



GalvanoPlot

Quick Guide for GalvanoPlot SUITE



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General Information

Requirements

PC requirements for the GalvanoPlot SUITE:

- Windows Vista, 7, 8, or 10 (32-bit or 64-bit)
- .NET 4.5.2 framework installed.
- 1 GHz or faster 32-bit (x86) or 64-bit (x64) processor
- 1 GB RAM (32-bit) or 2 GB RAM (64-bit)
- Minimal screen resolution of 1024 x 768 pixels

Installation

Download the GalvanoPlot SUITE software: <https://galvanoplot.com/galvanoplot-suite/>
This installer also loads the necessary drivers for your PC.

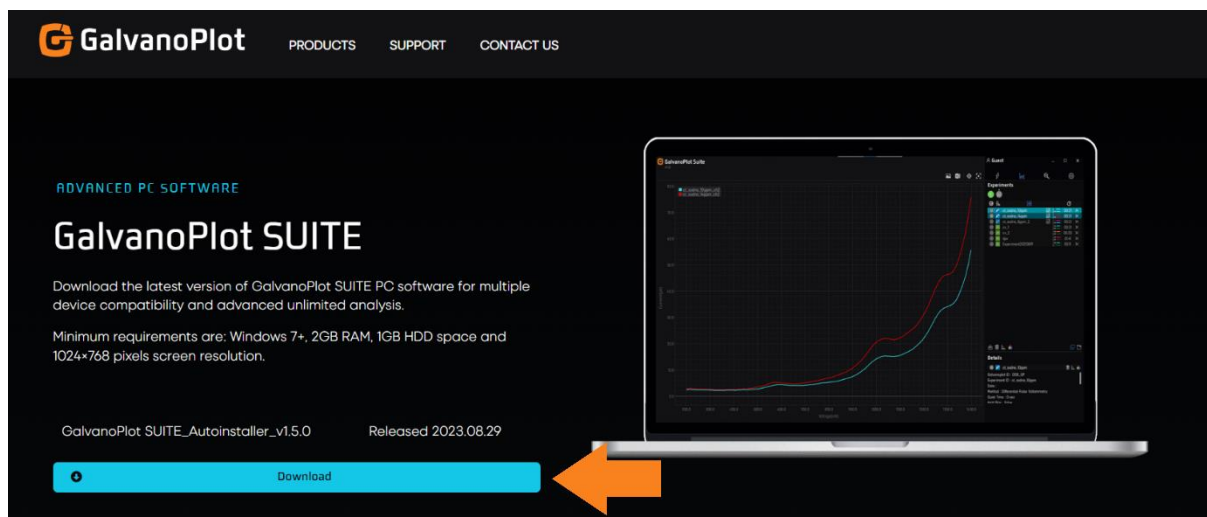


Figure 1: The GalvanoPlot SUITE installer

Following the file extraction process, an installation wizard will guide you through the GalvanoPlot SUITE software setup process.

Registration

Key Usage in GalvanoPlot Devices

Every GalvanoPlot device comes with a limited number of trial experiments out of the box. Without registering it to GalvanoPlot Suite software, the device becomes disabled after exhausting all trials. To enable the device or save remaining trials, registration is required. Note that for a new PC, the registration key must be submitted again.

- First, connect your GalvanoPlot to PC.
- Then, navigate to settings as shown as below.

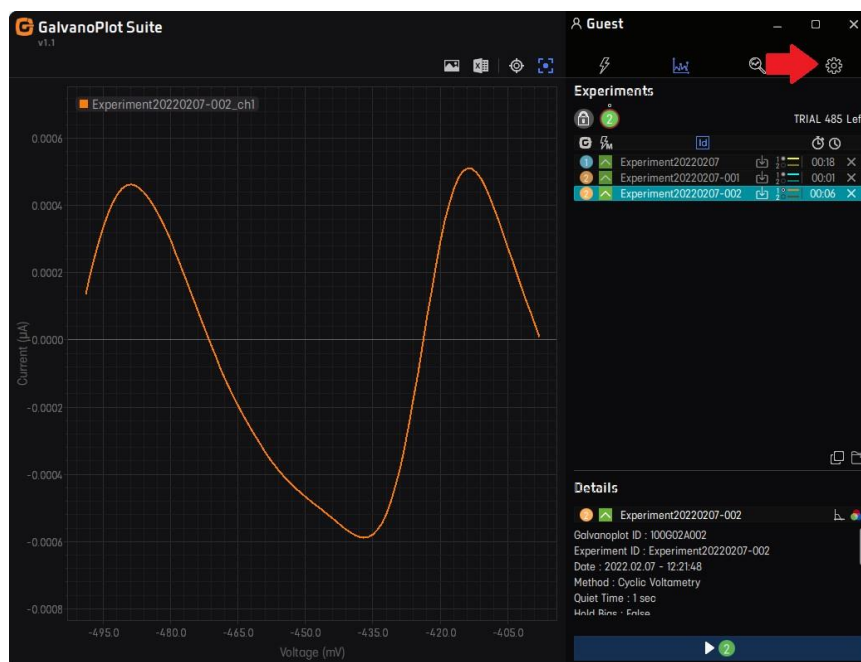


Figure 2: Step 1, Navigate to Settings

- Find your device in the list.

