

# Technical Handbook

The  $\text{\LaTeX}$  Beilstein bundle for submissions to the  
*Beilstein Journal of Nanotechnology*

|                 |   |           |  |
|-----------------|---|-----------|--|
| <b>Contents</b> |   |           |  |
| <b>1</b>        | <b>Introduction</b>   | <b>1</b>  |  |
| <b>2</b>        | <b>Installation</b>   | <b>1</b>  |  |
| 2.1             | Global installation via<br>your $\text{\TeX}$ distribution      | 1         |  |
| 2.2             | Local TDS installation  | 1         |  |
| <b>3</b>        | <b>Requirements</b>   | <b>2</b>  |  |
| <b>4</b>        | <b>The class file</b>   | <b>3</b>  |  |
| 4.1             | Class options . . . . .   | 3         |  |
| 4.2             | Title page . . . . .  | 5         |  |
| 4.3             | Section headers . . . . .                                       | 6         |  |
| 4.4             | Special sections . . . . .                                      | 7         |  |
| 4.5             | Floats . . . . .  | 9         |  |
| 4.6             | Writing chemistry . . . . .                                     | 11        |  |
| <b>5</b>        | <b>Managing references with<br/><math>\text{\BibTeX}</math></b> | <b>13</b> |  |
| 5.1             | The $\text{\BibTeX}$ style files                                | 13        |  |
| 5.2             | Structure of a $\text{\BibTeX}$<br>database . . . . .           | 13        |  |
|                 | <b>Appendix</b>   | <b>15</b> |  |

## Abstract

The Beilstein bundle provides a  $\text{\LaTeX}$  class file and a  $\text{\BibTeX}$  style file in accordance with the requirements of submissions to the *Beilstein Journal of Nanotechnology*. Although the files can be used for any kind of document, they have only been designed and tested to be suitable for submissions to the *Beilstein Journal of Nanotechnology*.

## 1 Introduction

The Beilstein bundle consists of three parts. The L<sup>A</sup>T<sub>E</sub>X class `beilstein.cls` is intended to be used for submissions. It is based on the standard `article` class, but was modified to meet the requirements for submissions to the *Beilstein Journal of Nanotechnology* as published in the “Instructions for Authors” [1]. Moreover the L<sup>A</sup>T<sub>E</sub>X class `beilstein.cls` facilitates ease of use by providing the authors with a set of useful macros and environments.

The B<sub>B</sub>T<sub>E</sub>X style `bjnano.bst` is used by the class to format citations and references correctly. It is based on Joseph Wright’s `achemso.bst`, but was largely adjusted to work exactly on *Beilstein Journal of Nanotechnology* submissions.

Finally, an example document is included in the Beilstein bundle. It is intended to be used as a template for submissions, and illustrates the usage of the class and the B<sub>B</sub>T<sub>E</sub>X file.

## 2 Installation

### 2.1 Global installation via your T<sub>E</sub>X distribution

From version 1.2 onwards, the Beilstein bundle is distributed via CTAN and the major T<sub>E</sub>X distributions. Therefore after having updated your T<sub>E</sub>X Live or MiK<sub>T</sub>E<sub>X</sub> installation you can use the Beilstein files right away.

### 2.2 Local TDS installation

The Beilstein bundle is supplied with the TDS-ready ZIP file, `beilstein-tds.zip`. Simply unzip this file into your local texmf tree and run your hash program (e.g., `texhash` for recent T<sub>E</sub>XLive or MiK<sub>T</sub>E<sub>X</sub> systems).

To extract the bundle of files and to build the documentation yourself, run pdfL<sup>A</sup>T<sub>E</sub>X on `beilstein.dtx`. The files can then be installed either by putting them into the current working directory (where the main T<sub>E</sub>X file is) or — much better — as described above by moving the files to suitable places in a local texmf tree `$LOCALTEXMF` according to Table 1.

Table 1: Files contained in the Beilstein bundle.

| File                                | → | Directory  |
|-------------------------------------|---|--|
| <code>beilstein.cls</code>          | → | <code>\$LOCALTEXMF/tex/latex/beilstein</code>    |
| <code>beilstein.dtx</code>          | → | <code>\$LOCALTEXMF/source/latex/beilstein</code> |
| <code>beilstein.ins</code>          | → | <code>\$LOCALTEXMF/source/latex/beilstein</code> |
| <code>beilstein-template.bib</code> | → | <code>\$LOCALTEXMF/tex/latex/beilstein</code>    |
| <code>beilstein-template.tex</code> | → | <code>\$LOCALTEXMF/tex/latex/beilstein</code>    |
| <code>bjnano.bst</code>             | → | <code>\$LOCALTEXMF/bibtex/bst/beilstein</code>   |
| <code>bjnano_logo.pdf</code>        | → | <code>\$LOCALTEXMF/source/latex/beilstein</code> |
| <code>figure1.pdf</code>            | → | <code>\$LOCALTEXMF/doc/latex/beilstein</code>    |
| <code>scheme1.pdf</code>            | → | <code>\$LOCALTEXMF/tex/latex/beilstein</code>    |
| <code>scheme2.pdf</code>            | → | <code>\$LOCALTEXMF/tex/latex/beilstein</code>    |

If you are not sure about local texmf trees at all, you can have a look at <https://texfaq.org/FAQ-inst-wlcf> for more information.

