

# achemso — Support for submissions to American Chemical Society journals\*

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## Abstract

The achemso bundle provides a L<sup>A</sup>T<sub>E</sub>X class file and B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> style file in accordance with the requirements of the American Chemical Society (ACS). The files can be used for any documents, but have been carefully designed and tested to be suitable for submission to ACS journals.

The bundle also includes the natmove package. This package is loaded by achemso, and provides automatic moving of superscript citations after punctuation.

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## 1 Introduction

Support for B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> bibliography following the requirements of the American Chemical Society (ACS), along with a package to make these easy to have been available since version one of achemso. The re-write from version 1 to version 2 made a number of improvements to the package, and also added a number

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\*This file describes version v3.1od, last revised 2016/06/17.

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of new features. However, neither version one nor version two of the package was targeted directly at use for submissions to ACS journals. This new release of `achemso` addresses this issue.

The bundle consists of four parts. The first is a  $\text{\LaTeX} 2\epsilon$  class, intended for use in submissions. It is based on the standard `article` class, but makes various changes to facilitate ease of use. The second part is the  $\text{\LaTeX}$  package. The package contains the parts of the bundle which are appropriate for use with other document classes.<sup>1</sup> Thirdly, two  $\text{\BIBTeX}$  style files are included. These are used by both the class and the package, but can be used directly if desired. Finally, an example document is included; this is intended to act a potential template for submission, and illustrates the use of the class file.

## 2 Installation

The package is supplied in `dtx` format and as a pre-extracted zip file, `achemso.tds.zip`. The later is most convenient for most users: simply unzip this in your local `texmf` directory and run `texhash` to update the database of file locations. If you want to unpack the `dtx` yourself, running `tex achemso.dtx` will extract the package whereas `latex achemso.dtx` will extract it and also typeset the documentation.

Typesetting the documentation requires a number of packages in addition to those needed to use the package. This is mainly because of the number of demonstration items included in the text. To compile the documentation without error, you will need the packages:

- `array`
- `booktabs`
- `hypdoc`
- `listings`
- `lmodern`
- `mathpazo`
- `microtype`

## 3 Requirements

The `achemso` class requires the following packages:

- `caption`
- `float`
- `geometry`
- `natbib`

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<sup>1</sup>For example, when writing a thesis.

- `setspace`
- `xkeyval`

These are normally present in the current major TeX distributions, but are also available from [The Comprehensive TeX Archive Network](#).

## 4 The class file

The class file has been designed for use in submitting journals to the ACS. It uses all of the modifications described here (those in the package as well as those in the class). The accompanying example manuscript can be used as a template for the correct use of the class file. It is intended to act as a model for submission.

When submitting communications to *J. Am. Chem. Soc.*, the class will automatically lay the document out in the publication style. This allows the author to judge the length of text submitted more accurately. Changing the `manuscript` in the demonstration document to `communication` will illustrate the effect.

### 4.1 Class options

`journal` The class supports a limited number of options, which are specifically-targeted at submission. The class uses the `keyval` system for options, in the form `key=value`. The most important option is `journal`. This is the name of the target journal for the publication. The package is designed such that the choice of journal will set up the correct bibliography style and so on. The journals currently recognised by the package are summarised in Table 1. If an unknown journal is specified, the package will fall-back on the `journal=jacsat` option.

`manuscript` The second option is the `manuscript` option. This specifies the type of paper in the manuscript. The values here are `article`, `note`, `communication`, `review`, `letter` and `perspective`. The valid values will depend on the value of `journal`. The `manuscript` option determines whether sections and an abstract are valid. The value `supinfo` is also available for supporting information.

`layout` The `achemso` class can produce drafts in two layout styles. The standard setting for the `layout` option is `traditional`, which produces a double-spaced single column manuscript. The alternative setting `twocolumn` will use single spacing and print the text in two columns. The second option is obviously more compact. If the journal requires a particular style this option may be ignored.

`email` It may be desirable to omit e-mail addresses from the front page of a manuscript. The printing of e-mail addresses can be disabled using the `email` option, which takes Boolean values only. The default is to print e-mail addresses. Notice that phone and fax numbers are only printed if e-mail addresses are printed.

