Software Features

Screenshots: Click to view screenshot gallery

User Interface

- **Unicode tabbed-document application:** compatible with 32- and 64-bit Windows
- **monolithic, streamlined architecture:** minimal installation footprint and portable design bypasses the Windows registry
- **multiple instances:** control multiple instruments by simply duplicating the program
- **customizable toolbar:** quick access to your most frequently used commands
- **complete, intuitive environment:** run experiments, analyze data, and generate plots all in the same window
- **status bar:** technique, file status, and command prompt
- **WYSIWYG graphics**
- **comprehensive context-sensitive help**

File Management

- **Unicode support:** international file and folder names
- **open data files:** read directly from binary or plain-text files
- **save data file:** binary, plain-text formats for exporting data (e.g., to spreadsheet)
- **list data file**
- **convert to text files:** for exporting multiple data files
- **text file format**
- **print present data**
- **print multiple data files**
- **print setup**

Experimental Setup

- **technique:** a large repertoire of electrochemical techniques
- **experimental parameters:** extremely wide dynamic range
- **system setup:** line frequency, potential/current axis polarities
- **hardware test:** digital and analog circuitry diagnostic test

Instrument Control

- **run experiment:** real time data display in most cases
- **pause/resume during run**
- **stop running experiment**
- **reverse CV scan direction during run**

Graphical Display

- **present data plot**
- **3D plotting (NEW):** interactive visualization of impedance and SECM data (select models); Laplacian smoothing, Delaunay triangulation, stereoscopic 3D anaglyph imaging
- **overlay plots:** several sets of data overlaid for comparison
- **add data to overlay:** adding data files to overlay plot
- **parallel plots:** several sets of data plotted side by side
- **add data to parallel:** adding data files to parallel plot
- **zoom in/out:** visually selected zoom area
- **manual results:** visually selected baseline
- **peak definition:** shape, width, and report options
- **Special Plots:** x-y, ip-v, ip-v1/2, Ep-log v, semilog plots, linear polarization resistance plot
- **graph options:** video or printer options, axis, parameters, baseline, results, grids, axis inversion, axis freeze, axis titles, data sets, XY scales, current density option, reference electrode, header, and notes
- **color and legend:** background, axis, grid, curves, legend size, thickness, and display intervals
- **font:** font, style, size and color for axis labels, axis titles, header, parameters, and results
- **copy to clipboard:** for pasting the data plot to word processors

Data Processing

- **smoothing:** 5-49 point least square and Fourier transform
- **derivatives:** 1st - 5th order, 5-49 point least square
- **integration**
- **convolution:** semi-derivative and semi-integral
- **interpolation:** 2x - 64x data interpolation
- **baseline correction:** visually selected baseline, slope and dc level compensation
- **baseline fitting and subtraction:** selectable fitting function, polynomial order and potential range for best fitting and

CV Simulation and Fitting

- **fast implicit finite difference algorithm**
- **reaction mechanisms:** 10 predefined mechanisms; in select models, any combination involving electron transfer, first- and second-order chemical reactions
- **system:** diffusive or adsorptive
- **maximum equations:** 12
- **maximum species:** 9
- **simulation parameters:** standard redox potentials, rate of electron transfer, transfer coefficient, concentration, diffusion coefficient, forward and reverse chemical reaction rate constants, temperature, electrode area, and experimental parameters
- **simultaneous display of voltammogram and concentration profiles**
- **automatic detection and determination of over-determined equilibrium constants**
- **dimensionless current**
- **equilibrium data**

AC Impedance Simulation and Fitting

- **visually equivalent circuit input**
- **automatic equivalent circuit parameters fitting**

View

- **data information:** date, time, filename, data source, instrument model, data processing performed, header and notes
- **data listing:** data information and numerical data array
- **equations:** convenient compilationi of general and technique-specific equations
- **SECM probe status:** probe position and current display
- **clock**
- **toolbar**
- **status bar**

Help

- **comprehensive context-sensitive HTML help**
- **on-the-fly switching between HTML help and legacy WinHelp**

- **repetitive runs:** automatic data save, signal averaging, delay or prompt between runs, up to 999 runs
- **run status:** stir, purge, iR compensation, smooth after run, RDE and SMDE control status
- **macro commands:** edit, save, read, and execute a series of commands
- **open circuit potential measurement**
- **iR compensation:** automatic and manual compensation, solution resistance, double layer capacitance and stability test
- **analog filter setting:** automatic or manual setting of potential, i/V converter, and signal filters
- **cell control:** purge, stir, cell on, SMDE drop collection, and pre-run drop knock
- **step functions:** initial and two step potentials, duration of steps and number of steps, particularly useful for electrode treatment
- **working electrode conditioning before running experiment:** programmable 3 steps
- **rotating disk electrode:** rotation speed, on/off control during deposition, quiescent time, run, and between runs
- **stripping mode:** enable/disable, deposition potential and time, stir and purge conditions

- baseline subtraction; particularly useful for trace analysis
- **data point removal**
- **data point modifying:** visual data point modification
- **background subtraction:** difference of two sets of data
- **signal averaging**
- **mathematical operations:** both X and Y data array
- **Fourier spectrum**

Analysis

- **calibration curve:** calculation and plot
- **standard addition:** calculation and plot
- **data file report:** analytical report from existing data files
- **time dependence report**
- **corrosion rate calculation**

- **using help**
- **about the application**

System requirements

- **operating system:** Windows 98 / NT / Me / 2000 / XP / Vista / 7 / 8
- **USB port or serial communication port**