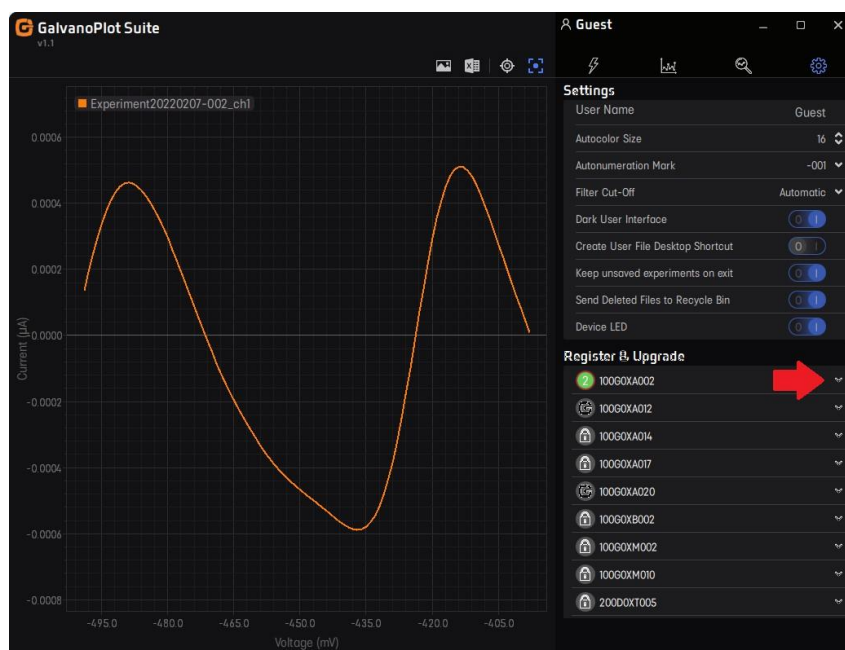


Figure 3: Step 2, Find device in the list.

- To register a device to GalvanoPlot SUITE.
- Fetch the key or enter it manually, then click “Submit”.

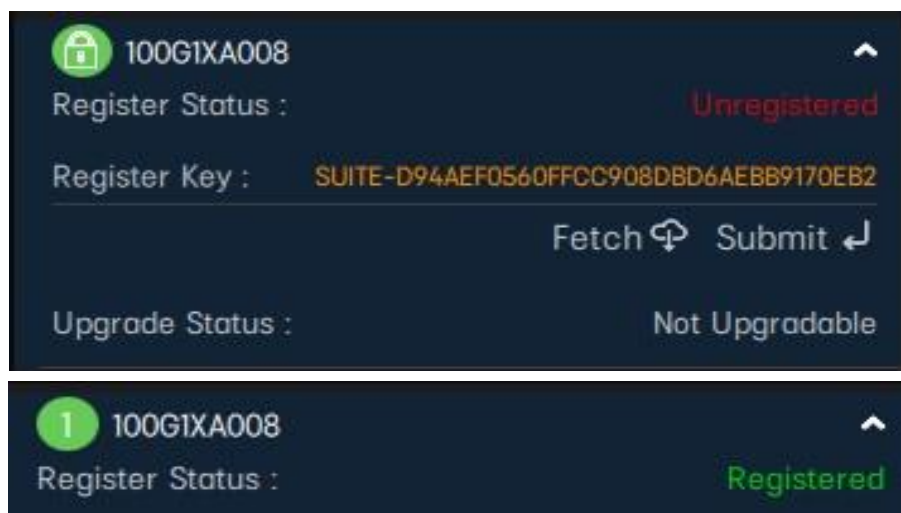


Figure 4: Step 3, Fetch or enter it manually the key.

- To add more trials to a device
- Enter the key manually, then click “Submit”.

