The achemso package — A BibTeX style for American Chemical Society publications*

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Abstract

The `achemso` package provides a BibTeX style in accordance with the requirements of the journals of the American Chemical Society, along with a supporting LaTeX package file. Also provided is a BibTeX style file to be used for bibliography database listings.

1 Introduction

Although synthetic chemists do not, in the main, use LaTeX for the preparation of journal articles, it would be nice to be able to use it for reports. Some (mainly) physical chemistry journals do also accept LaTeX submissions, and so the need for BibTeX styles for chemistry is real. The package `achemso` provides for a BibTeX style and other support for articles and reports in the style of the American Chemical Society (A.C.S.). Journals which use the standard A.C.S. citation style are summarised in Table 1.

This package consists of two BibTeX files (`achemso.bst` and `achemsol.bst`) along with a small LaTeX file `achemso.sty`. The naming of the package is slightly unusual, but follows from the need to pick a unique name. To quote the documentation to the first version:

> [...] there is already a LaTeX 2.09 and BibTeX style package called `acsarticle` and `acs.bst`, which are not "ACS" as in 'American Chemical Society' (rather, this package is formatting the output according to the instructions of *Advances in Control Systems*). Hence, *this* new package had to be given another name. The name of choice was then `achemso`, which is made from the words "*A*merican *Chem*ical *So*ciety".

1.1 Change of maintainer

This package was initially released by Mats Dahlgren. He no longer has time to devote to LaTeX development. With his permission, the package has therefore been taken over by Joseph Wright, the maintainer of the the `rsc` package. The majority of the package has been rebuilt and the BibTeX style file has been totally overhauled. Any mistakes are entirely the fault of the new maintainer!

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Journal Title	Abbreviation
Journal of the American Chemical Society	*J. Am. Chem. Soc.*
Accounts of Chemical Research	*Acc. Chem. Res.*
Chemical Reviews	*Chem. Rev.*
Inorganic Chemistry	*Inorg.Chem.*
Journal of Medicinal Chemistry	*J. Med. Chem.*
Journal of Organic Chemistry	*J. Org. Chem.*
Journal of Physical Chemistry A	*J. Phys. Chem. A*
Journal of Physical Chemistry B	*J. Phys. Chem. B*
Journal of Physical Chemistry C	*J. Phys. Chem. C*
Langmuir	*Langmuir*
Macromolecules	*Macromolecules*
Nano Letters	*Nano Lett.*
Organic Letters	*Org. Lett.*
Organometallics	*Organometallics*

Table 1 Journals using the A.C.S. citation style

2 The BibTeX style files

The BibTeX style files implement the bibliographic style specified by the A.C.S. in *The ACS Style Guide: A Manual for Authors and Editors*, on the A.C.S. website (`http://pubs.acs.org/books/references.shtml`) and in current A.C.S. publications. Some of this information can be contradictory; the consensus of current practice in the printed journals has been taken as the correct approach.

2.1 Additional record types

In general, the database record types supported here follow those in the standard BibTeX style files. Four additional record types are provided:

`patent` A patent: formatting is similar to other record types. The data entry for this record type follows the pattern used in `rsc.bst`: `journal` is used to hold the patent type (*e.g.* "U.S. Pat."), with the patent number given in `pages`. Whilst this format is non-standard, it is relatively easy to use and implement!

`submitted` Articles submitted to journals but not yet accepted: appends "submitted" in a suitable fashion to the entry.

`inpress` Articles in press: appends "in press" or, if available, the DOI number assigned to the article.

`remark` A note with no other information to be included. Output consists purely of the `note` field.

2.2 BibTeX database entry requirements

The requirements for entries in the BibTeX database are slightly different using `achemso.bst` to the standard style files. This is mainly because some fields are

not cited in A.C.S. bibliographies. In particular, journal articles do not require a title (as the `title` field is ignored). Articles in books only need the title of the book; the title of the subunit (given in `title`) is again ignored.

2.3 The annotate field

The standard BibTeX styles use the `note` field for notes to be added to the citation. However, it is common to want personal notes about references. This is catered for using the `annotate` field. The style `achemso` ignores the `annotate` field, whilst the `achemsol` style appends the `annotate` information to the bibliographic output. Thus `achemsol` is intended for use in database maintenance, whilst `achemso` is for production bibliographies.

`\refin` For use in the `annotate` field the macro `\refin` is defined in `achemso.bst` and `achemsol.bst`. The command takes a single argument `{`⟨*text*⟩`}`, and gives the output **Referenced in: text**. This command takes one argument (normally text) which is preceded by the text "**Referenced in:** ⟨*text*⟩". The `\refin` command is intended for tracking citations "backward" through the database. For example, this could be used to link citations in a database to the writers own papers.

