BCycle Release Notes

BCycle 3.2n – Oct 2022

- OLE: Changed to V11 complier.

- OLE: Improved the handling of a HID-USB 580 disconnect and reconnect.

- After forcing BCycle to close in Task Manager, restarting the software does not restart the previous experiment list. Corrected

BCycle 3.2m – Sept 2022

- When an over current alarm is reported, alter the message so that the alarm value matches the current range that is being used

- Opening BCycle by double-clicking on the .bpro file may crash the program. Corrected.

BCycle 3.2- May 2022

- Added the ini file parameter [Program]CloseProjectAfterMeasurement=1 When a project is measured and the experiment list finishes normally, the BCycle project window will close.

- The Aux T (temperature) listed an incorrect unit in Japanese translation. Changed to C (celsius).

- OLE window can have the wrong size if the screen is scaled at 150%. Corrected;

BCycle 3.2j – February 2022

Alarm messages for locked files or folders have been modified so that the problem is detected and error messages are displayed immediately after starting the experiment.

1. A copy of the active setup file is saved to the data folder before a test starts. If this fails, a message is displayed and the test is not started.

2. It will now attempt to save the file header immediately when starting a test and display a message if it fails. Previous versions would not create the file until data points were measured, which would delay the error message when data is recorded slowly.

3. If a data saving failure occurs after the file has been successfully created, a message will be displayed after 10 seconds of failure or if 100 points have been collected in the buffer.

BCycle 3.2i:

The Alarm message from locked files can be triggered when using Separate Data Files within a loop. Corrected

Change C_Rate text from mA/g to mAh/gBCycle 3.2h

Added Alarm Message if a data file cannot be saved. Alarms when the data buffer reaches 100 points. Save files to a new file name

BCycle 3.2g:

If an experiment list contains multiple levels of loops, a centered dot character was use as a spacer. This character is not available and would be displayed as a ?. Changed to a different 'dot' character that is correctly displayed.

If a Loop Begin and Loop End are selected, but there are no selected steps between Begin and End (an empty loop), the experiment may crash when started. Corrected

Added Restart screens to ask if crashed projects should be restarted

Changed FRA Stop mode to Immediate

Added Alarm Log file. Adds a line each time a channel stops with an alarm or error.

BCycle 3.2f:

Change CC-CV-CC method so that it can continuously oscillate between CC and CV

In Setup Cell, if a S. Area or Weight is in edit mode, and the remove button is clicked, an error occurs. Corrected by removing focus before removing the line.

Termination settings in OCP step are not the correct polarity if Reversed Polarity setting is used.

Add minimum duration before termination parameters are active.

If an experiment fails to start, BCycle can get out of sync with the ole and be stuck in "Standby". The "Stop" function does not operate because the experiment never started. The channel stop function has been modified to force it to fully stop from Standby condition.

BCycle 3.2e:

- OLE: Further modified USB-HID enumeration to ignore a second error. Also only items with a vid_ffff value are now interrogated.

- Added ini file parameter [Program]RunExternalMaxHours=24. Default is 24 hours. The value can be changed to alter the maximum time limit for a RunExternal or RunExternal[Costom] step.

- Added ini file parameter to scale Hioki voltage values. For example [Unit1] Channel1HiokiV1Scale=5

- OLE and BCycle: Added support for alarms using the Hioki signals.

- OLE: If FRA is not fitted in a 580, the ole displays 880 Read Error messages. These are now hidden.

- If a forced close/restart is performed, and the instrument hardware has been changed of moved to different computer, a bugreport is created during the restart. Corrected.

- OLE: During Connect function, clear the usb buffer to remove any partial transfers left from an incorrect shutdown

BCycle 3.2d:

- BCycle keeps a list of what channels have reached the External step in order to determine when all channels have reached the step.

- If the channels are manually stopped while they are in the 'wait for external program to exit' condition, the channels were not removed from the list and this caused a problem the next time the External step was used. It now purges channels from the list when when they are manually stopped to correct this problem

- When closing BCycle, there may be a ~5 second delay while the OLE closes. Corrected.