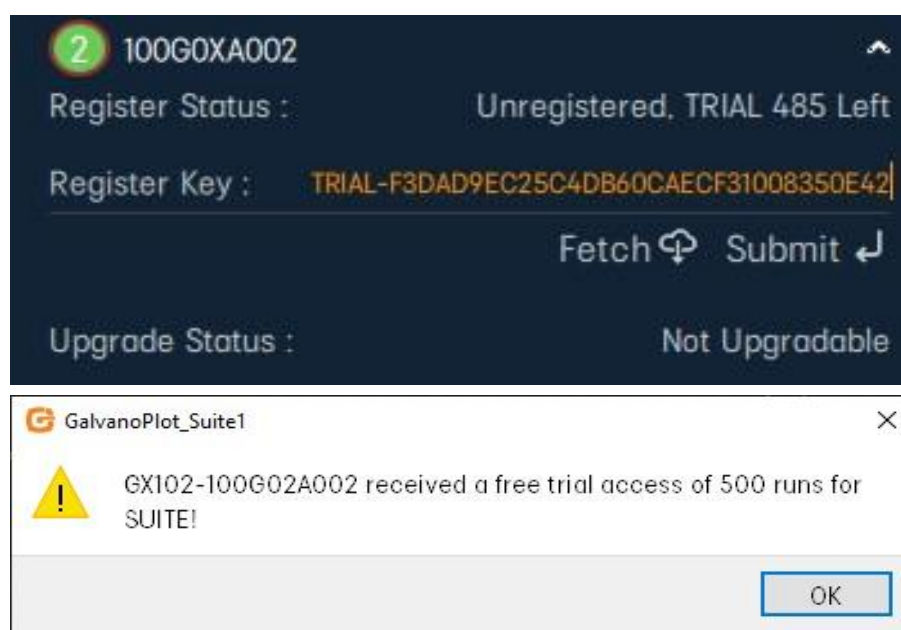


Figure 5: Also, Add more trials to a device.

All GalvanoPlot equipment needs to be registered in the Galvanoplot SUITE Software. There is no limitation in the number of PCs that any equipment will be registered. Registering is one time and only necessary when you first installed a new version of GalvanoPlot Suite.

If you do not have a *Register Key*, please contact us: support@galvanoplot.com

Operating GalvanoPlot

Power on GalvanoPlot device. Device LED will blink. Open GalvanoPlot SUITE Software. Connection will be automatic and Solid Green LED indicates a successful connection. GalvanoPlot's status of device LED shown on Table 1.



Table 1: LED Indicator Lights explanation.

Status LED	Indication
 Solid Black	Unpowered
 Blinking Red	Unconnected
 Solid Amber	Measuring
 Solid Green	Connected

Basics of Software

Intro Screen

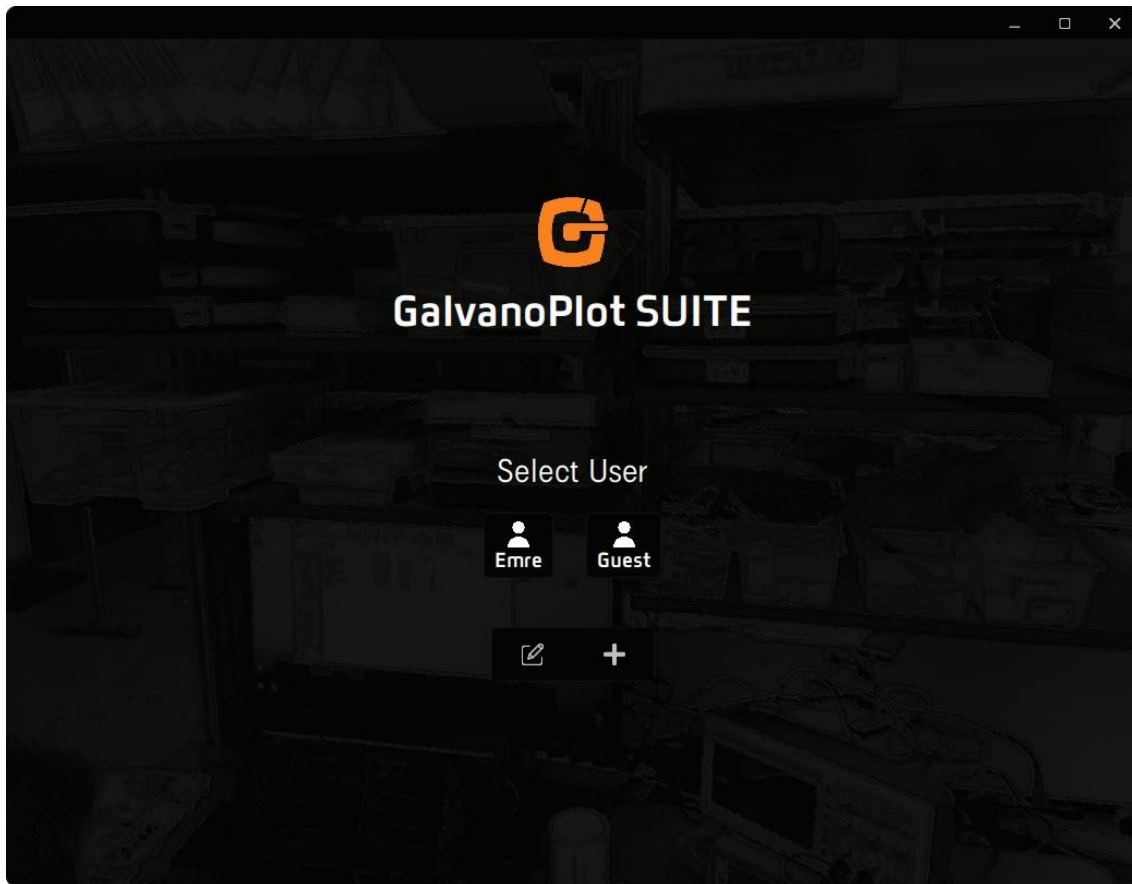


Figure 6: Intro Screen of the GalvanoPlot SUITE

- Guest : A guest user comes by default.
- Add User (+) : You can create a new user.
- Edit User : You can change the name or delete a user.

