

Products usable for microdialysis

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INTRODUCTION

BVT produces the electrochemical sensors and biosensors which can be used as detectors in microdialysis. Overview is presented here.

GLUCOSE OXIDASE BIOSENSOR Type: AC1.GOD

Glucose Oxidase (GOD) from *Aspergillus Niger* is immobilized on the active surface of a working electrode of amperometric substrate AC1.W2.RS. The diameter of the immobilized bioactive membrane is 2 mm and the mean applied activity is 1 unit/mm². Sensor detects glucose.



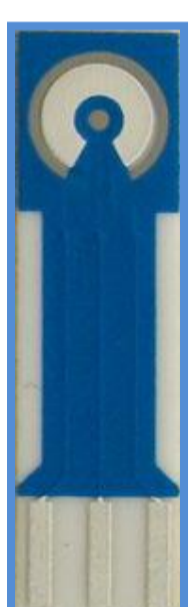
ACETYLCHOLINESTERASE BIOSENSOR Type: AC1.AChE

Acetylcholinesterase from electric eel type VI-S is immobilized on the active surface of a working electrode of electrochemical sensor AC1.W2.RS (i.e. Platinum working electrode, silver reference electrode). The diameter of the immobilized bioactive membrane is 2 mm and the mean applied activity is 1 unit/mm². Sensor detect cholin or thiocholin.



LACTATE OXIDASE BIOSENSOR Type: AC1.LOD

Lactate oxidase from *Pediococcus* sp. (LODP) is immobilized at the surface on the active surface of the amperometric substrate AC1.W2.RS. The diameter of the immobilized bioactive membrane is 2 mm. Sensor detect lactate.



OTHER SENSORS

The sensors for pyruvate, glutamate, urea and glycerol (and many other compounds) can be optimized in dimensions of AC1 or CC2 sensor. However the time and cost of optimization is quite high.

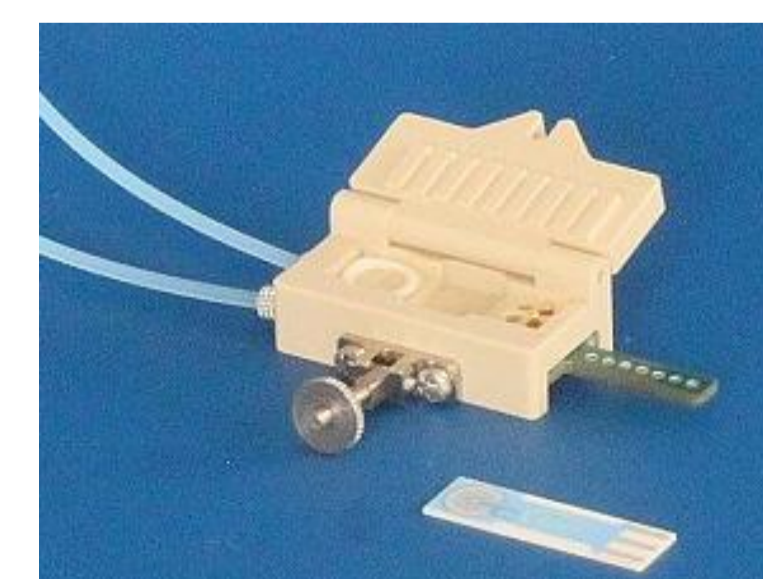
FLOW CELL Type: FC2.*

The flow cell enables the use of AC1, AP1, CC1 sensor in a flow through arrangement. The sensor is inserted into the slit of cell and tightened by closing of the door. The cell ensures the wall-jet flow around the working electrode and it is optimised so that no air bubbles are cumulated in the cell. The cell contains also the contact and output cable. Cell can be delivered in wall jet or thin layer arrangement.



FLOW CELL FC4.*

The FC4.* flow cell is made of PEEK and is chemically inert. It has teflon endings permitting a fully compatible connection to chromatography tubing. Other parameters are same as FC2.



INTERCHANGEABILITY

All sensors AC1, CC1, CC2, AC1.GOD, AC1.AchE, AC1.LOD and other can be used in flow cells FC2, FC3, FC4.