### 3 Requirements

The Beilstein class was designed to rely on standard L<sup>A</sup>T<sub>E</sub>X packages only. It requires the following ones:

- Internal packages
  - `xkeyval`,
  - `ifthen`,
  - `babel`,
  - `inputenc`, `fontenc`.
- Fonts
  - `newtxtext`, `tgheros`, `newtxtt`
  - `textcomp`.
- Page layout
  - `geometry`,
  - `ragged2e`, `everysel`, `footmisc`,
  - `setspace`,
  - `lineno`.

- Math and science
  - `amsmath`, `amstext`, `amssymb`, `amsgen`, `amsbsy`, `amsopn`, `amsfonts`, `newtx-math`.
- Floats
  - `float`,
  - `flafter`,
  - `graphicx`,
  - `array`,
  - `tabularx`,
  - `longtable`.
- Bibliography
  - `natbib`.

All these packages should be present in any major T<sub>E</sub>X distribution and are also available from *The Comprehensive TeX Archive Network* (CTAN) at <https://www.ctan.org>.

A complete list of used files and tested versions can be found in the Appendix section on page 15.

## 4 The class file

### 4.1 Class options

Most of the things to be considered for submissions to the *Beilstein Journal of Nanotechnology* are directly included into the class file. There is only one major choice authors have to make, i.e., to determine the type of manuscript they want to submit.

`manuscript=` The Beilstein-Institut has defined five such types and each type has a special purpose and structure. The chosen option is used internally to check for mandatory sections and elements. The types are designed to give the author a slight control over the article structure.

The selection of the type is done by the key-value-option `manuscript`, which can take the values listed in Table 2. To switch your document to a “Book Review Article” e.g., simply use `\documentclass[manuscript=bookreview]{beilstein}`. In case of an unknown value, the class will use the default option.

Table 2: Possible values for key-value option “manuscript”.<sup>a</sup>

| Option   | Meaning                    |
|--|----------------------------|
| <code>manuscript=bookreport</code>               | Book Report Article        |
| <code>manuscript=commentary</code>               | Commentary Article         |
| <i><code>manuscript=fullresearchpaper</code></i> | <i>Full Research Paper</i> |
| <code>manuscript=letter</code>                   | Letter Article             |
| <code>manuscript=review</code>                   | Review Article             |
| <code>manuscript=suppinfo</code>                 | Supporting Information     |

<sup>a</sup>Default option is printed in italics.

`american`      Two other options of a more technical aspect exist. Firstly, you can tell L<sup>A</sup>T<sub>E</sub>X  
`british`        whether you use American or British English (see Table 3). Internally only dif-  
 ferent hyphenation patterns are used. So you might not see a difference in the  
 output at first sight.

Table 3: Options for language.<sup>a</sup>

| Option                                   | Meaning                     |
|--|-----------------------------|
| <i><code>american, USenglish</code></i>  | <i>Use American English</i> |
| <code>british, english, UKenglish</code> | Use British English         |

<sup>a</sup>Default option is printed in italics.

`applemac`      Secondly, you might want to change the input encoding of your document, e.g.,  
`latin1`        when using accented characters. Therefore, the class offers a small set of options  
`utf8`         (see Table 4). The option `utf8` is set as default beginning with version 2.0.

Table 4: Options for input encoding.<sup>a</sup>

| Option                   | Meaning                   |
|--------------------------|---------------------------|
| <code>applemac</code>    | Use special Mac encoding  |
| <code>latin1</code>      | Use ISO8859-1 encoding    |
| <i><code>utf8</code></i> | <i>Use UTF-8 encoding</i> |

<sup>a</sup>Default option is printed in italics.

Further options have been added to the recent version of the class:

`sectionnumbering`      The Beilstein class disables the usual section numbering mechanism by changing  
 the counter “secnumdepth” appropriately. You can switch back by using the class

option `sectionnumbering=true` or just `sectionnumbering`. Doing so all non-starred sectioning commands will be numbered while the starred versions still have no number.

`fnpara` By default footnotes can only be used in tables and are printed one per line. This can be changed to paragraph mode, either locally (see page 10) or globally. To this purpose the Beilstein class offers the option `fnpara=true` or just `fnpara`.

**Global options** The Beilstein class was developed to include all necessary requirements. However, if you need extra options for packages already being loaded by the class itself, you can add them to the list of global options.

## 4.2 Title page

The *Beilstein Journal of Nanotechnology* has its own title page format. However, a more or less standard set of L<sup>A</sup>T<sub>E</sub>X commands can be used to provide the necessary information right after `\begin{document}`:

`\title` The title of your manuscript is given with `\title{<title>}`. There is also an optional argument that can be used when writing a document for the Supporting Information, e.g., `\title[<sititle>]{<title>}`. Both information are automatically used on the title page of the Supporting Information. For more information about creating Supporting Information files please see page 8.

