

# 910 PSTAT mini



Starting out in the world of electrochemistry

## 910 PSTAT mini – small but impressive

02

The 910 PSTAT mini is a small and compact, PC-controlled potentiostat for use in training and simple applications in research and development. The PSTAT software supplied is easy and intuitive to use and offers the main electrochemical measuring techniques. The cost-effective disposable sensors can be used directly without any preparation or conditioning.

These features make the 910 PSTAT mini the ideal potentiostat for those starting out in the world of electrochemistry.

### Main applications

Training in electrochemistry	Electrochemical research and development
<ul style="list-style-type: none"><li>• Practical courses for students</li></ul>	<ul style="list-style-type: none"><li>• Sensor development</li></ul>
<ul style="list-style-type: none"><li>• Demonstration experiments</li></ul>	<ul style="list-style-type: none"><li>• Reversibility of electrochemical reactions</li><li>• Reaction kinetics</li></ul>





## The most important advantages at a glance

- Small and compact
- Mobile
- Cost-effective
- All important electrochemical measuring techniques
- Maintenance-free disposable sensors
- Power supply via USB
- Simple, intuitive PSTAT software
- Available together with the monograph «Electrochemistry – A Laboratory Textbook»

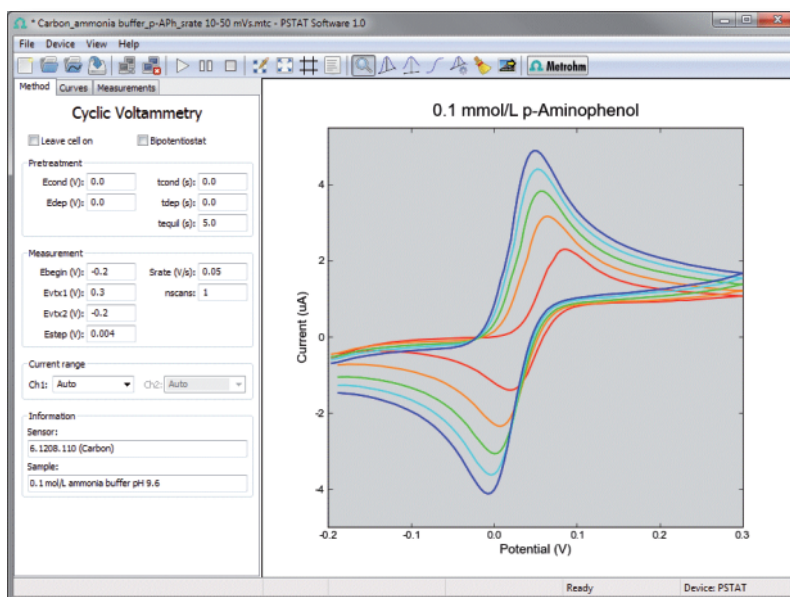
# The 910 PSTAT mini in detail

04

## Software

Because of its simple structure and intuitive operation the PSTAT software is especially suitable for training in electrochemistry. The focus is on measurement. Therefore, the

software only includes functions that are really important for measurement, i.e. measurement parameters, curves and manual signal evaluation.



Cyclic voltammograms of p-aminophenol at different scan rates

## Measuring techniques

The PSTAT software provides all basic electrochemical measuring techniques:

### Cyclic voltammetry (CV)

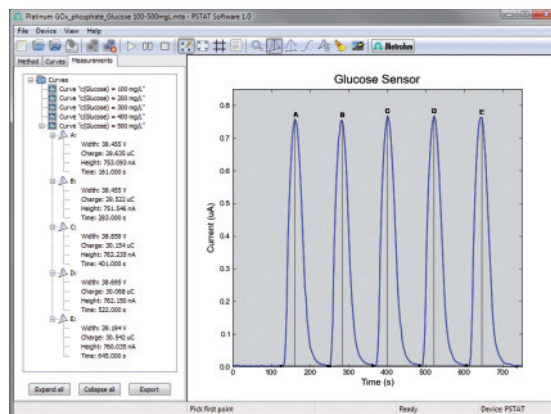
Cyclic voltammetry (CV) enables studying the mechanism and kinetics of electrode reactions. Thus, statements can be made concerning the reversibility of electrochemical reactions and important parameters such as diffusion coefficients and reaction rate constant can be calculated. Beyond that, cyclic voltammetry is also suitable for examining and characterizing modified sensors.

### Differential pulse voltammetry (DP) and square wave voltammetry (SWV)

Differential pulse voltammetry (DP) and square wave voltammetry (SWV) are the traditional techniques for quantitative determination of electrochemically active substances. Using the screen-printed electrodes supplied, it is possible to measure metals such as mercury and organic substances such as vitamin C directly. Following modification of the sensors (e.g. with a bismuth film), cadmium and lead can be determined.

### Chronoamperometric detection (AD)

Many biosensors, e.g. the glucose sensor, operate amperometrically when a constant potential is applied. With the 910 PSTAT mini and the screen-printed electrodes that are available it is easy to work out the construction and principle of a biosensor.



