

Theremino_MCA_v2.9_Tomy_9A5TOM

Identifier class in Theremino MCA v2.9 have next features:

1. Gamma spectrometry or XRF analyser – for XRF select XRF checkbox on top-right corner of Theremino window
2. List of Isotopes in GS mode or Elements in XRF mode in top-right corner of Theremino window. Selecting item from list (combobox) showing markers with relevant energies for isotopes in GS mode and showing markers with relevant energies and atom shell label for XRF mode.
3. Click on spectrum graph and clicking on Identify button showing isotopes/elements which suit or are close to selected energy with tolerances set in \Extra\ IdentSettings.txt file.

Files needed for identifier features:

\Extra\ IdentSettings.txt

\Extra\ Isotopes_Energy.txt

\Extra\XRFTable.txt

Settings properties of identification features in appropriate files:

\Extra\ IdentSettings.txt

This file contains settings for tolerances (Gamma Spectrometry suit, Gamma Spectrometry close to, XRF suit, XRF close to) and visibility for shell energies of elements.

```
IsotopeSuitTolerance,10
IsotopeCloseToTolerance,20
XRFsuitTolerance,10
XRFCloseToTolerance,20
Kalpha1,1
Kalpha2,1
Kbeta1,1
Lalpha1,1
Lalpha2,1
Lbeta1,1
Lbeta2,1
Lgamma1,0
Malpha1,0
```

First four lines are settings for tolerances for identified energies with button IDENTIFY.

Tolerances can be after comma (,) and can be in range between 0.01 and 200 with decimal dot (.) and two decimal places if needed. Tolerances are expressed in **keV**.

Example for Gamma Spectrometry:

IsotopeSuitTolerance,0.01

IsotopeCloseToTolerance,15.05

Last nine lines are settings for showing shells. Value 1 is show in application and value 0 is do not show in application.

Example:

Lbeta2,1

Lgamma1,0

Lbeta2 shell will be showed in application

Lgamma1 will be unreachable in application

\Extra\XRFTable.txt

This file contains some informations about elements (shell and energies) and some informations for internal app use. Energies are expressed in **eV**.

Lines in file looks like in next table:

1,0,Au,Ma1,2122.90,2122.90
1,1,Au,La2,9628.00,9333.00
1,0,Au,La1,9713.30,9713.30
1,0,Au,Lb1,11442.30,11442.30
1,0,Au,Lb2,11584.70,11584.70

Separator in table is comma (,) and separator for decimal places are dot (.).

Examples (first two lines) from table above:

1,0,Au,Ma1,2122.90,2122.90

- First column value 1 is for internal use (NO USER CHANGE)
- second column value 0 show that this element use energy setted by default (CAN BE CHANGED BY USER IF ENERGY CHANGED)
- third column value is element symbol in this example Gold (NO USER CHANGE)
- fourth column value showing that this line is for Malpha1 shell (NO USER CHANGE)
- fift column value is energy default value (NO USER CHANGE)
- sixth column value is value showed in application (CAN BE CHANGED BY USER)

1,1,Au,La2,9628.00,9333.00

In line above you can see 1 in second column which mean that energy changed by the user in sixth column.

So, user can change energy for element/shell in sixth column and in that case need to change second column value in 1. Fifth column is for reverting user defined energy to default energy (in this moment by hand). Another four lines are not allowed tto change.

This is for helping user to make it's own collection of energies with regard to „source“ used in XRF process.

NOTE:

If migrating to new version of application backup those three files and replace files from new version to preserve settings in edited files.

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