`\sititle` As an alternative to the optional argument of `\title` you can use the macro `\sititle{<sititle>}`.

`\author` Each author of the article is named within their own `\author` command. For  
`\author*` a corresponding author the extended version `\author*` must be used. It has an additional second mandatory argument holding the author's email address.

With both commands the author's name is printed followed by a superscript number for the appropriate affiliation(s). As these numbers can be the same for several authors, an optional argument for a specific number can be used:

`\author[<affiliation number>]{<author's name>}` or  
`\author*[<affiliation number>]{<author's name>}{<email address>}`.

If you want to provide an email address for a non-corresponding author, there is a second optional argument:

`\author[<affiliation number>][<email address>]{<author's name>}`

In order to add an email address the first optional argument has to be present in any case. If there is no affiliation number, empty square brackets need to be given.

`\affiliation` The affiliations are given with `\affiliation{<postal address>}` and are numbered consecutively. Each `\author` with dedicated affiliation(s) is followed by one or more `\affiliation` commands (see example below). This can also be combined with the optional affiliation number.

`\maketitle` To print the title page use the command `\maketitle`. A complete title block might look like this:

```

1 \begin{document}
2 \title{Synthesis of highly substituted allenylsilanes by
3   alkylation of silylketenes}
4 %Corresponding author:
5 \author*{Stephen P. Marsden}{s.p.marsden@leeds.ac.uk} %
6 \affiliation{School of Chemistry, University of Leeds, Leeds
7   LS2 9JT, United Kingdom}
8 %A second author with two affiliations and an email address:
9 %Important: empty first optional argument
10 \author[] [Ducept@...]{Pascal C. Ducept}
11 \affiliation{Department of Chemistry, Imperial College London,
12   London SW7 2AY, United Kingdom}
13 \affiliation{An alternative address can be given here.}
14 %A third author with the same affiliation as the second:
15 \author[2]{X. Y.}
16 \maketitle %print the title page

```

For abstract and keywords please see section 4.4.

### 4.3 Section headers

You can use the standard L<sup>A</sup>T<sub>E</sub>X sectioning commands (with the exception of `\chapter`) to structure your document. Depending on the type of manuscript some sections are mandatory while others are optional.

For a “Full Research Paper” the following section headings might be used:

```

1 \section{Introduction}
2 ...
3 \section{Experimental}
4 ...
5 \section{Results and Discussion}
6 ...
7 \section{Conclusion}

```

Table 5 gives an overview of all allowed section headings for the different Beilstein class manuscript types.

Table 5: Allowed section headings for the different Beilstein class manuscript types.

| Section heading                          | Manuscript type <sup>a</sup> |                 |                 |                 |                 |
|--|------------------------------|-----------------|-----------------|-----------------|-----------------|
|  | BR <sup>b</sup>              | CA <sup>c</sup> | FR <sup>d</sup> | LA <sup>e</sup> | RA <sup>f</sup> |
| Book Details                             | +                            | –               | –               | –               | –               |
| Conclusion                               | –                            | +               | <i>o</i>        | –               | +               |
| Discussion                               | –                            | +               | –               | –               | –               |
| Experimental                             | –                            | –               | <i>o</i>        | –               | –               |
| Findings                                 | –                            | –               | –               | +               | –               |
| Introduction                             | –                            | +               | +               | –               | –               |
| Main Text                                | +                            | –               | –               | –               | –               |
| Results and Discussion (may be separate) | –                            | –               | +               | –               | –               |
| Review                                   | –                            | –               | –               | –               | +               |

<sup>a</sup>+ denotes a mandatory, *o* an optional and – a non-feasible section

<sup>b</sup>Book Report Article

<sup>c</sup>Commentary Article

<sup>d</sup>Full Research Paper

<sup>e</sup>Letter Article

<sup>f</sup>Review Article

## 4.4 Special sections

**abstract** After the title page an abstract must be given (with the exception of “Book Reports” and “Commentaries”). To meet the specifications for *Beilstein Journal of Nanotechnology* submissions L<sup>A</sup>T<sub>E</sub>X redefines the usual **abstract** environment internally.

**\keywords** The “Keywords” need to be given right after the abstract. There can be an arbitrary number of keywords (at least five keywords are recommended), and therefore the **\keywords** macro has only one mandatory argument holding the keywords separated by semicolons.

An abstract with keywords should look like this:

```

1 \begin{abstract}
2     ...
3 \end{abstract}
4 \keywords{allenyilsilanes; rhodium(II) octanoate-mediated
5     rearrangement; silylketenes; titanium carbenoids; ylide}

```



**acknowledgements**      The sections “Acknowledgements” and “Funding” are optional parts of all article types.

**funding**

All financial disclosures are supposed to be part of the “Funding” section.

