



Redefining Electrochemical Measurement

## ***Gamry Electrochemistry Toolkit™***

### ***Just what is the Gamry Electrochemistry Toolkit?***

The Gamry Electrochemistry Toolkit™ offers a comprehensive set of tools for controlling your Gamry Potentiostat. These tools make it possible to create user defined experiments, to integrate a Gamry Potentiostat in OEM applications, or to design and implement a custom user interface. The possibilities are only limited by your imagination!

### ***Why do YOU need it?***

If you are a researcher trying to create a custom experiment, you need it.

If you are an OEM looking to integrate a potentiostat into your system using your own software for control, you need it.

If you are looking to define a custom interface for your potentiostat in a quality control environment, where a simple, minimal user interface is important, you need it.

If you are looking for the most flexible system for controlling a potentiostat, one that allows complete customization, you need it.

### ***How are the tools constructed?***

The tools in the Gamry Electrochemistry Toolkit are made available as a set of Component Object Model (COM) interfaces. These interfaces are designed to offer easy integration of a Gamry Potentiostat into a variety of different software platforms.

### ***What is an Interface?***

An interface is simply a way in which a connection can be established between two different objects. In this case, one object is your Gamry Potentiostat. The other object is the software tool with which you wish to create your experiment or application. Languages like LabVIEW, C++, and Visual Basic can all make use of these interfaces.

### ***Available Interfaces and Packages***

The following is a list of all the available interfaces. The color coding depicts which interfaces are included in the specific packages.

#### *Device Management*

● ■ ◆ IGAMRYDEVICELIST

#### *Hardware Control*

● ■ ◆ IGAMRYPSTAT

#### *Data Acquisition*

● ■ ◆ IGAMRYDTAQIV

● ■ ◆ IGAMRYDTAQOCV

■ IGAMRYDTAQUNIV

■ IGAMRYDTAQCPV

■ IGAMRYDTAQCIIV

■ IGAMRYDTAQGALV

■ IGAMRYDTAQCHRONO

■ IGAMRYDTAQIVT

■ IGAMRYDTAQPV

■ IGAMRYDTAQRCV

■ IGAMRYDTAQSQWV

◆ IGAMRYDTAQEIS

◆ IGAMRYREADZ

#### *Signal Generation*

● ■ ◆ IGAMRYSIGNALARRAY

■ ◆ IGAMRYSIGNALCONST

■ IGAMRYSIGNALSTEP

■ IGAMRYSIGNALRAMP

■ IGAMRYSIGNALDSTEP

■ IGAMRYSIGNALMSTEP

■ IGAMRYSIGNALPV

■ IGAMRYSIGNALRUPDN

■ IGAMRYSIGNALUPDN

■ IGAMRYSIGNALSQWV

#### *Available Packages*

● eChemBasic ■ eChemDC ◆ echemAC

### ***How can you use an Interface?***

Let's take the IGAMRYPSTAT interface as an example, and we'll use Visual Basic for clarity. Say you want to toggle the cell switch on your potentiostat. First, you will need to instantiate a potentiostat object.

```
Dim myPstat as New IGamryPstat
```

Now we'll need to initialize our object by telling it which potentiostat to use. In this case we are using a Reference 600 with serial number 007.

```
myPstat.Init ("REF600-007")
```

Now we need to take control of this potentiostat, or as we like to say, open it:

```
myPstat.Open
```

Now that we have opened this potentiostat, we can toggle the cell switch:

```
myPstat.SetCell (CellOn)
```

and again...

```
myPstat.SetCell (CellOff)
```

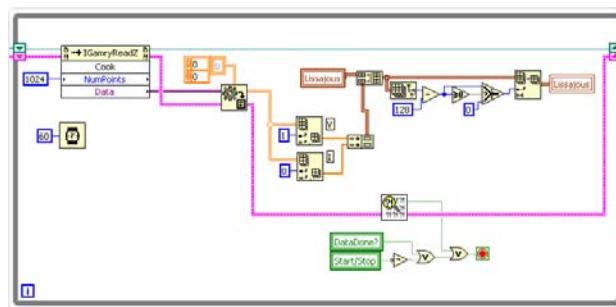
Now we're done, let's close the potentiostat object:

```
myPstat.Close
```

This simple example illustrates how you can control the fundamental aspects of your instrument.

### **Examples and Documentation**

The Gamry Electrochemistry Toolkit comes with running examples for LabVIEW, Visual Basic for Applications utilizing Microsoft Excel, and C++. These examples, combined with the reference manual, in portable document format (PDF) provide a firm ground on which to begin.



**Sample data acquisition loop in LabView.** LabView is commonly used for controlling systems which have multiple types instruments which need to work in unison.

### **System Information**

The Gamry Electrochemistry Toolkit requires a Reference 600, PCI4™, or Series G™ Gamry Potentiostat or FC350 Fuel Cell Monitor to conduct experiments. Microsoft Windows® 2000, XP or higher is required as well as a suitable software platform such as LabVIEW or Visual Basic.

Examples provided in the Toolkit were created using LabVIEW 7.1, Microsoft Office 2003, and Visual Studio 6.0.

Gamry Instruments can supply complete systems including the Potentiostat and software installed in a desktop or portable computer. Custom computer configurations, software, training, and installation are available by special order. Contact us for further details on these systems.

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