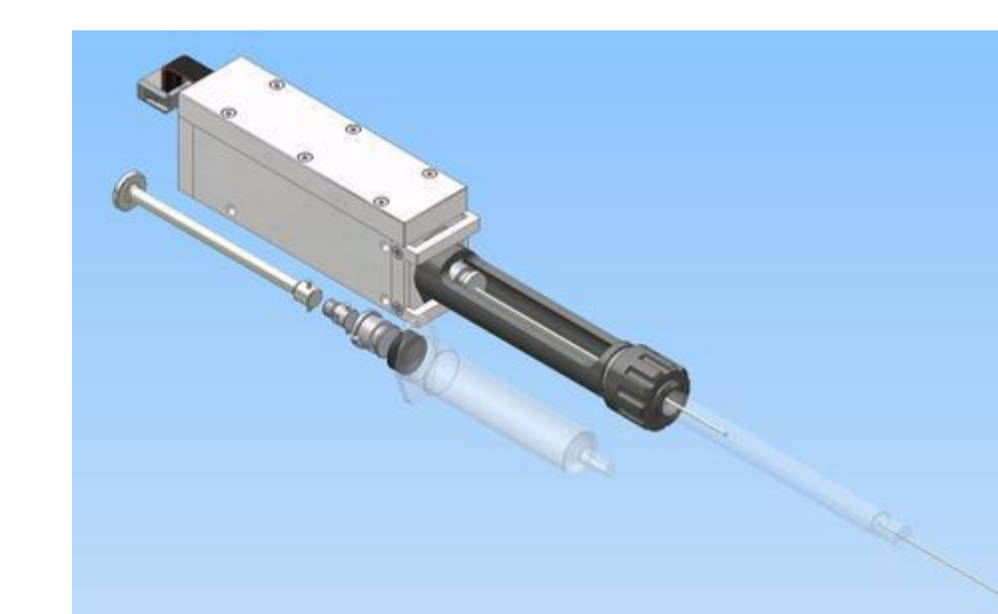
USB POTENTIOSTAT

The device contains the amperometry, cyclic voltammetry and pulse amperometry. It is convenient for fast screening electrochemical measurement.



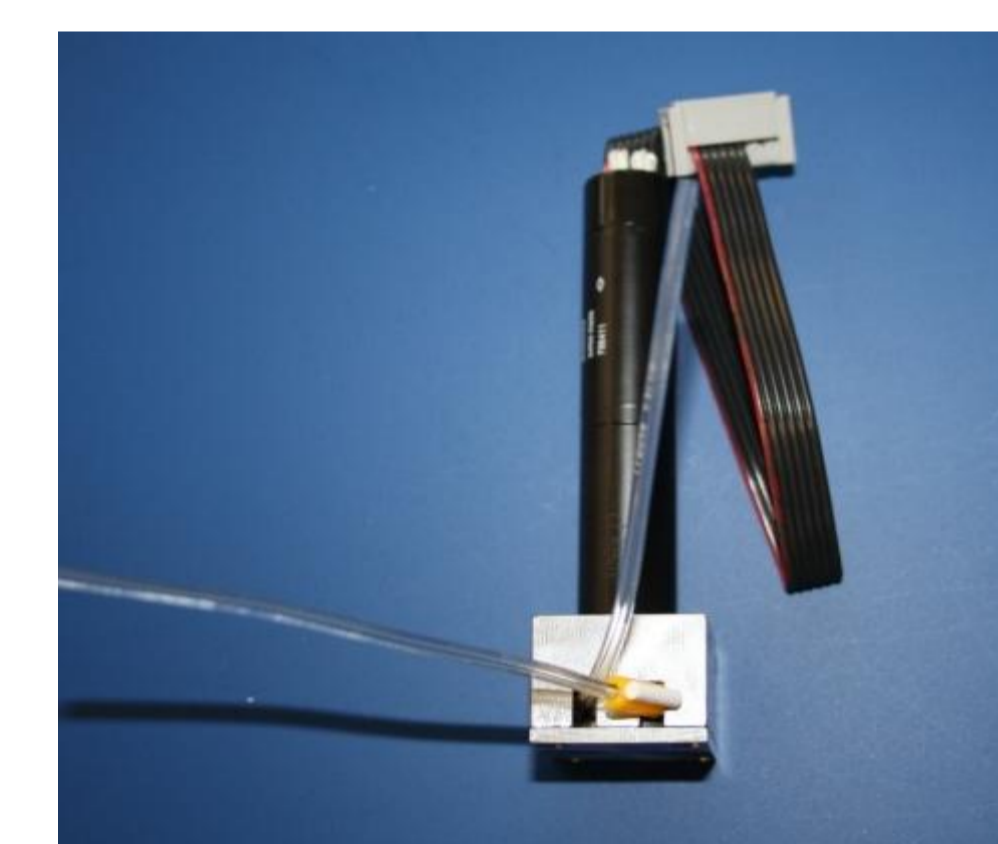
LINEAR PUMP Type: LP.*

The linear pump LP.* consists of miniature motor with digital encoder and planetary gear, which is in aluminum body of pump. The motor drives the screw which moves the piston in syringe in both directions. The pump is designed for extremely small applications such microdialysis as well as medical or military research applications. It can be used in hand-held devices. The main advantage is no pulsation and easy connection with syringe piston. The pump can supply liquid through flow cells FC2/FC3. Linear pump is delivered with optional Hamilton syringe holder. The pump is programmable and fully operational as USB device. The pump is not certified for clinical use.



