Application note

# Biosensors research

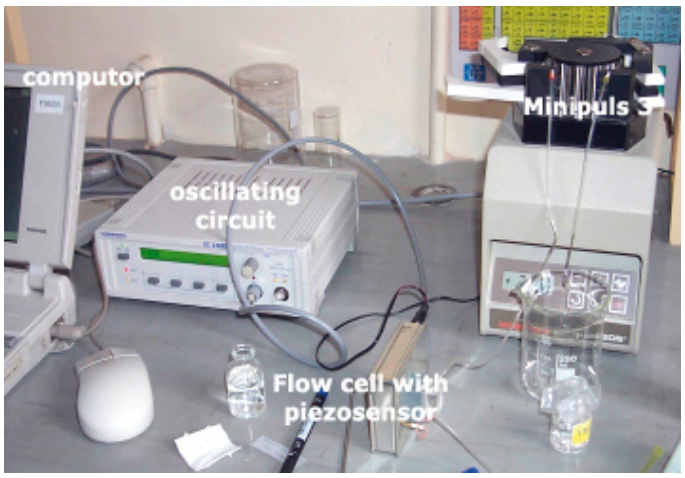
The applications of piezoelectric biosensors are coming down to determination of viruses, bacterial and other cells, proteins nucleic acids and small molecules such as drugs, hormones and pesticides. The measuring setup for affinity studies mainly consists of a piezosensor, a driving computer, and a flow-through system.

In the Department of biochemistry at Masaryk University, Czech Republic, a piezoeletric quartz crystal is used as a biosensor applied for bioanalytical assays and characterization of affinity interactions. Their measuring setup consists of a piezosensor, driving electronics and a flow-through system.

In such a protocol, it is essential to provide a smooth and reliable flow rate. Engineered to function with high accuracy and low pulsations, the **Minipuls 3** is ideally suited. The system is designed to carry out the protocol comprises a **Minipuls 3** that pumps at a low flow rate between 30 and 200 µL/min. an aqueous solution with a buffer from the flow cell with the crystal to a waste vial.

Such precise variations of flow rate can be obtained with the **Minipuls 3**, whose rotation speed increments by 0.1 rpm (rotation per minute) and by 0.01 rpm between 0 and 10 rpm. In addition to its precision and reliability, the **Minipuls 3** was chosen to minimize the noise and the perturbations due to pulsations which are significantly reduced thanks to its exclusive 10 roller rotor.

Not only simple to use and quick to setup, the **Minipuls 3** is also versatile. After being used for the flow-through system, it is then connected to a Gilson auto-injector, model 231 XL to circulate samples for Flow-Injection Analysis. **Minipuls 3** can be operated remotely using RS232 or analog connection within a fully automated system.




*« Reliable, easy-to-use and to set up »*

Petr SKLADAL,Masaryk University, Czech Republic.

## Field of Application

Bioanalytical chemistry

## Typical customer

Research laboratory

| Required Minipuls 3 products | Reference |
|---|---|
| Minipuls 3 control module | F155001 |
| R2 2-channel pump head | F117800 |
| Peristaltic tubing PVC, 0.25 mm ID orange/blue | F117932 |



GILSON® SOLUTIONS AT WORK FOR YOU