Note! Every user has their corresponding session history, and it automatically loads when logged in.

Setup Menu

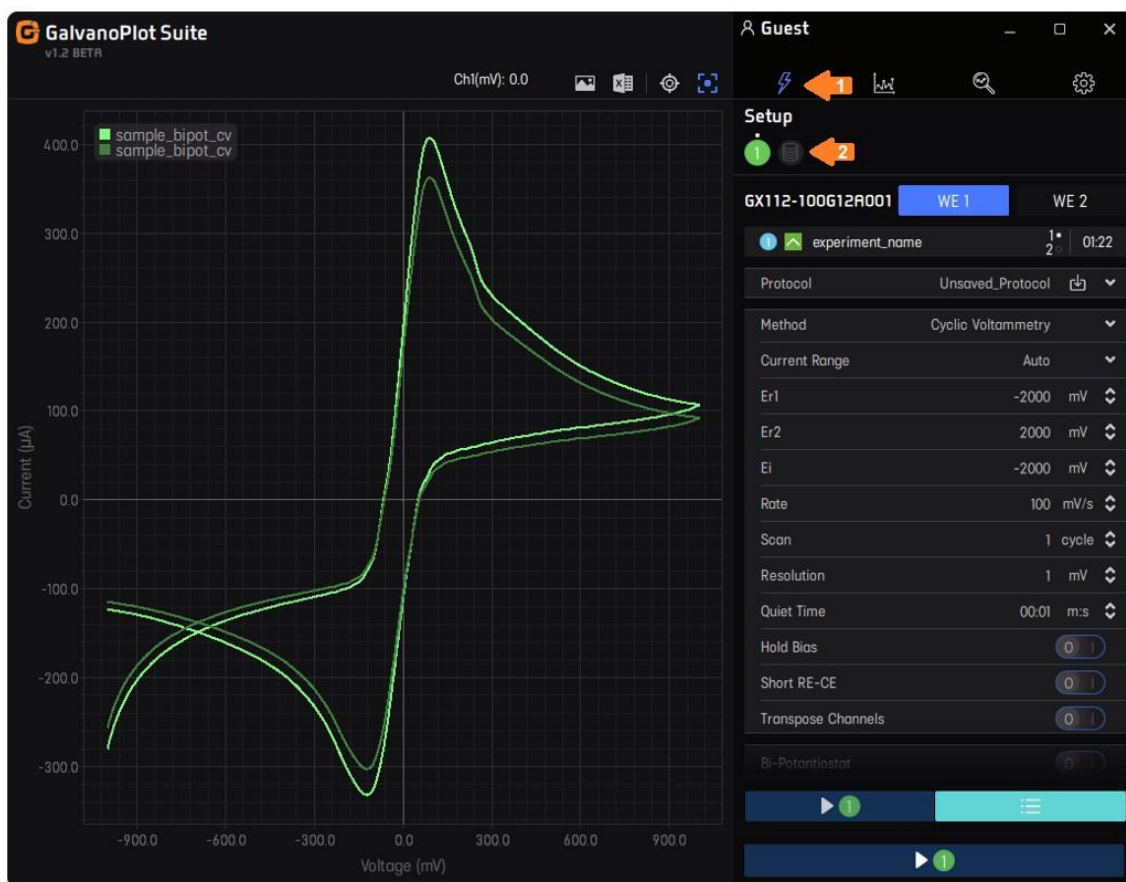


Figure 7: Setup Menu of the GalvanoPlot SUITE

Setup Menu (1) : You can set the electrochemical methods and protocol parameters for the active GalvanoPlot device.

Devices (2) : GalvanoPlot SUITE can control multiple GalvanoPlot equipments at the same time. All connected and disconnected GalvanoPlot devices in the session are listed in this group. A coloured circle with a number represents a connected device and the circle with dot over it is the active one.

- Colour of the circle shows the status of the corresponding equipment.
Green: Connected and ready.
Red: Connected but inactive by user.
Gray: Previously in the session but now Disconnected. Also, a Gray HDD icon appears as a circle, if an experiment that is saved to HDD and not anymore related with a specific device is present in the Experiments List.
- Select multiple GalvanoPlot devices by left clicking when CTRL button pressed. If multiple devices are selected, all devices are set to the same experiment parameters.

GalvanoPlot ID : Serial Number of the selected equipment is displayed.

WE1/WE2 : If the equipment supports bi-potentiostat mode, buttons to toggle on and off each channel will appear. If a channel is active, it is highlighted in blue.