PERISTALTIC PUMP Type: PP.M*/*.T*

The peristaltic pump PP.M*/*.T* consists of miniature motor with planetary gear and stainless body of peristaltic pump. Optionally the motor is equipped with encoder. The pump has **one channel or two channels**. The flow is in one direction. The pump is designed for extremely small applications such as microdialysis as well as medical or military research applications. It can be used in hand-held devices. The lifetime of tubing is optimized to maximal value. The pulsation is minimized for flow cell FC2. The device is programmable and supplied by USB connection with PC. The pump is not certified for clinical use.



CUSTOMISED MEASURING SYSTEMS

The product can be set up into customized system for automatic measurement or fully programmable measurement. (The figure 1 shows the output of automatic long term sensor stability measurement, as an example.)

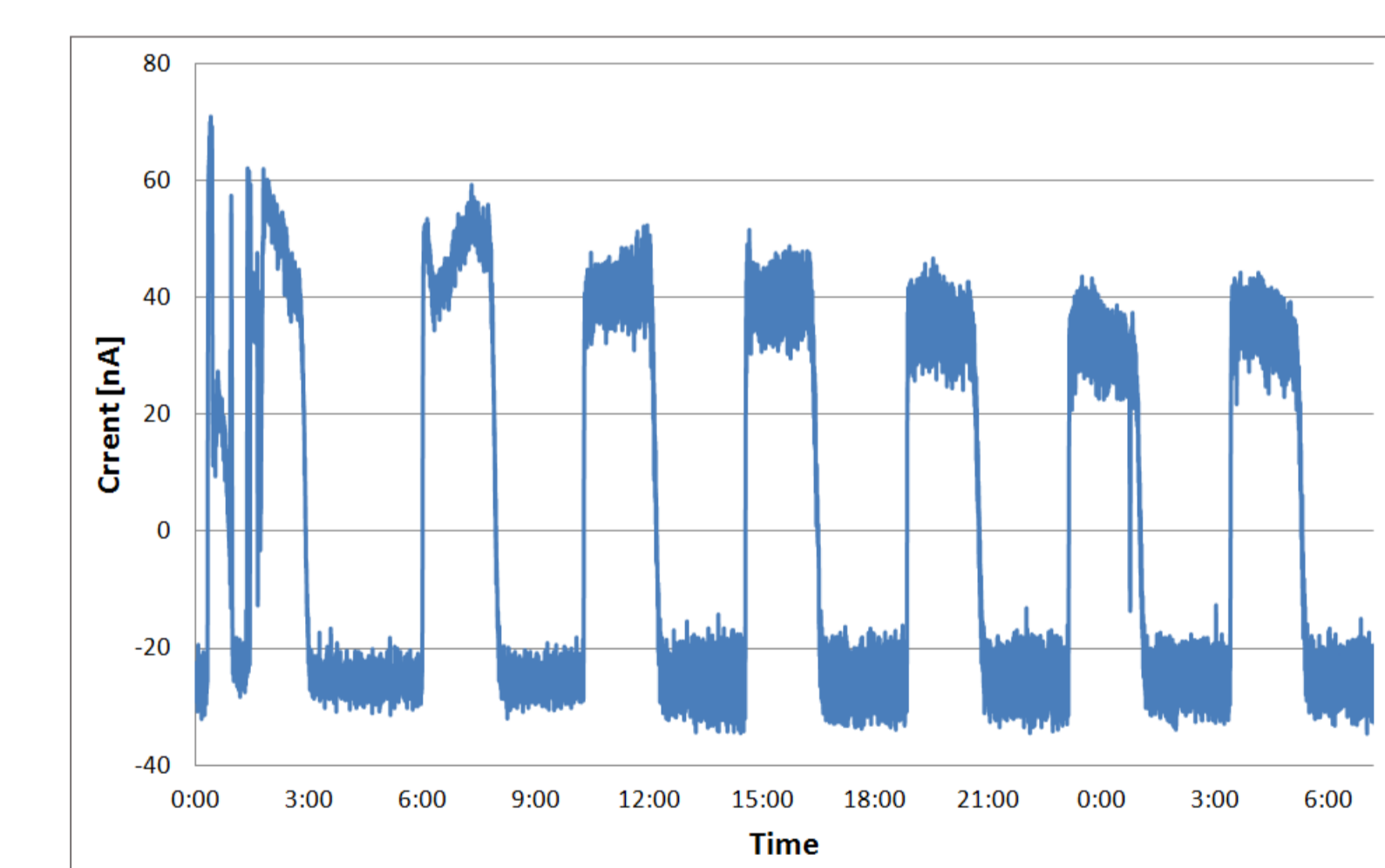


Fig. 1. The measurement of long-term stability GOD sensor with 3mM glucose solution.



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