Other options are provided by the package, but when used with the class these are silently ignored. If you need to override the settings chosen by the class, include the settings *after* the `\documentclass` line using `\setkeys`:

```
\documentclass[journal = jacsat]{achemso}
\setkeys{acs}{articletitle = true}
```

<i>Journal</i>	<i>Setting</i>	<i>Journal</i>	<i>Setting</i>
<i>ACS Appl. Mater. Interfaces</i>	aamick	<i>Environ. Sci. Technol.</i>	esthag
<i>ACS Chem. Biol.</i>	acbcct	<i>Ind. Eng. Chem. Res.</i>	iecred
<i>ACS Catal.</i>	accacs	<i>Inorg. Chem.</i>	inoraj
<i>ACS Central Sci.</i>	acscii	<i>J. Agric. Food Chem.</i>	jafcau
<i>ACS Omega</i>	acsodf	<i>J. Chem. Eng. Data</i>	jceaaax
<i>Acc. Chem. Res.</i>	achre4	<i>J. Chem. Ed.</i>	jceda8
<i>ACS Chem. Neurosci.</i>	acncdm	<i>J. Chem. Inf. Model.</i>	jcisd8
<i>ACS Combinatorial Sci.</i>	acsccc	<i>J. Chem. Theory Comput.</i>	jctcce
<i>ACS Energy Lett.</i>	aelccp	<i>J. Med. Chem.</i>	jmcmar
<i>ACS Macro Lett.</i>	amlccd	<i>J. Nat. Prod.</i>	jnprdf
<i>ACS Med. Chem. Lett.</i>	amclct	<i>J. Org. Chem.</i>	joceah
<i>ACS Nano</i>	ancac3	<i>J. Phys. Chem. A</i>	jpcafh
<i>ACS Photon.</i>	apchd5	<i>J. Phys. Chem. B</i>	jpcbdk
<i>ACS Sustainable Chem. Eng.</i>	ascecg	<i>J. Phys. Chem. C</i>	jpcck
<i>ACS Synth. Biol.</i>	asbcd6	<i>J. Phys. Chem. Lett.</i>	jpclcd
<i>Anal. Chem.</i>	ancham	<i>J. Proteome Res.</i>	jprobs
<i>Biochemistry</i>	bichaw	<i>J. Am. Chem. Soc.</i>	jacsat
<i>Bioconjugate Chem.</i>	bcches	<i>Langmuir</i>	langd5
<i>Biomacromolecules</i>	bomaf6	<i>Macromolecules</i>	mamobx
<i>Chem. Res. Toxicol.</i>	crtoec	<i>Mol. Pharm.</i>	mpohbp
<i>Chem. Rev.</i>	chreay	<i>Nano Lett.</i>	nalefd
<i>Chem. Mater.</i>	cmatex	<i>Org. Lett.</i>	orlef7
<i>Cryst. Growth Des.</i>	cgdefu	<i>Org. Proc. Res. Dev.</i>	oprdfk
<i>Energy Fuels</i>	enfuem	<i>Organometallics</i>	orgnd7
<i>Environ. Sci. Technol. Lett.</i>	estlcu		

Table 1: Values for journal option

## 4.2 Manuscript meta-data

\author  
\affiliation  
\alsoaffiliation  
\altaffiliation  
\email

Inspired by REV<sub>T</sub>E<sub>X</sub>, the `achemso` class alters the method for adding author information to the manuscript. Each author should be given as a separate `\author` command. These should be followed by an `\affiliation`, which applies to the preceding authors. The `\affiliation` macro takes an optional argument, for a short version of the affiliation.<sup>2</sup> At least one author should be followed by an `\email` macro, containing contact details. All authors with an e-mail address are automatically marked with a star. The example manuscript demonstrates the use of all of these macros. Notice that `\alsoaffiliation` is used when one (or more) authors work at multiple institutions, while `\altaffiliation` is intended for previous addresses (or other notes). Only `\affiliation` applies to multiple authors: both `\alsoaffiliation` and `\altaffiliation` are set on a per author basis.

```
\author{Author Person}
\author{Second Bloke}
\email{second.bloke@some.place}
\affiliation[University of Sometown]
  {University of Somewhere, Sometown, USA}
\altaffiliation
  {Previous address: Minute University, Nowhereville, USA}
\author{Indus Trialguy}
\email{i.trialguy@sponsor.co}
\affiliation[SponsoCo]
  {Research Department, SponsorCo, BigCity, USA}
\alsoaffiliation{University of Somewhere, Sometown, USA}
```

Repeated entries for `\affiliation` and `\alsoaffiliation` will result in only one address being printed in the address list and footnotes. Repeated `\altaffiliation` entries only produce a single footnote, and can therefore be used for entries such as

```
\author{First Coworker}
\altaffiliation{Contributed equally to this work}
\author{Second Coworker}
\altaffiliation{Contributed equally to this work}
```

if required.