Protocol : Current parameters can be saved as a protocol to recall later.

Parameters : Each method has a variety of parameters that can be adjusted. If method is changed, parameters can be lost. It is recommended to save the parameters in a Protocol File (.gpp). Double click on the name to rename.

- A Method contains all measurements parameters like which Technique (Linear Sweep Voltammetry, Square Wave Voltammetry, Electrochemical Impedance Spectroscopy, etc.) is used and information about post-measurement actions like data smoothing and peak searching. All these parameters can be edited in the Method Editor which is found at the right-hand side of the GalvanoPlot SUITE window.
- The following electrochemical techniques are supported by the GalvanoPlot devices.

Linear Sweep Voltammetry	LSV
Cyclic Voltammetry	CV
Square Wave Voltammetry	SWV
Differential Pulse Voltammetry	DPV
Normal Pulse Voltammetry	NPV
Chronoamperometry	CA
Amperometry	A
Electrochemical Impedance Spectroscopy	EIS
Open Circuit Potential	OCP

Run : The bottom buttons with play icons are experiment Run buttons. The wider button can start all connected devices at once. The upper small button starts only the active GalvanoPlot device.

Spool : The menu right of it activates the Spool which can be perform sequential automatic experiment starts.

Wait : Click on the icon to swap between *Wait* and *Interval* options to place delay between sequential experiments. The icon highlighted in orange is clicked to switch between 'Wait' and 'Interval' for adjusting the experiments.

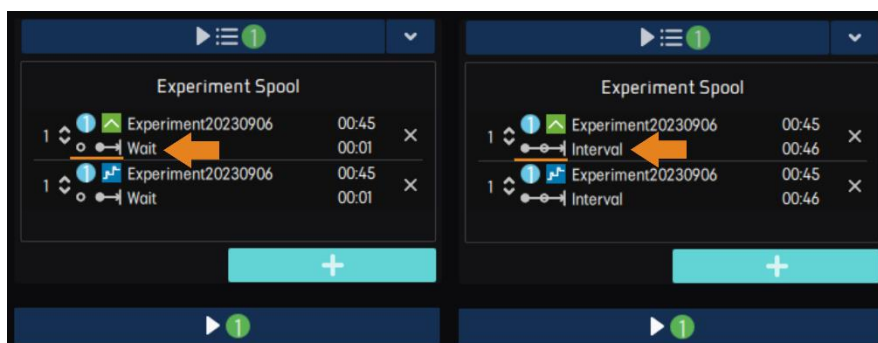


Figure 8: Wait and Interval tools.

Experiment Menu

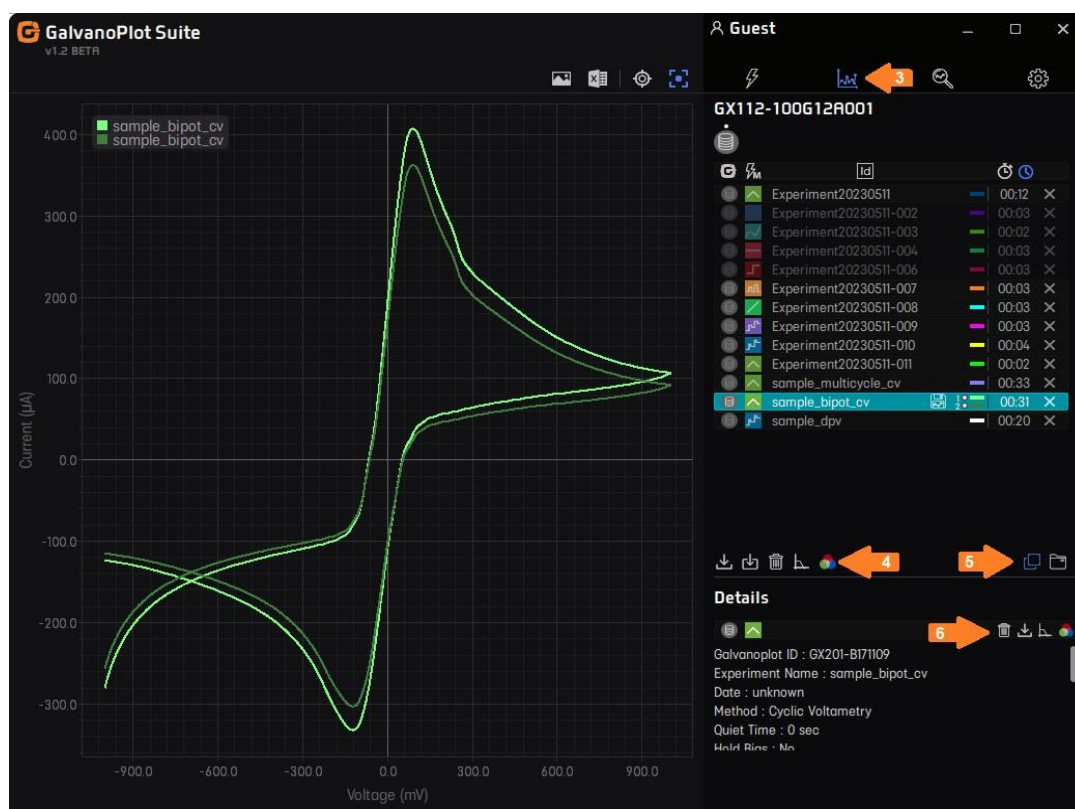


Figure 9: Experiment Tab of the GalvanoPlot SUITE

Experiments Menu (3) : All completed experiments in the session are listed here, as well the active running experiments that are shown as the top rows. When an active experiment is finished, it moves to the list for completed ones.