- If Run External (Custom) is the fist step in a list, and "Run on Last Channel" is selected, it is not performed correctly. A 5 second OC step is now added as the first step to prevent this occurrence.

- If an experiment includes files both inside a loop with 'Save in Separate Files for each cycle' and outside of a loop, multiple files may be created by the 'outside to loop' steps. BView cannot read these extra files. BCycle changed so all outside of loop steps are saved to the default .bdat file.

- OLE: A change to Windows may cause the OLE to crash when it is interrogating HID devices for vendor and product names in order to find the 580. Corrected.

BCycle 3.2c:

- Hide the 'Limit Current in CV Mode' option unless [LimitI] Show=1 value is listed in the BCycle.ini file.

- The Graph tabs do not correctly show "E+I vs Time" caption. Corrected.

- Add duration limit for the CV part of the CCCV step.

- If multiple projects are open that each have the same channels selected, an inactive project may be displayed in the Status window instead of the active one. Corrected.

- A single user unique error that appears to have a 'new device' event without the device being removed, causing ID, VER and Serial Numbers to be processed as data. In now guards against this.

- In the Constant Current step, the "Absolute, Init" current setting requires the "Use Voltage Limit" function. A warning message is now displayed to force the Voltage Limit to be turned on.

- If constant Current or Constant voltage steps are used to create a cycle, the .bcyc data was not correct. Fixed.

- A customer has repeated 'host comms error'. Added new logging information to display the last 10 comms before the error occurs.

- Change order of experiment choices in the selection list. Charge and Discharge steps now come first.

- Add support for termination using the Hioki Aux Voltage and Temperature signals.

- Added support for a second Hioki Aux Voltage signal for each main channel.

- Organized string constants for easier language translation.

BCycle 3.2b:

- Display live Hioki temperature values on main screen.

- Display live Capacity_Total value in Status window. The capacity value resets to zero when the polarity changes.

- Graph of Capacity now displays Capacity_Total.

- The Q_Total termination parameter has an extra option of C_Ratio (Measured). This option is not functional and has now been removed. This option also existed in the Repeat Loop Termination settings and has been removed.

- At the end of a step, the last data point may be recorded twice. Corrected.

- If the Data Acquisition period is longer than the step Duration, no data will be saved from the step. This is changed so that at least one data point will be recorded for each step.

- When data is read from the 580, a packet error message is displayed if <254 bytes are received. The same message is now displayed if >254 bytes are received.

BCycle 3.2a

- Display live Hioki temperature values on main screen.

- Display live Capacity_Total value in Status window. The capacity value resets to zero when the polarity changes.

- Graph of Capacity now displays Capacity_Total.

- The Q_Total termination parameter has an extra option of C_Ratio (Measured). This option is not functional and has now been removed. This option also existed in the Repeat Loop Termination settings and has been removed.

- At the end of a step, the last data point may be recorded twice. Corrected.

- If the Data Acquisition period is longer than the step Duration, no data will be saved from the step. This is changed so that at least one data point will be recorded for each step.

- OLE: When data is read from the 580, a packet error message is displayed if <254 bytes are received. The same message is now displayed if >254 bytes are received.

BCycle 3.1d:

- OLE: If the Loop Termination step is modified while running, it returns an invalid step number. This would prevent BCycle from being able to modify the step a second time. Corrected.

- If EStop is active when starting or stopping a run, the alarm could activate before the full start or stop procedure is completed, preventing it from being completed. Corrected

- Change default voltage alarm values to 3, 3.5 V. This forces the user to make a decision of the alarm voltages, not just selecting the default.

- The Repeat End step could be moved up to a position before the Repeat Begin step. Corrected

- Corrected a range selection error where an incorrect range (too small for the requested current) may be selected for a CC step.

- If a channel is paused and the Skip to Next is used, the channel will resume (turn back on) and continue to the next experiment step. The OLE did not send a resume message so the GUI program may not know that the channel has resumed. Corrected. If Skip to Next is used when the channel is paused, it now sends Resume (PSTATGetPoint V[5]=9) before sending Step End (V[5]=3) and then Step Begin(V[5]=2) to begin the next step.