As the layout differs from that of the main text, these sections should be written using the environments `acknowledgements` and `funding`:

```
1 \begin{acknowledgements}
2 We would like to thank ...
3 \end{acknowledgements}
```

```
1 \begin{funding}
2 This work was financially supported by ...
3 The authors are grateful for funding from ...
4 \end{funding}
```

**suppinfo**      Another optional section of an article is the “Supporting Information”, which may consist of various “Supporting Information Files”. To begin this section simply use `\begin{suppinfo}`.

**\sifile**      Inside the `suppinfo` environment the command `\sifile` is used to add a “Supporting Information File”. The syntax is:

```
\sifile[long description]{filename}{format}{short description}
```

Each `\sifile` can be followed by a `\label{labelname}` to cross-reference that file in the main text using `\ref{labelname}`.

The complete section could look like this:

```
1 \begin{suppinfo}
2 \sifile{experimental_part.pdf}{PDF}{Experimental part}
3 \label{si:experimental-part}
4 \sifile[A long description about the experimental data given in
5   this file]{nmr1.pdf}{PDF}{NMR spectra of compounds \CN{1},
6   \CN{2}, \CN{6} and \CN{7}.}
7 \end{suppinfo}
```

**L<sup>A</sup>T<sub>E</sub>X source**      A Supporting Information File can be created from a L<sup>A</sup>T<sub>E</sub>X source using the Beilstein L<sup>A</sup>T<sub>E</sub>X class. The same syntax that is used for the title page of the main manuscript can be used for the Supporting Information. An additional title for the Supporting Information (e.g., “Additional experimental data”) can be added by using the [*sititle*] option of the `\title` command:

```
\title[sititle]{manuscript title}
```

**\sititle**      Alternatively, the macro `\sititle{sititle}` can be used.

## 4.5 Floats

`figure` In addition to the environments `table` and `figure` already included in L<sup>A</sup>T<sub>E</sub>X, `table` there is a third environment for *Beilstein Journal of Nanotechnology* publications, `scheme` i.e., `scheme`. There is no difference in usage between `scheme` and the former two. To add a scheme “AScheme.pdf” you can enter the following:

```

1 \begin{scheme}
2 \caption{A scheme demonstrating something.}
3 \label{scheme:something}
4 \includegraphics[width=16.8cm,keepaspectratio]{AScheme}
5 \end{scheme}

```

pdfL<sup>A</sup>T<sub>E</sub>X is limited to a small set of graphic formats. All files have to be either in the PDF, PNG or JPG format.

Using EPS graphics will lead to an error during upload to the submission system. EPS graphics need to be converted to PDF, e.g., by using the package `epstopdf`, before uploading the manuscript to the submission system.

`\caption` Please note that it does not matter whether `\caption` is put above or below `\label` `\includegraphics`. The caption will always be below the scheme in the output file. The same mechanism is used to put figure captions below and table captions above the content. If you want to add a concise title to a float, please use the `\ref` optional argument: `\caption[concise title]{legend}`. However, as common in L<sup>A</sup>T<sub>E</sub>X `\label{labelname}` must always follow `\caption`, otherwise a corresponding `\ref` command will yield wrong results.

`\sglcolfigure` During the final typesetting process the article will be printed in double-column `\sglcolscheme` mode. Although this does not make any difference for section headings and text, `sglcoltabular` floating objects can be formatted single-column (with a maximum width of 8.2 cm) `sglcoltabularx` or double-column (with a maximum width of 16.8 cm).

The Beilstein class defines some macros to comfortably add floats without bothering about the correct width. For single-column floats you can use `\sglcolfigure{filename}` and `\sglcolscheme{filename}` as well as the environments `sglcoltabular` and `sglcoltabularx`.

A single-column scheme containing “results-sil.pdf” can then be inserted as:

```

1 \begin{scheme}
2 \sglcolscheme{results-sil} %or alternatively:
3   \includegraphics[width=8.2cm,keepaspectratio]{results-sil}
4 \caption{Reaction of substituted silylketenes with
5   ester-stabilised phosphoranones.}
6 \label{scheme:silylketenes}
7 \end{scheme}

```

`\dblcolscheme` The same macros and environments with “dbl” instead of “sgl” are defined for  
`\dblcolfigure` double-column floats. Thus for a table you can use:

```

dblcoltabular
dblcoltabularx
1 \begin{table} %floating environment
2 \caption{Reaction of substituted silylketenes with ester-stabilised
3 phosphoranes.}
4 \label{tab:silylketenes}
5 \begin{dblcoltabularx}{|l|>{\bfseries}l|>{\bfseries}l|l|l|X|X|}\hline
6 \bfseries Entry & \bfseries Ketene & \bfseries Ylide &
7 \bfseries Temp (\celsius) & \bfseries t (h) & \bfseries Solvent &
8 \bfseries Yield 6/7 (8)\\\hline
9 1 & 1a & 4 & 80 & 24 & PhH & 54\,\,\%\\hline
10 2 & 1a & 5 & rt & 3 & CHCL & 60\,\,\%\\hline
11 ...
12 \end{dblcoltabularx}
13 \end{table}

```

More information on the `tabularx` environment can be found in the documentation of the `tabularx` package [2]. The standard `tabular` environment with the common column parameters “l, c, r, p” is supported as well.