\fax  
\phone

The class will recognise the optional information `\fax` and `\phone`, which will be printed along with the lead authors e-mail address. Note that this information is only used for authors who have an e-mail address supplied.

```
\author{Second Bloke}
\email{second.bloke@some.place}
\phone{+xxx (0)yyy zzzzzz}
\fax{+xxx (0)yyy wwwww}
\affiliation[University of Sometown]
  {University of Somewhere, Sometown, USA}
```

\and  
\thanks

The method used for setting the meta-data means that the normal `\and` and `\thanks` macros are not appropriate in the `pkgachemso` class. Both produce a warning if used.

\title

The `\title` macro is extended to accept an optional argument. This is

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<sup>2</sup>This will usually be the university or company name.

intended for a shortened version of the journal title suitable for running headers. Some journals require that authors supply this data: if it is needed then it will be printed in the appropriate place.

```
\title[Short running title]
      {Long title which would not fit in running headers}
```

The meta-data items should be given in the preamble to the L<sup>A</sup>T<sub>E</sub>X file, and no \maketitle macro is required in the document body. This is all handled by the class file directly. At least one author, affiliation and e-mail address must be specified.

### 4.3 Floats

scheme chart graph	The class defines three new floating environments: scheme, chart and graph. These can be used as expected to include graphical content. The placement of these new floats and the standard table and figure floats is altered to be "here" if possible. The contents of all floats is automatically horizontally centred on the page.
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### 4.4 Section headers

\SectionNumbersOff \SectionNumbersOn  \SectionsOff \SectionsOn \AbstractOff \AbstractOn	Some journals have no section numbering by default. This can be set up in the appropriate configuration file, but it may be that individual users need to change the decision. The macros \SectionNumbersOff and \SectionNumbersOn are therefore available: these should be given in the preamble.  More radically, the entire availability of sections can be turned on and off. This functionality is available to the user <i>via</i> the \SectionsOn and \SectionsOff macros, which again are preamble-only. Similar functions are available for the abstract: \AbstractOff and \AbstractOn.
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### 4.5 Special sections

acknowledgement suppinfo	The sections for acknowledgements and supporting information have dedicated environments available. These ensure that the section headings are generated, and that the text is sized correctly when using creating a Communication.
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```
\begin{acknowledgement}
  The authors thank A.N.~Other.
\end{acknowledgement}

\begin{suppinfo}
  Full characterization data for all new compounds.
\end{suppinfo}
```

tocentry	For generating an entry for the graphical table of content, required by some journals, the environment tocentry is available. This prints its content in an appropriately sized box on a separate page. In contrast to the rest of the manuscript, this section is intended to be "print ready" in appearance.
----------	--

```
\begin{tocentry}
  \includegraphics{toc-entry-graphic}
  Some text to explain the graphic.
\end{tocentry}
```

## 4.6 Miscellaneous commands

\latin

The command \latin is provided by the class to format Latin phrases such as "et al." Most ACS journals do not make these italic, but some (for example *ACS Nano*) do. By providing a command, the formatting is left flexible.

\doi

The bibliography style prints any doi values as the argument to the command \doi. The default definition will allow printing of special characters but does not create hyperlinks. A more sophisticated version of the command may be set up if `hyperref` is loaded, for example