- A Comment experiment step has been added to BCycle.

- When Measure | Skip/Pause/Continue/Stop Selected Channels is used, it controls the wrong channel, for example, channel 2 when channel 1 is selected. Corrected.

- Adds support for the 585.

BCycle 3.1c:

- Changed RateV Minimum to -2.5 for 580 instruments.

- For dummy steps, used to continue a previous condition in an External Utility step, do not change the current range. Previously, it could use autoranging for CC which can cause the ranges to oscillate.

- Add support for External (Custom)

BCycle 3.1b

- SAI580 Modification: Loop termination on MinE and Aux MinE did not work correctly. Fixed.

- SAI580 Modification: Corrected the display units for Current and AuxV.

- SAI580 Modification: The SAI580 Icon has been moved from the taskbar to the status/notification area.

- If a setup file from a different computer is loaded and the previously used unit S/N is not attached to the new computer, when starting an experiment list it will warn "The Hardware has changed, use Setup Channels...". If the OCP button is clicked in this same situation, it may crash the program. The same "The Hardware has changed..." will now be displayed when using the OCP button to prevent this crash.

- Added an AuxV column to Status Window.

- When data rates are entered in Seconds/Point, an additional notation is added that lists the equivalent Pts/Sec rate.

- It now requires a data file name before starting an experiment. Previously it was possible ignore the warning message and start a run with no data file.

- When using Experiment | Modify to modify a running experiment list, the pulse and arbitrary waveform settings were not updated. Corrected.

- The default data format has been changed to "Version 3". Version 3 data files contain Cell Area/Weight/CRate values. Version 2 files do not contain these values and BView can only retrieve them if the Archive data file is available. Users can still choose Version 2 and old setup files that were configured with Version 2 will continue to use Version 2.

BCycle 3.0f to 3.1a:

- Add support for modifying Alarm and default Range, Bandwidth values using "Measure | Modify".

- SAI580 Modification: Allow Modify to be used while in a paused state.

- SAI580 Modification: Add RomId to UnitGetConfig response (v[17]).

- In Define Hardware, the first instrument in the list could not be removed. This has been corrected.

- SAI580 Modification: Add function OLEConnectChanged to query if instruments have changed. This allows new instruments to be added after BCycle is running.

- SAI580 Modification: The arbitrary waveform functions are added to a base CC, CV or CP experiment. If the base experiment has a duration of 0, the waveform is applied once. If the base experiment has a non-zero duration, the waveform is repeated for the selected duration. In previous versions, the base experiment duration was ignored, and a single waveform was always used.

- Added Duration to the arbitrary CC and CV experiments.

- Added Pulsed Charging and Discharging.

- Old data from a previous run would be displayed if a new graph tab is created soon after starting a new run. Corrected.

- BCycle would not always remember the screen location and would re-open at the default location instead of the last used location. Corrected.

- SAI580 Modification: For most experiments, the OLE uses an impulse response filter with a decay function similar to a simple RC analog filter. The Pulsed and Arbitrary Waveform experiments now use an average of the value over the data acquisition interval. This allows an on/off pulse to be recorded as the average signal during the pulse.

- SAI580 Modification: Corrected a problem with terminating a loop on voltage limits.

- Run External experiment did not correctly use the "Use Separate Setting for each channel". Corrected.

- Added choice of "Previous" or "OC" for Run External step.

- Run External experiment did not perform "Run Once" correctly. Corrected.

- Added choice of "first channel" and "last channel" for "Run Once" in the Run External step.

BCycle Modifications from 3.0f

- Added loop termination experiment step

- Data File Name added to the status window columns.

- Double-clicking on a line in the Status window now brings up the matching project window.

- Status window columns are now resizable

- Added "Status Window" button on the project screen which brings up the status window.

- The Status window now displays up to 48 channels

- Add support for Windows 10