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Autolab PGSTA 30

Autolab combined with the software is a computer-controlled electrochemical measurement system. It consists of a data-acquisition system and a potentiostat/galvanostat.

Principles of operation.
1. Autolab and the General Purpose Electrochemical System software (GPES) provide a fully computer controlled electrochemical measurement system. It can be used for different purposes: general electrochemical research; voltammetric analysis with solid electrodes, such as glassy carbon or other electrodes; research of electrochemical processes like plating, deposition and etching electrochemical corrosion measurements.
The Autolab software installed following programs: peak search, chronoamperometric, chronocoulometric, Tafel slop analysis, corrosion rate, cyclic and linear sweep voltammetry. Important parameters: current range – 10 nA to 1 A; potential range – ± 10 V; applied potential and current accuracy – ±0.2% of setting; time constant – 10 and 100 ms, 1 and 10s.

2. Autolab and the Frequency Response Analysis system software (FRA) provide a fully computer controlled electrochemical impedance spectroscopy. It can be used for different purposes: a frequency scan is measured at a single dc-potential value; a frequency scan is measured at a set of dc-potential value; a frequency scan is made at a fixed potential at regular time intervals. The Autolab software installed following programs: draw a plot of the quadrature impedance versus in-phase impedance (Z" versus Z'); draw a plot of the quadrature admittance versus in-phase admittance (Y" versus Y'); draw a plot of the logarithm of the impedance and the phase angle versus the logarithm of the frequency (Bode plot); and another. Important parameters: frequency range – 0.02 Hz to 10 kHz; applied amplitude – 0.2 mV to 0.35 V with steps of 0.1 mV; output impedance – 50 Ω; ADC input range – 0.01 to 5 V.

1 – Autolab PGSTAT30, 2 – electrochemical cells, 3 – computer.