluorescence, Amperometry and Conductometry. The prototype is based on MicroElectrodeArray (MEA) for the amperometric and conductometric detection and an optical module for fluorescence sensing.

### Multilight Biosens

Multilight Biosens is a modular biosensor instrument, characterized by an array of six cells for carrying out, simultaneously, tests of fluorescence on several types of biomediators (algae and enzymes)



### Multitask Biosens

Multitask Biosens is a double cell Amperometric and Fluorescence Biosensor based on Screen-printed Electrodes (SPEs) reading responses from a biological mediator which interacts directly with the substance to detect.

### SMAIgal Sens

SMAIgal Sens (System of Measurement for Algae) is a small portable instrument to optically characterize the fluorescence emission and the optical density (correlated to a cell density) of algae culture (e.g *Haematococcus pluvialis*, *Spirulina sp.*, *Chlorella minutissima*, etc.).

It is possible to connect the SMAIgal Sens instrument directly to a bioreactor by-pass to monitor the algae culture condition.





**Chips for biomediators**



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