- The highlighted line shows active experiment, and it can be only single one at a time. Activation is used for visualizing the details and make *Analysis* on it.

Tools for Multiple Selected Experiments (4): This group is for multiple selections. *Save*, *Save As*, *Delete*, *Filter*, *Colour* buttons for corresponding functions can be performed here. Filter is for low-pass digital filter cut-off settings (also to turn off filter for plotting the Raw Data).

Note! To change the default settings for filter cut-off, please go to *Settings Menu*.

Overlay (5) : Overlays multiple experiments. This button also turns on and off the *Multiple Selection Mode*.

Load : The second button Loads a previously saved experiment file(.gpe) to session.

Details Form : The details of the active experiment are shown in the bottom right, in details form.

Tools for Active Experiment (6) : This group of button differs from the group buttons that apply to the active experiment only.

Experiments List

All available experiment data shows on Experiment List which is on the right-hand side of the GalvanoPlot SUITE.

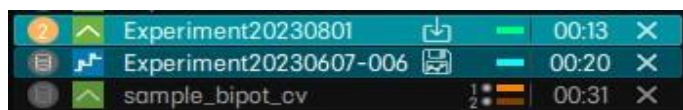


Figure 10: Experiment List of the GalvanoPlot SUITE

Experiment Bars: The Experiments represented as individual Experiment Bars to navigate in the experiment list. From Left to Right, the icons represent:

GalvanoPlot Circle: A coloured circle shows that the experiment belongs to the active session and not yet saved to HDD. The number in circle shows in which equipment the experiment was performed in. Saved experiments are represented with grey HDD icon.

Method Icon : Each type of electrochemical method has a unique colour and icon.

Experiment Name: Shows the experiment name. Automatically rennumbers the name, depending on the Auto-number Setting in Settings menu. Double clickable to rename the Experiment name.

Save : Click to save the Save icon. Icon disappears when saved. If the analysis method of the experiment is modified, a *Save Analysis* button appears in the same place.

Channels : If the experiment was performed in bi-potentiostat mode, each channel data is shown as 1 and 2. toggle on and off the show and hide the corresponding channel data.

Experiment Duration: Shows the duration of the experiment in minutes: seconds.

Close : Removes the experiment from the list. No prompt is asked to remove. It only hides it from the list, but it does not remove the file from the session directory if it is already saved. Unsaved file data can be recovered from the temp file directory or from the recycle bin (if this option is not disabled by the user in the *Setting Menu*).

- When *Overlay* is active, the bars belonging to the plotted experiments will be highlighted in blue. But the bar for the active experiment will be brighter among all plotted ones to be easily differentiated.

Right-Click : By right-clicking the mouse on the right-hand side of the GalvanoPlot SUITE, you can use *Select All*, *UnSelect All*, *Close All*, *Close All Unsaved* tools.

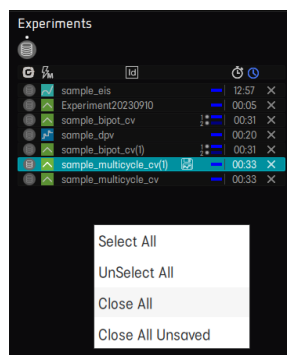


Figure 11: Right-click on the experiments tab.

Plot Chart

The main window of the GalvanoPlot SUITE shows a *Plot Chart* on the left-hand side.