```
\begin{tocentry}
  \newcommand{\doi}[1]{\href{http://dx.doi.org/#1}{\nolinkurl{#1}}}
\end{tocentry}
```

## 5 The package file

The `achemso` package is independent of the class file, and contains parts of the bundle useful outside of submission to the ACS.

### 5.1 Package options

As with the class options, the package uses the key-value method for option set up. These are used to control the output of citations and bibliographic data. The same options are used when creating journal configurations for the class: this is a task most users will not need to undertake!

super

The super option affects the handling of superscript reference markers. The option switches this behaviour on and off (and takes Boolean values: `super=true` and `super=false` are valid).

articletitle

The articletitle option is a Boolean, and sets whether the title of a paper referenced appears in the bibliography. The default is `articletitle=false` for the `achemso` style and `articletitle=true` for the `biochem` style.

doi

The boolean doi option is provided to allow a DOI (Digital Object Identifier) to be included for bibliography entries even where other identification such as page numbers is available. The standard setting is `false`: setting it to `true` will cause DOI numbers to be printed if available.

chaptertitle

The boolean chaptertitle option is provided to allow flexibility for the inclusion of chapter titles for book and related entries. The standard setting is `false`: setting it to `true` will cause chapter titles to be included.

etalmode

maxauthors

Many journals require that long lists of authors are shortened using 'et al.' in the references section. The behaviour of the `BIBTEX` styles in this regard is controlled by two options, `etalmode` and `maxauthors`. There are two possible ways to shorten a long list of authors. Some journals require that only the first author is given, followed by 'et al.': for this behaviour, set `etalmode=firstonly`:

Jones, A.N. et al.

On the other hand, some journals request that the list of authors is truncated after  $n$  authors. This is set up by the `etalmode=truncate` option:

Jones, A.N.; Bloggs, F.; Nobacon, D. et al.

In both cases, the maximum number of authors permitted before introducing ‘et al.’ is governed by the `maxauthors` option. This option recognises the sentinel value 0, which indicates that no shortening should occur at all.

#### `biblabel`

Redefining the formatting of the numbers used in the bibliography usually requires modifying internal L<sup>A</sup>T<sub>E</sub>X macros. The `biblabel` option makes these changes more accessible: valid values are `plain` (use the number only), `brackets` (surround the number in brackets) and `period` or `fullstop` (follow the number by a full stop/period).

#### `biochem` `biochemistry`

Most ACS journals use the same bibliography style, with the only variation being the inclusion of article titles. However, a small number of journals use a rather different style; the journal *Biochemistry* is probably the most prominent. The `biochemistry` or `biochem` option uses the style of *Biochemistry* for the bibliography, rather than the normal ACS style. For this style, the `articletitle=true` option is the default.<sup>3</sup>

## 5.2 Bibliography notes

#### `\bibnote` `\bibnotemark` `\bibnotetext`

`achemso` provides the `\bibnote` macro. This is intended for addition of notes to the bibliography (references). The macro accepts a single argument, which is transferred to the bibliography by BIBT<sub>E</sub>X. In analogy to `\footnote`, the macros `\bibnotemark` and `\bibnotetext` are available for dividing up the marker for a note from the text.

```
Some text \bibnote{This note text will be in the bibliography}.  
Some text?
```

The functionality for bibnotes in `achemso` is based on that in the `notes2bib` package. The `notes2bib` package can be loaded with the `achemso` package, and no clash will occur. With the class file, `notes2bib` will be ignored if requested, to prevent issues on submission to the ACS.

## 6 The BibT<sub>E</sub>X style files

`achemso` is supplied with two style files, `achemso.bst` and `biochem.bst`. The direct use of these without the `achemso` package file is not recommended, but is possible. The style files can be loaded in the usual way, with a `\bibliographystyle` command. The `natbib` package must be loaded by the L<sup>A</sup>T<sub>E</sub>X file concerned, if the `achemso` package is not in use.

The style files are designed to use the `mciteplus` package if it is available, but to work even if is not. When `mciteplus` is present, it is possible to automatically produce references of the form

- (5) (a) Arduengo, A. J., III; Dias, H. V. R.; Harlow, R. L.; Kline, M. *J. Am. Chem. Soc.* **1992**, *114*, 5530–5534; (b) Appelhans, L. N.; Zuccaccia, D.; Kovacevic, A.; Chianese, A. R.; Miecznikowski, J. R.; Macchioni, A.; Clot, E.; Eisenstein, O.; Crabtree, R. H. *J. Am. Chem. Soc.* **2005**, *127*, 16299–16311; (c) Arduengo, A. J., III; Gamper, S. F.; Calabrese, J. C.; Davidson, F. *J. Am. Chem. Soc.* **1994**, *116*, 4391–4394.

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<sup>3</sup>More accurately, the default built into the BIBT<sub>E</sub>X style file is to use article titles with the *Biochemistry* style.

as demonstrated in the example document. When `mciteplus` is not present, this functionality is not available but the style files will work normally.

The `BIBTEX` style files implement the bibliographic style specified by the ACS in *The ACS Style Guide*.<sup>7</sup> By default, article titles are not included in output using the `achemso bst` file, but are with the `biochem bst` file.

The style used by the ACS does not differentiate between `BIBTEX` `book`, `inbook`, `collection` and `incollection` entries. As a result, the appearance of these entry types depends on the fields available. Named subdivisions of a book (for example, chapters where each has a named author) should be given in the `title` field, with the title of the book itself in the `booktitle` field. The `chapter` field should be used for a chapter number, and is printed as part of the pagination.

One frequently asked question is why some people see an empty first item in their bibliography when using the `achemso` package or class. This is usually because they have downloaded the `LATEX` files and done a local installation without also updating the `BIBTEX` style. The two must be from the same version of `achemso`: they are designed to work together.

## 7 The `natmove` package

The `natmove` package does only one job. It brings the ability to move punctuation after citations, using code borrowed from the `cite` package. Both the `achemso` class and package load `natmove` automatically.

