

Cyclic Charge-Discharge for Series G/PCI4

Introduction

This customized experiment package and the PHE200 Physical Electrochemistry software license are required to perform cyclic charge-discharge experiments on a Series G/PCI4 potentiostat. The experiment carries out a constant current charge to a set voltage, a constant voltage for voltage finishing, and a constant current discharge to a set voltage. The experiment repeats for a user specified number of cycles. The data file for each cycle can be opened in Echem Analyst.

Installation

Manual installation steps are required. In Windows XP use the root path "C:\Documents and Settings\All users\Application Data\Gamry Instruments\..." In Windows Vista/7 use the root path "C:\ProgramData\Gamry Instruments\..."

1. Copy the following files into your **Framework Scripts** folder (...Framework\Scripts\):
"Auto-Battery2.exp"
"Battery Utilities.exp"
"Charge-Discharge with Voltage Finish.exp"
2. Copy the following file into your **Echem Analyst Databases** folder (...Echem Analyst\Databases\):
"CustomAnalysisScripts.mdb"
3. Copy the following file into your **Echem Analyst Scripts** folder (...Echem Analyst\Scripts\):
"Battery2.GScript"
4. Copy the following file into your **My Gamry Data** folder:
"Sample Supercapacitor Charge-Discharge.dta"

To execute the script in Framework, select **Experiment / Named Script...** and browse for "Charge-Discharge with Voltage Finish.exp".

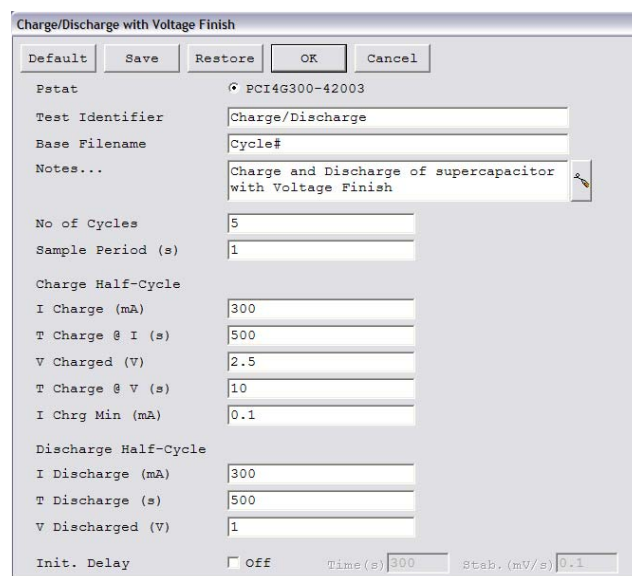


Figure 1: Setup screen for cyclic charge-discharge experiment.

Setup Parameters Explained

I Charge: charging current
T Charge: maximum time for charge step
V Charge: voltage to charge to
T Charge: time to hold voltage for finish
I Chrg Min: end voltage finish at this current level
I Discharge: discharging current
T Discharge: maximum time for discharge step
V Discharged: voltage to discharge to

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