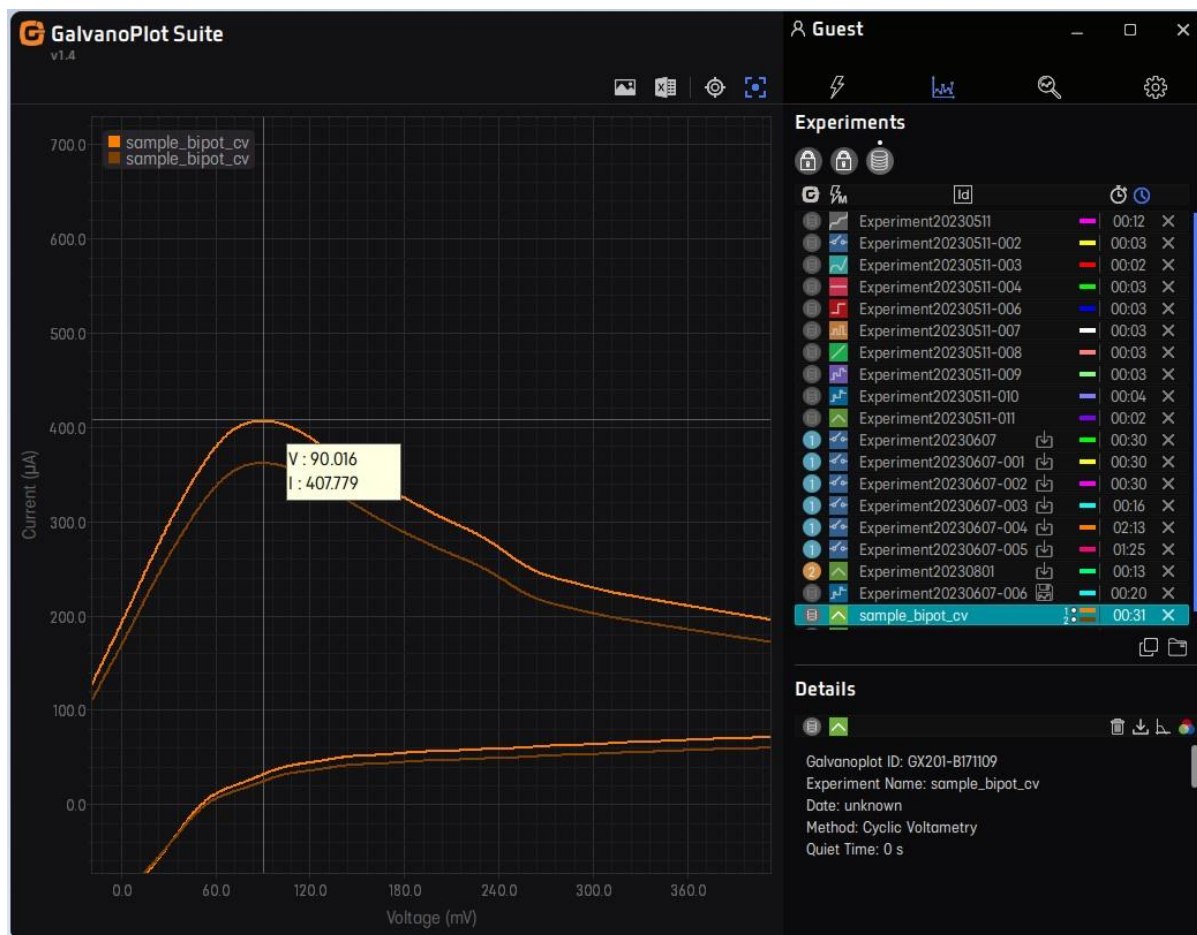


Figure 12: Plot Chart of the GalvanoPlot SUITE

- Drag** : To drag the chart, left click and drag.
- Scale** : To scale the chart on two axes, use mouse scroll while the cursor on it.
- Scale Single Axis:** To scale only one axis independently, use mouse scroll while the cursor is on the axis legend.
- Show Value** : To see any coordinate, press and hold CTRL key while moving cursor.
- Activate** : To set Active experiment, left click on a graph on chart. This action is the same with clicking on the experiment bar.

Chart Buttons

You can find these buttons on the right top side of the chart.



Figure 13: Chart Buttons

Export As Image:	Also opens a menu to customize exported image.
Export As Spreadsheet:	Saves selected all experiments to single .xlsx file.
Centre :	Centres the chart without scaling it.
Fit :	Scales the chart to fit in the screen. Double click to turn on and off the autoscale.

