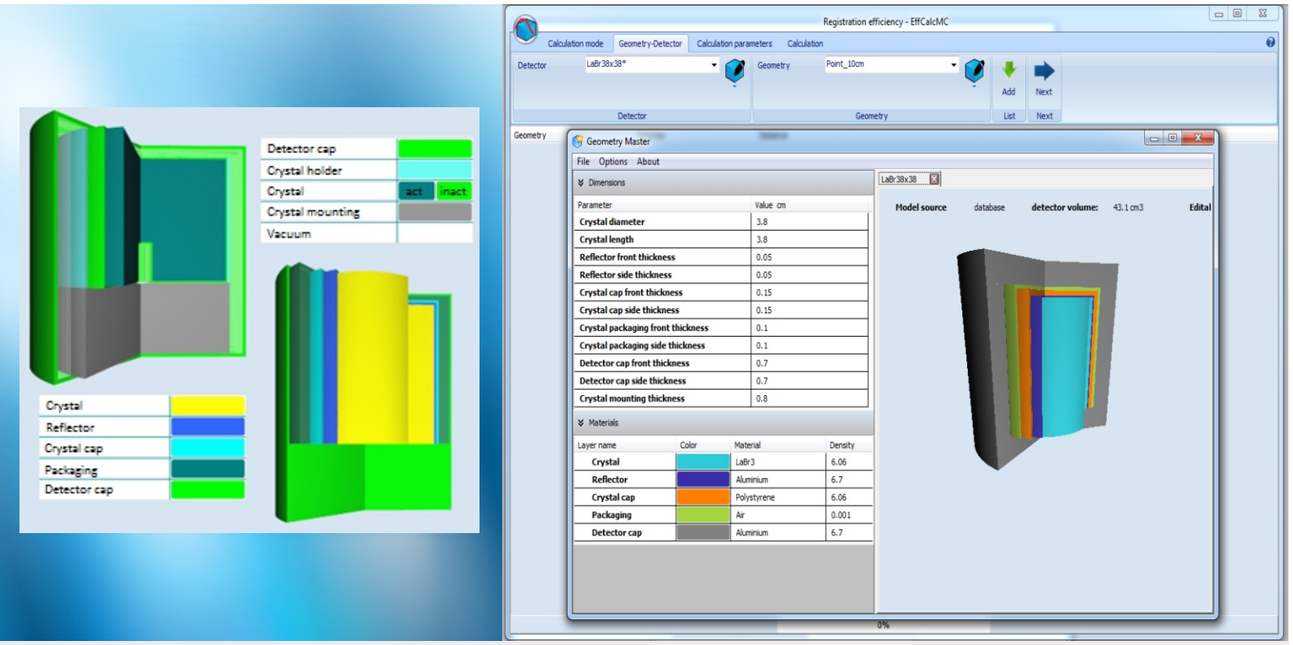

Nuclide Master Plus software package

Application

Nuclide Master Plus software package has been developed for calculation of detection efficiency and correction factors for true coincidences. It is also used for correction of gamma radiation intensities in radionuclides library. EffCalcMC (Efficiency Calculation Monte-Carlo) is the main program.

The calculation is based on Monte-Carlo method using parameters of the required nuclides from the library of evaluated nuclear structure data ENSDF. The factors can be calculated for different detectors types (semiconducting and scintillation) which are saved in database compatible with EffMaker software. Marinelli vessels, cylinder and point can be used as the measurement geometries.

TCCFCALC (True Coincidence Correction Factor CALCulation) utility is created to solve true-coincidence summing in/out effect problem in different applications of gamma-spectrometry. It allows to perform calculations for any known gamma-emitting radionuclides and for a wide set of measurement geometries including scintillation and HPGe detectors with point and volumetric sources (Marinelli or cylindrical beaker with arbitrary dimensions).

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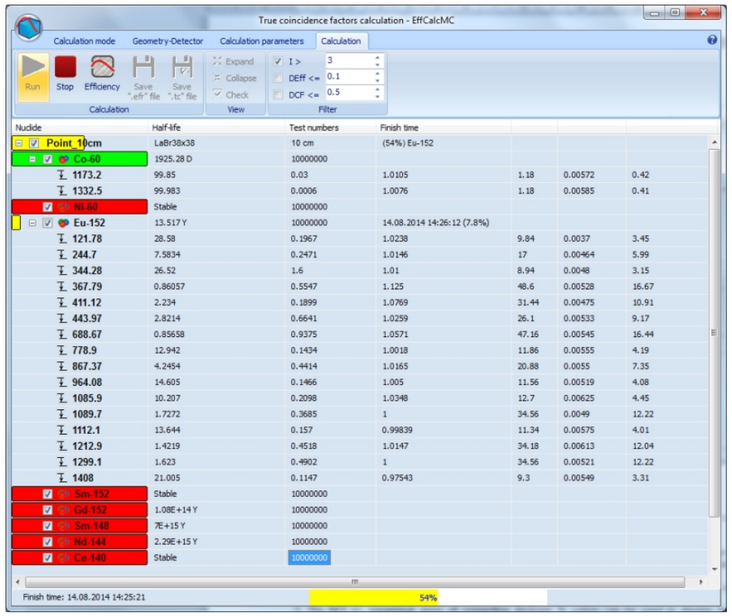
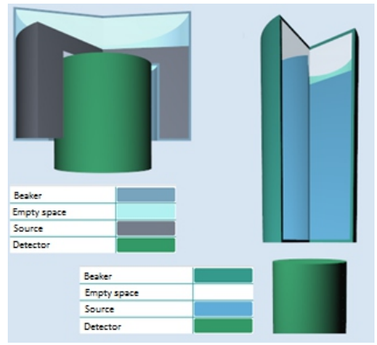
Specification

- detectors and measurement geometries parameters setting and saving in database;
- lines and radionuclides lists creation;
- calculation of detection efficiency and correction factors for true coincidence using Monte-Carlo method;
- data filtering;
- creation and addition of correction factors for true coincidence library;
- data viewing and saving in detection efficiency library;
- correction of gamma-radiation intensities in radionuclides library;
- batch processing possibility for several geometries and energy ranges.





TCCFCALC (True Coincidence Correction Factor CALCulation) utility has been added to Nuclide Master for:
• calculation of true coincidence correction factor and correction of gamma radiation intensities in radionuclides library;
• calculation of detection efficiency.