`longtable` If you have a table that is longer than one page, please use the `longtable` environment. Please see the documentation of the package for more information.

`\footnote` Footnotes are only allowed in tables (see Appendix section). You can use them in the caption as well as within the table. Lowercase letters are used automatically and the footnote text is written below the table.

`\fnpara` You can use `\fnpara` to switch to paragraph mode for footnotes in all following  
`\fnnormal` tables. To restore the usual footnote formatting just use `\fnnormal`.

```

1 \fnpara
2 %Table with footnotes in paragraph mode
3 \begin{table}
4 ...
5 \end{table}
6 ...
7 \fnnormal
8 %Table with normal footnotes
9 \begin{table}
10 ...
11 \end{table}

```

## 4.6 Writing chemistry

L<sup>A</sup>T<sub>E</sub>X is a very powerful tool for mathematical typesetting. All commands and structures included in are provided by the Beilstein class as well. In addition, the packages of the  $\mathcal{A}\mathcal{M}\mathcal{S}$ , such as `amsmath` and `amssymb`, are loaded.

`$. . . $` You can use the standard delimiters `$. . . $` for inline math and environments such as `equation` for math floats. Please use the inline math mode for single numbers such as `-2` to obtain the correct minus sign. Please note that `—` as described in the “Instructions for Authors” — equations must fit a width of 8.2 cm (single column). Wider equations need to be split accordingly.

`\text` If you have text inside a formula, e.g., as an index, you can use `\text` to typeset it in an upright font and in the correct size.

```
1 \text{amplitude sensitivity}=10$\\
2 $C\_text{PEG}=170$
```

However, for chemical elements and reactions the L<sup>A</sup>T<sub>E</sub>X math mode is not sufficient, because many chemical expressions have to be typeset in an upright font and not in italics. For example, `$O_2$` results in  $O_2$  instead of  $O_2$ . Using `\text` or writing `0$O_2$` can solve this issue, but both methods are not very comfortable when they have to be applied multiple times. Therefore a special `\chem` macro is provided by the Beilstein class.

### Chemical specialities: the `\chem` and `\unit` macros

Although there are already many powerful packages such as `siunitx` or `chemsym` to write physical and chemical units and symbols, the Beilstein class implements its own rather simple interface to keep all submitted documents consistent and make it easier to process them during final typesetting.

`\chem` For chemical formulas the macro `\chem` is defined. Inside its argument `_` and `^` are active in the same way as in the math mode. All text, e.g., element names `_` is typeset in an upright font.

```
1 \chem{CuCl_2} and \chem{{SO_4}^{2-}}\\
2 \chem{^2_1H+^3_1H}\\
3 $C\_chem_{Cu^{2+}}\times 10^{-2}=0.005(1)\, \text{M}$\\
```

$\text{CuCl}_2$  and  $\text{SO}_4^{2-}$   
 ${}^2_1\text{H} + {}^3_1\text{H}$   
 $C_{\text{Cu}^{2+}} \times 10^{-2} = 0.005(1) \text{ M}$

`\unit` The same applies to physical units. For instance, writing `$cm^2$` does not result in  $\text{cm}^2$ , but  $cm^2$ . Thus, `\unit` can be used to enter all units correctly and more comfortably. If more than one unit is needed, `~` can be used to separate them.

```

1 $ \text{amplitude sensitivity}=10\unit{nA-V^{-1}}$\\
2 $C_{\text{PEG}}=170\unit{mg/ml}$

```

amplitude sensitivity = 10 nA V<sup>-1</sup>

$C_{\text{PEG}} = 170 \text{ mg/ml}$

`\curvearrowright`      L<sup>A</sup>T<sub>E</sub>X provides several arrows for chemical reactions. The most common ones  
`\rightharpoonowdown` are listed in Table 6. Many more can be obtained from `amssymb`.

`\rightleftharpoons`

`\leftrightharpoonow` 1 `\chem{CH_4+2O_2\rightarrow CO_2 + 2H_2O}\`

`\leftrightharpoonow` 2 `\chem{2H_{2(g)}+O_{2(g)}\to 2H_2 O_{(1)}} $\Delta H=-286\unit{kJ/mol}\`

`\Rightarrow` 3 `\chem{N_{2(g)}+3H_{2(g)}\rightleftharpoons 2NH_{3(g)}}`

`\uparrow` CH<sub>4</sub> + 2O<sub>2</sub> → CO<sub>2</sub> + 2H<sub>2</sub>O

`\downarrow` 2H<sub>2(g)</sub> + O<sub>2(g)</sub> → 2H<sub>2</sub>O<sub>(l)</sub> ΔH = -286 kJ/mol