Analysis Menu

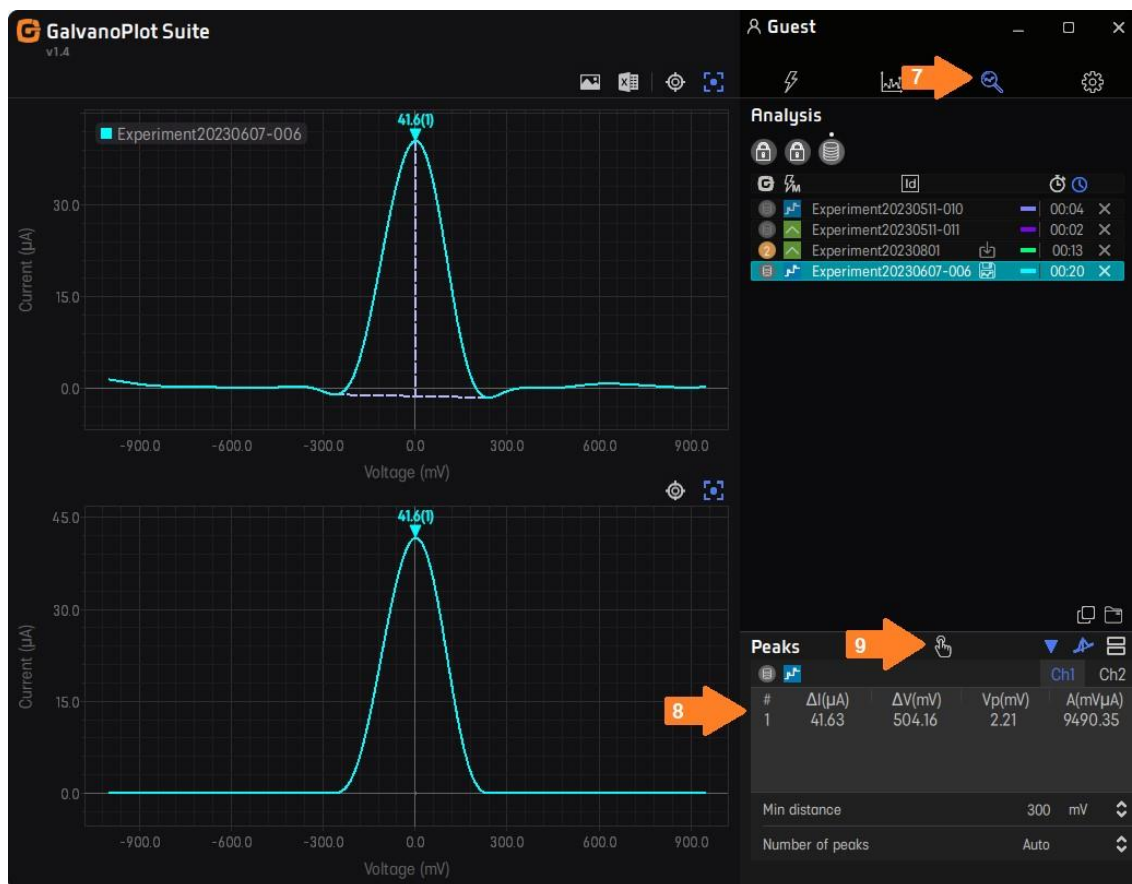
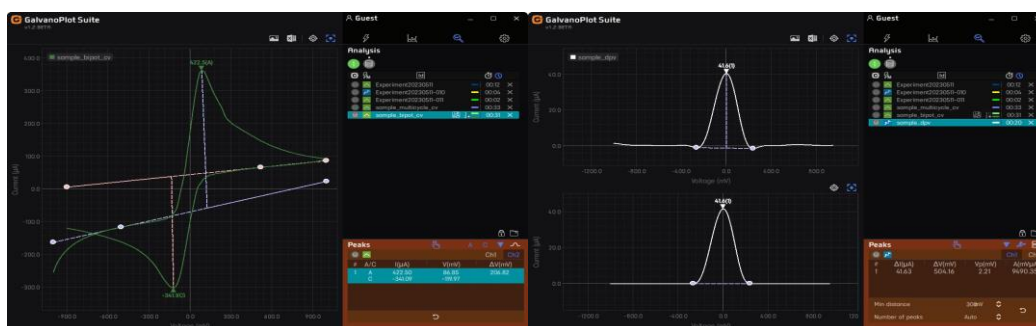


Figure 14: Analysis Menu of the GalvanoPlot SUITE

Analysis Menu (3) : The analysis screen appears when pressed on the button. In v1.4, Only DPV and CV experiments are supported for analysis. Please check web page of [GalvanoPlot SUITE web page](#) for updates.

There are two modes for analysis: *Automatic Mode* and *Manual Mode*.

Automatic Mode: When an experiment completed or uploaded from file, the software applies automatic analysis to find peaks in differential pulse voltammetry and tangents in cyclic voltammetry. You can see the peak measurements in the bottom of the tab (8).



Manual Mode: To enable the Manual Mode which you can manually place Tangents and Baselines. To active click the manual analysis button (9).

Setting Menu



Figure 15: Settings Menu of the GalvanoPlot SUITE

Settings : The default settings can be changed here.

Auto-colour Size: This parameter is for defining the number of colours in the auto-colouring. If you are repeating the same number of experiments in your work, it may be useful to limit the colour to that number only to colour the same type of experiment in the repeat sequence with the same colour all the time.

Auto-numeration Mark : It is an hyphen by default. If you want to use hyphen in your experiment name, change it here to something else to prevent the auto-numeration to modify your experiment's name.

Filter Cut-Off : Default filter setting is applied to all prospective experiments. Filter values for all completed or active experiments can be adjusted in the Experiments Menu.

DARK USER INTERFACE: Selects between Dark and Light colours.

Device LED : Turns on and off the Status LED on the equipment. May be preferred for energy saving or experiments affected by the light.

support@galvanoplot.com

If you have any questions or recommendations
with the GalvanoPlot products, please contact us.



Solar Biyoteknoloji, LTD.
Alsancak m. 1476/1 s. 9/1 Konak, İzmir
35220 Türkiye