Package 'angstromATE'

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Type Package

Title Imports Log Files from Angstrom Engineering Thermal Evaporator

Version 0.1.3

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Description Opens and imports log files from Angstrom Engineering Thermal Evaporator and extracts basic characteristics, such as base pressure, time of the evaporation. It can visualize the deposition observables for review.

License GPL (>= 3)

BugReports https://github.com/thomasgredig/angstromATE/issues

Encoding UTF-8

RoxygenNote 7.3.2

Imports XML, stringr, utils

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

Repository CRAN

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Contents

ATE.complete *ATE Deposition Summary*

Description

Reads an XML Status file from the ATE thermal evaporator and returns the procedural timeline.

Usage

```
ATE.complete(filename, summaryOnly = FALSE)
```

Arguments

filename	XML Status file from Angstrom Thermal Evaporator
summaryOnly	logical, if TRUE, returns summary for one layer

Details

Extracts information about the deposition thickness from the completed status XML file at the end of the deposition.

Value

deposition thickness, rate, ramping times, and actions

Author(s)

Thomas Gredig

Examples

```
fileName <- ATE.sampleFiles('_Complete_')
ATE.complete(fileName, TRUE)
ATE.complete(fileName)
```

ATE.import *Imports Angstrom Engineering Thermal Evaporator Log Data*

Description

Imports Angstrom Engineering Thermal Evaporator Log Data

Usage

```
ATE.import(filename)
```

Arguments

filename	CSV filename including path for the ATE log file

Value

data frame with around 50 variables and rows that represent time; the variables include Date, Time, SubstrateShutterOpen, ChamberPressure and many other parameters.

Author(s)

Thomas Gredig

Examples

```
fileName = ATE.sampleFiles("csv")[1]
d = ATE.import(fileName)
head(d)
```

ATE.info *Basic Information from Thermal Evaporator Deposition*

Description

Imports data from the CSV log file of an Angstrom Engineering Thermal Evaporator. It extracts information during the deposition; i.e. while the shutter is open. It returns a condensed version of the deposition parameters.

Usage

```
ATE.info(filename, verbose = FALSE)
```

Arguments

filename	full path of ATE Log file
verbose	set to TRUE to get additional information

Value

list with information during the deposition that includes the thickness, the deposition time in seconds, the starting date, the substrate heater temperature, the material deposition temperature, tooling factor, base pressure, the pressure at start of the deposition, maximum pressure, and the material name

Author(s)

Thomas Gredig

See Also

[ATE.import()]

Examples

```
fileName = ATE.sampleFiles("csv")[1]
d = ATE.info(fileName,TRUE)
head(d)
```

`ATE.sampleFiles` *Sample ATE file list*

Description

Returns a list of sample thermal evaporator log files, mostly for testing.

Usage

```
ATE.sampleFiles(filePattern = "*")
```

Arguments

`filePattern`	pattern to limit the files

Value

list of sample data files with log information

Examples

```
ATE.sampleFiles()
ATE.sampleFiles('_Status')
```

`ATE.status` *ATE Recipe Status*

Description

Reads an XML Status file from the ATE thermal evaporator and returns the procedural timeline.

Usage

```
ATE.status(filename)
```

Arguments

filename	path and filename of XML Status file from Angstrom Thermal Evaporator

Value

data frame with description steps, start and end times

Author(s)

Thomas Gredig

Examples

```
fileName <- ATE.sampleFiles('_Status')
ATE.status(fileName)
```

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conv2seconds *Convert Time String to Numeric*

Description

Convert Time String to Numeric

Usage

```
conv2seconds(strTime)
```

Arguments

strTime	a string with time

Value

a numeric value in units of seconds

Author(s)

Thomas Gredig

Examples

```
conv2seconds("00:35:40.1816298")
conv2seconds("00:35:40.1816298") - conv2seconds("00:36:40.1816298")
conv2seconds("1.19:07:06.5180408")
```

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