N<sub>2(g)</sub> + 3H<sub>2(g)</sub> ⇌ 2NH<sub>3(g)</sub>

Table 6: L<sup>A</sup>T<sub>E</sub>X macros for arrows used in chemical reactions.

| Arrow | Macro  | Usage                      |
|-------|--|----------------------------|
| →     | <code>\rightarrow</code> or <code>\to</code> | One-way chemical reactions |
| ⇌     | <code>\rightleftharpoons</code>              | Two-way chemical reactions |
| ⇌     | <code>\rightleftharpoons</code>              | Equilibria                 |
| ↔     | <code>\leftrightharpoonow</code>             | Resonance structures       |
| ⇒     | <code>\Rightarrow</code>                     | Retrosynthetic analysis    |
| ↑     | <code>\uparrow</code>                        |                            |
| ↓     | <code>\downarrow</code>                      |                            |
| ↷     | <code>\curvearrowright</code>                |                            |
| ↘     | <code>\rightharpoonowdown</code>             |                            |

`\CN`      Compounds have to be typeset in boldface. Instead of `\textbf \CN` can also be used for a logical markup. For ranges of compound numbers `\nobreakdash-` avoids linebreaks.

`\l`      Long names of chemical compounds sometimes are hyphenated badly. This  
`\-` can be controlled by using `\-` for hyphens and `\l` for soft hyphens as arguments in `\IUPAC`, e.g.,

`\IUPAC{4,7-dimethyl\l-3,5,7-tri\lhydro-1,2,4,7-tetrazocin\l-3,8-dione}`.

### Chemical structures from external programs

There is a lot of highly specified software such as ChemDraw<sup>®</sup> to draw complex chemical structures. You should always use such programs and then export your drawings to the PDF format to be included in your L<sup>A</sup>T<sub>E</sub>X document as described in section 4.5.

## 5 Managing references with BIB<sub>T</sub>E<sub>X</sub>

### 5.1 The BIB<sub>T</sub>E<sub>X</sub> style files

The Beilstein bundle includes a special BIB<sub>T</sub>E<sub>X</sub> style `bjnano.bst`, which implements all needed entry types and fields as well as format specifications of the *Beilstein Journal of Nanotechnology*. It is always used automatically by the Beilstein class. The exact structure of a suitable BIB<sub>T</sub>E<sub>X</sub> database for *Beilstein Journal of Nanotechnology* is described in section 5.2.

`\bibliography` To generate the section “References” containing all information from the BIB<sub>T</sub>E<sub>X</sub> database for all citations, the command `\bibliography{<database>}` is to be used just before `\end{document}`.

### 5.2 Structure of a BIB<sub>T</sub>E<sub>X</sub> database

The BIB<sub>T</sub>E<sub>X</sub> programming language knows the most common entry types cited in academic papers. However, a few such as “WWW” for internet resources and links or “SOFTWARE” are missing. They could be emulated, but it is much better to directly introduce them to BIB<sub>T</sub>E<sub>X</sub>. The same is valid for special data fields.

Not all entry types and fields that are included in BIB<sub>T</sub>E<sub>X</sub> are needed and allowed in *Beilstein Journal of Nanotechnology* submissions. They could even lead to erroneous output when not treated correctly. Therefore the entry types are restricted to the following:

- @ARTICLE
- @BOOK
- @INCOLLECTION
- @INPRESS
- @INPROCEEDINGS
- @MISC
- @PATENT
- @PHDTHESIS
- @PROCEEDINGS
- @SOFTWARE
- @WWW

In addition to the well-known data fields the following data fields were added:

**doi** Digital Object Identifier, e.g.,

```
doi = {10.1080/02678290500291699}
      (optional for all references)
```

**url** URL for any internet source, e.g.,

```
url = {https://www.beilstein-journals.org/bjnano}
      (mandatory for @WWW)
```

**urldate** Date when the url was visited last, e.g.,

```
urldate = {Sep 12, 2007}
          (mandatory for @WWW)
```

**venue** Information about a conference (place and time), e.g.,

venue = {Baltimore, MD, June 27--30, 1996}

(optional for @PROCEEDINGS and @INPROCEEDINGS)

**version** Version of a software, e.g., version = {Revision C.02}

(mandatory for @SOFTWARE)

The Beilstein bundle contains the file “beilstein-template.bib” with example entries for all types of references described in [1].

## References

- [1] *Beilstein Journal of Nanotechnology* Instructions for Authors. <https://www.beilstein-journals.org/bjnano/authorInstructions>
- [2] *David Carlisle*: The `tabularx` package, v2.11 (2016-02-03), <https://ctan.org/pkg/tabularx>.

## Appendix

### Deactivated macros

A few macros were “deactivated”, i.e., their usage results in an error. Right now this is valid for the standard commands listed in Table 7.

Table 7: Forbidden macros.

| Macro   | Alternative   |
|---|---|
| <code>\and</code>                                 | Use <code>\author</code> and <code>\author*</code> for every author |
| <code>\footnote{\langle text \rangle}</code>      | None <sup>a</sup>   |
| <code>\thanks{\langle affiliation \rangle}</code> | Use <code>\affiliation{\langle affiliation \rangle}</code>          |

<sup>a</sup>`\footnote` remains active in the `table` environment.

