# Package 'rxylib'

July 5, 2017

**Type** Package

**Title** Import XY-Data into R

**Description** Provides access to the 'xylib' C library for to import xy
data from powder diffraction, spectroscopy and other experimental methods.

**Version** 0.1.1

**Date** 2017-07-05

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**URL** https://github.com/R-Lum/rxylib

**BugReports** https://github.com/R-Lum/rxylib/issues

**License** GPL-3 | LGPL-2.1

**Depends** R (>= 3.3.0), utils

**Imports** Rcpp (>= 0.12.11), stringr (>= 1.2.0), httr (>= 1.2.1)

**Suggests** testthat (>= 1.0.2)

**LinkingTo** Rcpp (>= 0.12.11), BH (>= 1.62.0-1)

**Encoding** UTF-8

**Collate** 'rxylib.R' 'RcppExports.R' 'read_xyData.R'

**RoxygenNote** 6.0.1

**NeedsCompilation** yes

## R topics documented:

`rxylib-package` *Import XY-Data into R*

## Description

Provides access to the 'xylib' C library for to import xy data from powder diffraction, spectroscopy and other experimental methods, like gamma-ray spectrometry.

| | |
|---|---|
| Package: | rxylib |
| Type: | Package |
| Version: | 0.1.1 |
| Date: | 2017-07-05 |
| License: | GPL-3 \| LGPL-2.1 (for the C++ library 'xylib') |

## Details

Currently the package uses 'xylib' in version 1.6 (unreleased).

Supported data formats

| ID | NAME | DESCRIPTION | FILE EXTENSION | VALID_OPTIONS | DATATYPE | BLO |
|---|---|---|---|---|---|---|
| [1,] | cpi | Sietronics Sieray CPI | cpi | | ascii | multi |
| [2,] | uxd | Bruker Diffrac-AT UXD | uxd | | ascii | singl |
| [3,] | rigaku_dat | Rigaku DAT | dat | | ascii | singl |
| [4,] | bruker_raw | Siemens/Bruker RAW | raw | | binary | singl |
| [5,] | bruker_spc | Bruker ESP300-E SPC | spc | | binary | multi |
| [6,] | vamas | VAMAS ISO-14976 | vms | | ascii | singl |
| [7,] | philips_udf | Philips UDF | udf | | ascii | multi |
| [8,] | spe | PI WinSpec SPE | spe | | binary | singl |
| [9,] | pdcif | Powder Diffraction CIF | cif | | ascii | singl |
| [10,] | philips_rd | Philips PC-APD RD/SD | rd sd | | binary | multi |
| [11,] | xrdml | PANalytical XRDML | xrdml | | ascii | singl |
| [12,] | canberra_mca | Canberra MCA | mca dat | | binary | multi |
| [13,] | canberra_cnf | Canberra CNF | cnf | | binary | multi |
| [14,] | xfit_xdd | XFIT XDD | xdd | | ascii | multi |
| [15,] | riet7 | RIET7/LHPM/PSI_DMC | dat | | ascii | multi |
| [16,] | dbws | DBWS data | dbw rit neu | | ascii | multi |
| [17,] | chiplot | ChiPLOT data | chi | | ascii | multi |
| [18,] | spectra | Spectra / VGX 900 | 1 2 3 4 5 6 7 8 9 | | ascii | singl |
| [19,] | specsxy | SPECS SpecsLab2 xy | xy | | ascii | singl |
| [20,] | csv | CSV or TSV | csv tsv tab | decimal-comma | ascii | multi |

## Author(s)

Sebastian Kreutzer, IRAMAT-CRP2A, Universite Bordeaux Montaigne (France), RLum Team (family support), Marcin Wojdyr (maintainer and author of the C++ library 'xylib'), Peng Zhang (author of the C++ library 'xylib')

read_xyData *Import xy-Data for Supported Formats into R*

## Description

The function provides access to the underlying `xylib` to import data for supported file formats into R. In most cases, only the file path is needed with further arguments to import the data. The function automatically recognises allowed formats. See rxylib-package for supported formats.

## Usage

```
read_xyData(file, options = "", verbose = TRUE)
```

## Arguments

| | |
|---|---|
| `file` | character (**required**): path and file to be imported. The argument accepts an `URL`. |
| `options` | character (with default): set format options (see rxylib-package) |
| `verbose` | logical (*with default*): enables/disables verbose mode |

## Value

The functions returns a list of matrices.

## Function version

0.1.0

## Author(s)

Sebastian Kreutzer, IRAMAT-CRP2A, Universite Bordeaux Montaigne (France)

## Examples

```
##load example dataset
file <- system.file("extdata/ExampleSpectrum.CNF", package = "rxylib")
results <- read_xyData(file)

##plot spectrum
plot(results[[1]],
 type = "l",
 log = "y",
 xlab = "Energy [keV]",
 ylab = "Counts",
 main = "Thorite - 1800 s")

mtext(side = 3, "Canberra Inspector 1000, 3 x 3 NaI probe")
```

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