smart-chart 8.0.2   Released December 2021

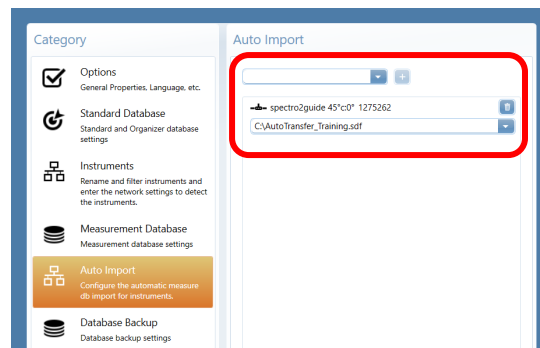**smart-chart 8.0.2** offers new tools to make the world of data analysis even more efficient.

Optimized WiFi data transfer for spectro2guide Family

As the new BYK-Gardner instruments spectro2guide, spectro2profiler and wave-scan 3 can also transfer data wireless, the **connection with smart-process by WiFi was optimized**. Software and instrument can be configured to automatically import all finished test series into the selected database of smart-process. Prerequisite is that instrument as well as computer are connected with the same network.

Please note that the Wi-Fi capability of spectro2profiler and wave-scan 3 are optional and need to be activated by a code.

In this context it is also now possible to set the automatic **database backup** interval to **daily**.

Additionally, there are instrument specific new features added.

New Features for spectro2guide Family

- **New color equations**
  - New color equation **dE2000 PF**:
    CIE 230 Technical Report (Validity of Formulae for Predicting Small Colour Differences) recommends a power function correction for existing color equations to better match with visual perception. The results are based on visual evaluations of different data sets.
    The CIEDE2000 formula with power function correction gave the better overall performance to predict colour differences within the range 0.0 to 5.0 CIELAB units.

    $$dE2000\ PF = 1.43 \times dE2000^{\,0.70}$$

- **Standard Management**
  - **Manual entry of L*a*b* values to define a virtual color standard**
    In case a physical standard is no longer available, a physical panel which is close to the original master standard can be measured and the dL*a*b* values of this working standard compared to the master standard can be input.
    The digital standard contains both measured and calculated spectra.

- **Organizer with Auto Standard Function**
  - − Organizer also supports Auto Standard now
  - − The last selected organizer can be easily repeated. Therefore, the Organizer menu as it is shown on the instrument display was changed.
  - − In case Parameter 4 and 5 use customer specific catalog names, these names are transferred to spectro2guide as well (see Paint Batch no and VIN in below screen).

Change parameters by clicking on respective row.

Repeat last Organizer with arrow.

Bug fixes for spectro2guide
- When statistic is activated during measurement, the results are now also shown in the data table of smart-lab
- When tolerances are deselected in the data table of smart-lab, the color data rows now match again with the sample name

New Features for BYK-mac i Family

- **New color equations**
  - − New customer color equation for Suzuki: **dESuzuki**
    In 2021 a joint development with Suzuki resulted in a new customer specific weighted color equation based on dEcombined with adjustments for the sparkle calculation.
  - − New color equation **dEDIN2019 uw and dEDIN2019 w**
    The new DIN standard 6175 from 2019 which is based on the dE Audi2000 equation can now be selected to display weighted color differences components (w) or unweighted color difference components (uw).

- **Standard Management**
  - − **Manual entry of L*a*b* values to define a virtual color standard:**
    In case a physical standard is no longer available, a physical panel which is close to the original master standard can be measured and the dL*a*b* values of this working standard compared to the master standard can be input.

New Features for spectro2profiler

- All new features mentioned for the spectro2guide are applicable for the spectro2profiler as well:
  - New color equations
  - Manual entry of L*a*b* values to define a virtual color standard
  - New Organizer menu
    <u>Please note:</u> Parameter 4 and 5 catalog names are not transferred in the current version - this will be fixed in the next release.
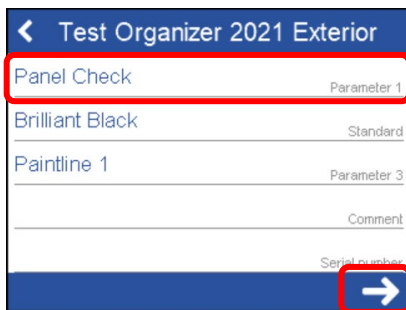
Bug fixes for spectro2profiler

- When tolerances are deselected in the data table of smart-lab, the color data rows now match again with the sample name
- Bug related to tolerance input for color components is fixed
- Out of memory bug for data transfer of large data sets is fixed
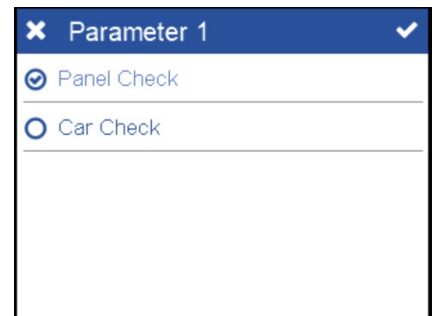
New Features for wave-scan Family

- **New scale**
  - New scale for Chinese customer Changan: **Changan OP**
    This scale is available for wave-scan II/dual and wave-scan 3/dual
- Support of wave-scan Nissan ROBOTIC
- New Organizer menu
  <u>Please note:</u> Parameter 4 and 5 catalog names are not transferred in this version - this will be fixed in the next release.

Change parameters by clicking on respective row.

Repeat last Organizer with arrow.

New Firmware included with smart-chart 8.0.2

To support the new smart-chart functions, also new firmware versions are needed.

spectro2guide: Version 2.3.0.29803
- New color equation: dEscm and dE2000 PF
- New color index: Tinting Strength and adjusted color difference components
  - AppTS = Apparent Strength: Strength calculation based on integral under curve
  - MaxTS = Strength Maximum Absorption: Strength calculation at wavelength of maximum absorption ➔ automatically selected based on the spectral data
- New organizer menu with Auto Standard
- Auto import with WiFi

BYK-mac i: Version 9.77
- New color equation for dESuzuki
- Color equation dEDIN2019w and dEDIN2019uw

spectro2profiler: Version 1.3.2.29834
- All solid color related new features (same as spectro2guide)
  - New color equation dEscm and dE2000 PF
  - New color index: Tinting Strength and adjusted color difference components
  - New organizer menu with Auto Standard
  - Auto import with Wi-Fi

New wave-scan 3: Version 1.3.0.29874
- New scale Changan OP
- New organizer menu
- Auto import with Wi-Fi

wave-scan dual/II: Version 5.79
- New scale Changan OP