2.4 Predefined journal abbreviations

A number of journal abbreviations are defined in the `.bst` files. The abbreviations cover a number A.C.S. journals, several other physical chemistry publications and other journals listed as highly cited by *Chem. Abs.* The interested user should consult the `.bst` files for full details.

3 The LaTeX Package

The current version of `achemso.sty` is a complete re-implementation of the functionality of the original file, designed to ensure greater compatibility with other packages. The only change for the user is that the bibliography section does *not* start a new page when using the `article` document class. However, the package now supports all of the standard classes, and so the `report` class may be used to ensure a new page is started.

`\bibliographystyle` Loading the `achemso` package adds the appropriate `\bibliographystyle` command to the LaTeX source. As a result, subsequent `\bibliographystyle` statements will be ignored: a suitable warning is given. The format of citations is altered (using the `cite` package), and the package ensures that the bibliography will be named "References" in all standard document types.[1]

The `achemso` package has three options: `note`, `list`, and `number`:

`note` If the bibliography contains notes as well as citations, then the section heading should be "References and Notes". This is altered by the `note` package option.

`number` This option numbers the bibliography section (using the `tocbibind` package), and causes it to be entered in the Table of Contents.

[1] This only works if the `babel` package is *not* loaded.

`list` This option is intended for creating a listing of the entire BibTeX database. The BibTeX style is changed to `achemsol`, which will output the additional database field `annotate`, intended for personal notes about a particular database entry. It also adds the BibTeX key for each citation as a marginal note to the output, using the `showkeys` package.

4 The Package Code

The package code is not very complicated. For the interested reader(s), it is presented here.

`\ACSver` An identifying macro is provided, so that other packages can detect the version of achemso in use.

```
⟨*package⟩
\def\ACSver{\texttt{achemso} v2.0 (2007/01/17)}
```

`\ACS@sctnnmbr` `\ACS@lst` `\ACS@note` Three Boolean values are used to handle the options.

```
\newif \ifACS@sctnnmbr \ACS@sctnnmbrfalse
\newif \ifACS@lst      \ACS@lstfalse
\newif \ifACS@note     \ACS@notefalse
```

The options are processed, and the `cite` package is loaded to sort and compress references correctly. The ACS also have no gaps in between reference numbers, so the `nospace` option is used.

```
\DeclareOption{note}{\global\ACS@notetrue}
\DeclareOption{number}{\global\ACS@sctnnmbrtrue}
\DeclareOption{list}{\global\ACS@lsttrue}
\DeclareOption*{\OptionNotUsed}
\ProcessOptions
\RequirePackage[super,nospace]{cite}
```

If the `babel` package is loaded, the `note` option does not work. So it is disabled here with a suitable warning.

```
\@ifpackageloaded{babel}
 {\ACS@notefalse\PackageWarning{achemso}%
   {babel package loaded - note option disabled}}
 {\relax}
```

`\ACS@biberror` The function `\ACS@biberror` is defined here to provide an easy way of generating a warning if there is no name for a bibliography section. This will only happen with non-standard class files.

```
\def\ACS@biberror{\PackageError{achemso}%
  {No bibliography name command defined}\@eha}
```

`\refname` `\bibname` The `note` option renames the references section to "References and Notes". This applies for all standard document classes. The term "Bibliography" is not used in chemistry, the value of `\bibname` is redefined here in all cases where it exists.

```
\ifx\refname\undefined
  \ifx\bibname\undefined
    \ACS@biberror
   \else
    \ifACS@note
```

```
        \renewcommand*{\bibname}{References and Notes}
      \else
        \renewcommand*{\bibname}{References}
      \fi
    \fi
\else
  \ifACS@note
    \renewcommand*{\refname}{References and Notes}
  \fi
\fi
```

If the `number` option is set, the `tocbibind` package is used to number the bibliography.

```
\ifACS@sctnnmbr
  \RequirePackage[numbib]{tocbibind}
\fi
```

`\bibliographystyle` Depending on the package option, the bibliography style will either be `achemso` or `achemsol`. The later is intended for listing the entire database. The `list` option of the package selects this, and for listing also generates boxed labels for each reference. The `showkeys` package provides this functionality.

```
\ifACS@lst
  \bibliographystyle{achemsol}
  \RequirePackage[notcite]{showkeys}
\else
  \bibliographystyle{achemso}
\fi
```

`\@biblabel` In order to re-format the bibliography labels, the easiest method is to redefine the `\@biblabel` macro from the LaTeX kernel.

```
\def\@biblabel#1{#1.}
```

`\ACS@bibwarning` `\bibliographystyle` To ensure that additional `\bibliographystyle` commands in the source are killed off. The `\ACS@bibwarning` provides a clean method of generating the warning message.

```
\def\ACS@bibwarning{\PackageWarning{achemso}%
  {Additional bibliographystyle command ignored}}
\def\bibliographystyle{\ACS@bibwarning\@gobble}
```

The package is complete.

```
⟨/package⟩
```

Change History

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.