AUTOLAB®

Autolab
is the name of a family of *computer* controlled electrochemical instruments.
Within this family a large number of *different* instruments is available.
Thanks to the *modular* concept, every instrument can be configured to the *needs* of the user.

The Autolab instruments can be controlled from two different software packages:
GPES for electrochemical techniques and FRA for impedance spectroscopy (in combination with a FRA2 module).
The combination of the Autolab hard- and software gives the user an unrivalled instrument to perform a wide range of electrochemical experiments.

Different *modules* are available to expand the *possibilities* of the Autolab main units: PGSTAT12, PGSTAT30 and PGSTAT100.

FRA2 A module for Impedance Spectroscopy from 10 µHz to 1 MHz.
FI20 A Filter and Integrator module.
ADC750 A fast sampling module.
SCAN-GEN An analog sweep generator.
BSTR10A/20A A current booster for 10 A or even 20A.
BIPOT
pX For pH and bi-potentiometric.
ECN For electrochemical noise measurements.
ECD A low current amplifier.
MUX The multiplexing module.

µAutolab II
This is a non-modular, compact potentiostat/galvanostat capable of measuring or applying a maximum current of 80 mA and with a current resolution of 30 fA.
In combination with the GPES software, a large number of electro-chemical techniques can be used, from standard cyclic voltammetry to AC voltammetry and constant current potentiometric stripping analysis.
The instrument has a built in analog integrator, making it possible to do chrono-coulometry, as well as an analog input to measure an external (voltage) signal and output to control a Rotating Disk Electrode.
In combination with a so called IME interface, mercury electrodes can be attached and controlled from the software. This instrument is well suited for all low current applications in case no additional modules are required.

Autolab SPR
This instrument in combination with one of the Autolab potentiostats, gives the possibility to do Electrochemical Surface Plasmon Resonance. This technique, which is especially used in pharmaceutical and biochemical research, is used to follow surface processes that take place on a (Au) thin film electrode. Well known is the use to study antibody-antigen interactions. More examples of the use of this technique as well as a more detailed explanation and specifications can be found in the Autolab application note on this subject.

Autolab/PGSTAT12
A modular low-current, low noise potentiostat/galvanostat capable of measuring or applying a maximum current of 250 mA, with a compliance voltage of 12 V and the possibility to do iR-compensation. The instrument basically offers the same possibilities as the µAutolab II, except for the built in Integrator, which is not present in the Autolab PGSTAT12. In combination with one or more of the optional modules, the instrument can be used for any kind of electrochemical research.
All the optional modules, except the BSTR10A/20A, are available for the PGSTAT12. The instrument can operate in three and four electrode mode.

Autolab/PGSTAT30
This is a modular high current potentiostat/galvanostat with a maximum current of 1 A, a compliance voltage of 30 V and the possibility to do iR-compensation.
The instrument offers the same capabilities as the PGSTAT12, but has a bandwidth of over 1 MHz and is, in combination with the FRA2 module, especially dedicated to do Impedance Spectroscopy.
The PGSTAT30/FRA2 system is capable of measuring impedances in the range from 1 mOhm up to 100 GOhm and capacitances from 0.1 pF up to 5000 F and can be used in fields like corrosion research, bio-electrochemistry, battery and super-capacitor research and many other areas.
Another possible configuration is the PGSTAT30 with BSTR10A or BSTR20A for experiments at high currents (10A and 20A respectively).
This configuration also operates in combination with the FRA2.
Of course all the other modules are available for the PGSTAT30 as well. The PGSTAT30 can operate in four electrode (for liquid-liquid measurements for example) as well as in three electrode mode.

Autolab/PGSTAT100
This is a modular high voltage potentiostat/galvanostat capable of measuring or applying a maximum current of 250 mA, a compliance voltage of 100 V and the possibility to do iR-compensation. The instrument offers the same possibilities as the PGSTAT12 and PGSTAT30 and is especially suited for experiments in electrolytes with low conductivity.
All optional modules (except the MUX) are available for the Autolab/PGSTAT100.