### List of package files

| File name                  | Version  |
|----------------------------|--|
| <code>beilstein.cls</code> | 2020/02/11 v2.0 Template for submissions to the “Beilstein Journal of Nanotechnology” (BJNANO) |
| <code>xkeyval.sty</code>   | 2014/12/03 v2.7a package option processing (HA)  |
| <code>xkeyval.tex</code>   | 2014/12/03 v2.7a key=value parser (HA)   |
| <code>ifthen.sty</code>    | 2014/09/29 v1.1c Standard LaTeX ifthen package (DPC)   |
| <code>article.cls</code>   | 2019/10/25 v1.4k Standard LaTeX document class   |
| <code>size12.clo</code>    | 2019/10/25 v1.4k Standard LaTeX file (size option)   |
| <code>babel.sty</code>     | 2020/01/15 3.38 The Babel package  |
| <code>bblopts.cfg</code>   | 2005/09/08 v0.1 add Arabic and Farsi to "declared" options of babel                            |
| <code>american.ldf</code>  | 2017/06/06 v3.3r English support from the babel system   |
| <code>inputenc.sty</code>  | 2018/08/11 v1.3c Input encoding file   |
| <code>fontenc.sty</code>   |  |
| <code>t1enc.def</code>     | 2018/08/11 v2.0j Standard LaTeX file   |
| <code>textcomp.sty</code>  | 2018/08/11 v2.0j Standard LaTeX package  |
| <code>ts1enc.def</code>    | 2001/06/05 v3.0e (jk/car/fm) Standard LaTeX file   |
| <code>ts1enc.dfu</code>    | 2019/07/11 v1.2j UTF-8 support for inputenc  |
| <code>tgheros.sty</code>   | 2009/09/27 v1.2 TeX Gyre Heros as default sans serif family                                    |
| <code>kvoptions.sty</code> | 2019/11/29 v3.13 Key value format for package options (HO)                                     |
| <code>ltxcmds.sty</code>   | 2019/12/15 v1.24 LaTeX kernel commands for general use (HO)                                    |
| <code>kvsetkeys.sty</code> | 2019/12/15 v1.18 Key value parser (HO)   |
| <code>amsmath.sty</code>   | 2019/11/16 v2.17d AMS math features  |
| <code>amstext.sty</code>   | 2000/06/29 v2.01 AMS text  |

*Continued on next page*



| File name     | Version   |
|---------------|---|
| amsgen.sty    | 1999/11/30 v2.0 generic functions   |
| amsbsy.sty    | 1999/11/29 v1.2d Bold Symbols   |
| amsopn.sty    | 2016/03/08 v2.02 operator names   |
| amssymb.sty   | 2013/01/14 v3.01 AMS font symbols   |
| amsfonts.sty  | 2013/01/14 v3.01 Basic AMSFonts support                                     |
| newtxtext.sty | 2018/03/27 v1.531   |
| fontaxes.sty  | 2014/03/23 v1.0d Font selection axes  |
| etoolbox.sty  | 2019/09/21 v2.5h e-TeX tools for LaTeX (JAW)                                |
| mweights.sty  | 2017/03/30 (Bob Tennent) Support package for multiple-weight font packages. |
| fontenc.sty   |   |
| t1enc.def     | 2018/08/11 v2.0j Standard LaTeX file  |
| newtxtt.sty   | 2014/12/23 v1.051   |
| newtxmath.sty | 2020/01/11 v1.623   |
| ifxetex.sty   | 2019/10/25 v0.7 ifxetex legacy package. Use iftex instead.                  |
| iftex.sty     | 2019/11/07 v1.0c TeX engine tests   |
| ifluatex.sty  | 2019/10/25 v1.5 ifluatex legacy package. Use iftex instead.                 |
| centernot.sty | 2016/05/16 v1.4 Centers the not symbol horizontally (HO)                    |
| binhex.tex    |   |
| geometry.sty  | 2020/01/02 v5.9 Page Geometry   |
| ifvtex.sty    | 2019/10/25 v1.7 ifvtex legacy package. Use iftex instead.                   |
| geometry.cfg  |   |
| setspace.sty  | 2011/12/19 v6.7a set line spacing   |
| ragged2e.sty  | 2019/07/28 v2.2 ragged2e Package (MS)                                       |
| everysel.sty  | 2011/10/28 v1.2 EverySelectfont Package (MS)                                |
| footmisc.sty  | 2011/06/06 v5.5b a miscellany of footnote facilities                        |
| lineno.sty    | 2005/11/02 line numbers on paragraphs v4.41                                 |
| multicol.sty  | 2019/03/01 v1.8w multicolumn formatting (FMi)                               |
| float.sty     | 2001/11/08 v1.3d Float enhancements (AL)                                    |
| flafter.sty   | 2018/11/28 v1.4d Standard LaTeX floats after reference (FMi)                |
| graphicx.sty  | 2017/06/01 v1.1a Enhanced LaTeX Graphics (DPC,SPQR)                         |
| graphics.sty  | 2019/11/01 v1.3d Standard LaTeX Graphics (DPC,SPQR)                         |
| trig.sty      | 2016/01/03 v1.10 sin cos tan (DPC)  |
| graphics.cfg  | 2016/06/04 v1.11 sample graphics configuration                              |
| pdftex.def    | 2018/01/08 v1.0l Graphics/color driver for pdftex                           |
| array.sty     | 2019/08/31 v2.4l Tabular extension package (FMi)                            |
| tabularx.sty  | 2016/02/03 v2.11b ‘tabularx’ package (DPC)                                  |
| longtable.sty | 2019/02/06 v4.12 Multi-page Table package (DPC)                             |
| natbib.sty    | 2010/09/13 8.31b (PWD, AO)  |
| url.sty       | 2013/09/16 ver 3.4 Verb mode for urls, etc.                                 |
| xspace.sty    | 2014/10/28 v1.13 Space after command names (DPC,MH)                         |

