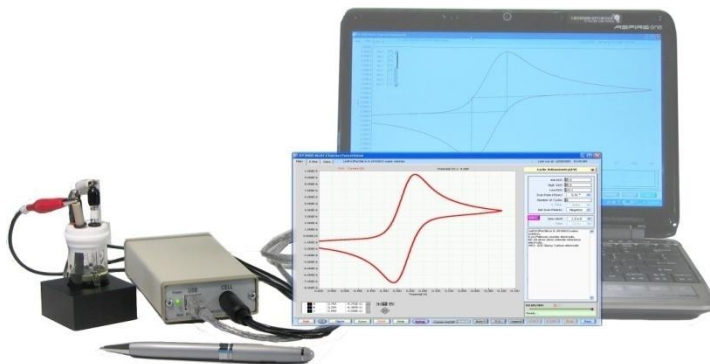




DY2100 Series Mini Potentiostat



A portable, high-performance, and very low-cost scientific instrument for picoampere to mA current measurements and high input impedance voltage recording

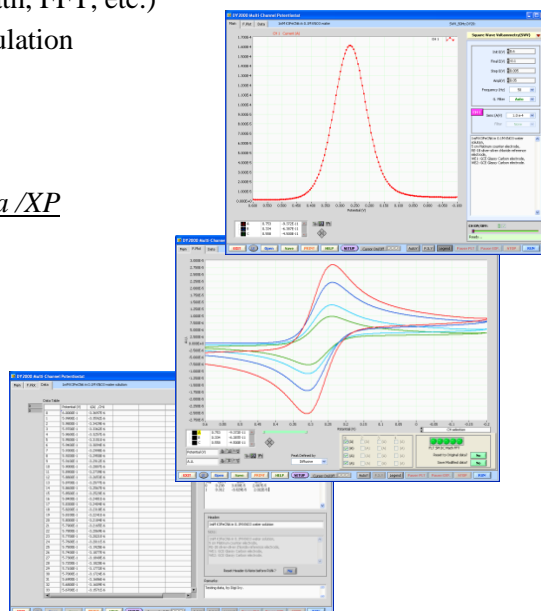
Hardware

- Electrode Configurations: 3 (CE, RE, WE) with cell On/Off control
- Max. Current Range: $\pm 2\text{mA}$ ($\pm 20\text{nA}$ to $\pm 2\text{mA}$ in 6 ranges)
- Current Resolution: 0.002% of full scale, with highest resolution at 0.76 pA
- Input Impedance of Electrometer: $> 10^{12} \Omega$
- Potential Range: $\pm 2.0 \text{ V}$ (16-bit DAC)
- Potential Bandwidth: $> 1 \text{ kHz}$ ($> 30 \text{ kHz}$ for DY2113)
- Min. Potential Resolution: $76 \mu\text{V}$
- Compliance Voltage: $> \pm 2.2 \text{ V}$
- I/E Low Pass Filter: 4 ranges (Auto or Manual), depend on sensitivity setting
- Input Bias Current: $< 30 \text{ pA}$ @ 25°C
- ADC Sampling: 16-bit (15000 data max).
- Dimensions & Weight: 7 x 14 x 3 cm, 260g
- Power Requirements: USB powered

Software

- **Easy-to-use** user interface for experimental setup, graphic display, data analysis and file management
- Data Processing (Filter, Smoothing, Remove DC Offset, Math, FFT, etc.)
- Automatic peak potential, current reporting and charge calculation
- Plots overlay and text data exportation
- Easy cursors define and measurement
- Real time display with Pause Plot and Pause Exp. functions
- USB connection, user provide PC running Windows 7/ Vista /XP

Techniques	DY2110	DY2111	DY2113
Max. Sampling Rate (Hz)	200	200	10000
Max. CV Scan Rate (V/sec)		0.1	10
Amperometric i-t Curve (iT)	x	x	x
Cyclic Voltammetry (CV)		x	x
Linear Sweep Voltammetry (LSV)		x	x
Open Circuit Potential vs. Time (OCP)	x	x	x
Differential Pulse Voltammetry (DPV)			x
Normal Pulse Voltammetry (NPV)			x
Multi-Step Potential (MSP)			x
Square Wave Voltammetry (SWV)			x



DY2100 Series Mini Potentiostat Specifications

Hardware

Max. Current Range:	±2.0mA (±20.0nA to ±2.0mA in 6 ranges)
Current Resolution:	0.002 % of current range, 0.76pA for 20nA range
Max. Controlling Voltage:	±2.0 V
Max. Compliance Voltage:	±2.2V
Current Accuracy:	< 0.5 % of the full current range (200nA to 2mA), 1% for 20nA
Input Bias Current @ 25 °C:	< 20 pA
Min. Potential Step (by user):	1.0 mV (60 µV for the hardware)
ADC Converter:	16-bit
DAC Converter:	16-bit
System Bandwidth:	> 1 kHz
Min. Rise time of Applied Waveform:	< 1 msec / V
Min. Time Base:	5 msec (0.1 msec for DY2113)
Max. Data Points per CH:	15000
Computer Interface:	USB with PCs running <u>Windows 7/ Vista /XP</u>
Dimensions (W x D x H) & Weight:	7 x 14 x 3 cm, 250g
Power Requirements:	USB powered

Software Techniques

- 1) Amperometric i-t curve (iT)
Sampling Time (sec) = [0.005 to 100] {[0.0001 to 100] for DY2113}
- 2) Cyclic Voltammetry (CV)
Scan Rate (V/sec) = [1e-5 to 0.1] {[1e-5 to 10] for DY2113}
- 3) Linear Sweep Voltammetry (LSV)
Scan Rate (V/sec) = [1e-5 to 0.1] {[1e-5 to 10] for DY2113}
- 4) Open circuit potential vs. time (OCP)
Sampling Time (sec) = [0.005 to 100] {[0.0001 to 100] for DY2113}
- 5) Differential Pulse Voltammetry (DPV)
Step E (V) = [0.001 to 0.1], Amplitude (V) = [0.001 to 0.5], Pulse Period (sec) = [0.02 to 100]
- 6) Normal Pulse Voltammetry (NPV)
Step E (V) = [0.001 to 0.5], Pulse Period (sec) = [0.02 to 100]
- 7) Multi-Step Potential (MSP)
Step E (V) = [-2.0, +2.0], Step Width (sec) = [0.005 to 200]
- 8) Square Wave Voltammetry (SWV)
Step E (V) = [0.001 to 0.1], Frequency (Hz) = [0.01 to 50]