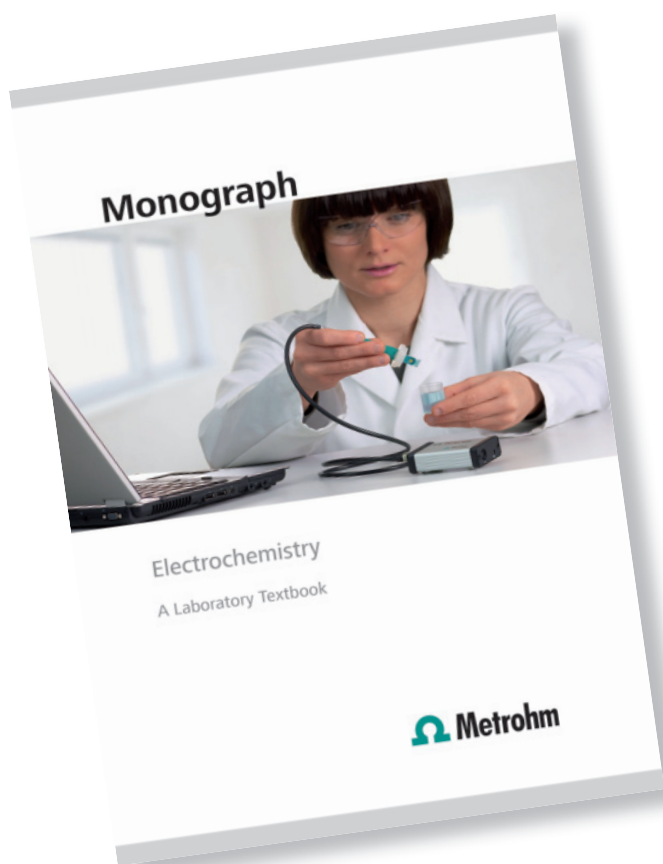
Determination of glucose for example in fruit juice

### Screen-printed electrodes (SPE)

The cost-effective disposable thick-film electrodes make electrochemistry easy. The electrode is placed in the holder and measuring can begin without any further preparation. Each sensor contains the 3 electrodes needed: the carbon, gold or platinum working electrode, a silver reference electrode and a carbon auxiliary electrode on a ceramic substrate. The electrode is used only as long as it provides accurate results and after that is replaced by a new electrode – simply plug and play.



Screen-printed electrodes: Carbon, gold and platinum (left to right)



### Monograph «Electrochemistry – A Laboratory Textbook»

«Electrochemistry – A Laboratory Textbook» makes it easier than ever to start out in electrochemistry. This handy book includes experiments that explain the basic phenomena of electrochemical analysis. The experiments can be carried out easily with the 910 PSTAT mini and the electrodes supplied with it. Apart from detailed descriptions of the experiments, students will also find information on further reading and example curves with the key explanations.



## Technical data Bipotentiostat

	Voltage range:	$\pm 2.048$ V
	Voltage resolution:	1 mV
	Current range:	$\pm 200$ $\mu$ A
	Current measurement:	6 ranges (2 nA – 200 $\mu$ A)
	Current resolution:	0.05% of the current measurement range, 1 pA in the smallest current measurement range
<b>Current measuring techniques</b>	Linear Sweep Voltammetry (LSV) Cyclic Voltammetry (CV) Square Wave Voltammetry (SWV) Differential Pulse Voltammetry (DPV) Amperometric Detection (AD) Pulsed Amperometric Detection (PAD)	
<b>Connectors</b>	Mini USB 8-pin Mini DIN remote connector for up to 5 digital I/O control lines, up to 3 analog input lines (10 bit ADC resolution) and 1 analog output line (0...+5 V) Connector for electrode cable	
<b>Power supply</b>	5 V DC / 45 mA max. (USB)	
<b>Dimensions</b>	Width:	80 mm
	Depth:	54 mm
	Height:	23 mm
<b>Weight</b>	94 g	
<b>PC requirements</b>	PC with Windows XP Professional, Windows Vista Professional or Windows 7 Professional 1 free USB port Monitor with min. 1024 x 768 pixel resolution, 1280 x 1024 recommended	

## Ordering information

2.910.0010 910 PSTAT mini  
Portable bipotentiostat for training in electrochemistry

07

### Accessories included

- Carrying case
- Box with disposable screen-printed electrodes (SPE): 30 carbon electrodes, 30 gold electrodes, 15 platinum electrodes
- Dummy cell with connection cable
- Electrode cable
- Measuring vessel with cover and holder
- Mini USB cable
- PSTAT software CD

### Options

6.1208.110 Carbon electrodes (SPE), box of 75  
6.1208.210 Gold electrodes (SPE), box of 75  
6.1208.510 Platinum electrodes (SPE), box of 75  
6.2163.020 Remote cable



[pstatmini.metrohm.com](http://pstatmini.metrohm.com)