*Continued on next page*

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| File name         | Version  |
|-------------------|--|
| t1ntxtlf.fd       | 2015/01/17 v1.0 font definition file for T1/ntx/tlf          |
| cleveref.sty      | 2018/03/27 v0.21.4 Intelligent cross-referencing             |
| omlntxmi.fd       | 2015/08/25 Fontinst v1.933 font definitions for OML/ntxmi.   |
| untxexa.fd        | 2012/04/16 Fontinst v1.933 font definitions for U/ntxexa.    |
| tslcmr.fd         | 2014/09/29 v2.5h Standard LaTeX font definitions             |
| lmsntxsy.fd       | 2016/07/02 Fontinst v1.933 font definitions for LMS/ntxsy.   |
| lmxntxexx.fd      | 2016/07/03 Fontinst v1.933 font definitions for LMX/ntxexx.  |
| supp-pdf.mkii     |  |
| epstopdf-base.sty | 2019-12-09 v2.10 Base part for package epstopdf              |
| infwarerr.sty     | 2019/12/03 v1.5 Providing info/warning/error messages (HO)   |
| grfext.sty        | 2019/12/03 v1.3 Manage graphics extensions (HO)              |
| kvdefinekeys.sty  | 2019-12-19 v1.6 Define keys (HO)                             |
| pdftexcmds.sty    | 2019/11/24 v0.31 Utility functions of pdfTeX for LuaTeX (HO) |
| t1qhv.fd          | 2009/09/25 v1.2 font definition file for T1/qhv              |
| ot1ntxtlf.fd      | 2015/01/17 v1.0 font definition file for OT1/ntx/tlf         |
| umsa.fd           | 2013/01/14 v3.01 AMS symbols A                               |
| umsb.fd           | 2013/01/14 v3.01 AMS symbols B                               |
| untxmia.fd        | 2018/04/14 Fontinst v1.933 font definitions for U/ntxmia.    |
| untxsym.fd        | 2015/03/20 Fontinst v1.933 font definitions for U/ntxsym.    |
| untxsyc.fd        | 2012/04/12 Fontinst v1.933 font definitions for U/ntxsyc.    |

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## Change History

|      |  |   |  |   |   |
|------|--|---|--|---|---|
| v1.0 | General: Release on start of<br>BJNANO public website . . .  | 1 | v1.4   | General: Add new manuscript<br>type <code>suppinfo</code> . . . . . | 1 |
| v1.1 | General: Page number bug fix . .   | 1 | v1.5   | General: Add new environment<br><code>funding</code> . . . . .      | 1 |
| v1.2 | General: All files converted to<br>UTF-8 . . . . .   | 1 | Update documentation . . . . .   | 1   |   |
|      | Fix for <code>@misc</code> bib entries . . . .   | 1 | v2.0   | General: Add support for doi in<br><code>@www</code> . . . . .      | 1 |
|      | Fix for recent babel versions . .  | 1 | CODEN strings were removed<br>from the BiBTeX style file . .   | 1   |   |
|      | Fix for the declaration of <code>\-</code><br>as a robust command. There<br>is a conflict between package<br><code>bpchem</code> and the latest L <sup>A</sup> T <sub>E</sub> X<br>release . . . . . | 1 | New font scheme: <code>newtxtext</code> ,<br><code>newtxtt</code> and <code>newtxmath</code> . . . . | 1   |   |
| v1.3 | General: Fix: Loading of <code>cleveref</code><br>is postponed to the very end<br>of the preamble in order to<br>avoid problems with <code>hyperref</code>   | 1 | Update documentation . . . . .   | 1   |   |
|      |  |   | <code>utf8</code> is now the standard<br>encoding for <code>inputenc</code> . . . . .                | 1   |   |
|      |  |   | v2.1   | General: Bugfix for <code>bjnano.bst</code> . .                     | 1 |