```
Some text \cite{Coghill2006} some more text.\\
Some text ending a sentence \cite{Coghill2006}.\.
Some text? some more text.
Some text ending a sentence.?
```

This is deactivated for other citation types.

```
Some text \citeyear{Coghill2006}.\\
Some text \citeauthor{Coghill2006}.\\
Some text \citemark{Coghill2006}.
Some text ?.
Some text ?.
Some text ? .
```

The package does nothing if the `super` option has not been given to `natbib`. This means that the source can be written without needing to decide where citations will appear, with the `super` option for `natbib` controlling the result.

\code{natmovechars}

One user macro is provided: `\natmovechars`. This contains the characters which are moved before superscript punctuation. The default contents is `,;::` and can be set using `\renewcommand*`:

```
\renewcommand*{\natmovechars}{.}
Some text?, more text.?
Some text \cite{Coghill2006},
more text \cite{Coghill2006}.
```

## 8 Implementation

A lot of the work done by the package is also needed by the class. Loading the package and the class makes load-order awkward. Instead, the two parts are

done in one place. Sandwiching the common code are two slices of dedicated material for the class and the package. Some of this is needed “early”, before the common material, whilst the rest is “late”.

## 8.1 Early class-only code

So that there is no confusion, the base class is loaded early.

```
1 /*class*/
2 \ProvidesClass{achemso}
3 [2016/06/17 v3.10d Submission to ACS journals]
4 \LoadClass[12pt,letter]{article}
```

\acs@warning The code for a warning is created so that it works for the package too.

```
5 \newcommand*\acs@warning{\ClassWarning{achemso}}
6 
```

## 8.2 Early package-only code

The package and the class should not both be loaded, as the two use the same internal macro names. On the other hand, if the class is not in use a reminder is printed to use it if possible.

```
7 /*package*/
8 \ProvidesPackage{achemso}
9 [2016/06/17 v3.10d Support for ACS journals]
10 \@ifclassloaded{achemso}{%
11   \PackageInfo{achemso}{%
12     You have already loaded the ‘achemso’ class:\MessageBreak
13     loading the package will abort%
14   }%
15   \endinput
16 }{%
17   \PackageInfo{achemso}{%
18     When writing a submission to an ACS journal, please\MessageBreak
19     use the achemso document class%
20   }%
21 }
```

\acs@warning The code for a warning is created so that it works for the class too.

```
22 \newcommand*\acs@warning{\PackageWarning{achemso}}
23 
```

## 8.3 Common code

\acs@ifundefined A non-expandable test for defined macros: does not add to the hash table.

```
24 /*package | class*/
25 \newcommand*\acs@ifundefined[1]{%
26   \begingroup\expandafter\expandafter\expandafter\endgroup
27   \expandafter\ifx\csname #1\endcsname\relax
28     \expandafter\@firstoftwo
29   \else
30     \expandafter\@secondoftwo
31   \fi
```

32 }

The first stage needed is to read the package options given. Although `xkeyval` was perhaps not the best choice, changing this now would be rather risky.

33 `\RequirePackage{xkeyval}`

`\acs@keyval@bool` A support macro for making Boolean options: the `xkeyval` version is only available in newer releases.

```
34 \newcommand*\acs@keyval@bool[2]{%
35   \acs@ifundefined{acs@#1#2}{%
36     \acs@warning{Unknown option '#2' for key #1}%
37   }{%
38     \@nameuse{acs@#1#2}%
39   }%
40 }
```

`\ifacs@abbreviations` These are all very trivial definitions: to avoid issues with older versions of `xkeyval` each definition is done directly.

```
41 \newif\ifacs@abbreviations
42 \newif\ifacs@articletitle
43 \newif\ifacs@biochem
44 \newif\ifacs@doi
45 \newif\ifacs@chaptertitle
46 \newif\ifacs@email
47 \newif\ifacs@hyperref
48 \newif\ifacs@keywords
49 \newif\ifacs@super
50 \define@key{acs}{abbreviations}[true]{%
51   \acs@keyval@bool{abbreviations}{#1}%
52 }
53 \define@key{acs}{articletitle}[true]{%
54   \acs@keyval@bool{articletitle}{#1}%
55 }
56 \define@key{acs}{biochem}[true]{%
57   \acs@keyval@bool{biochem}{#1}%
58 }
59 \define@key{acs}{doi}[true]{%
60   \acs@keyval@bool{doi}{#1}%
61 }
62 \define@key{acs}{chaptertitle}[true]{%
63   \acs@keyval@bool{chaptertitle}{#1}%
64 }
65 \define@key{acs}{email}[true]{%
66   \acs@keyval@bool{email}{#1}%
67 }
68 \define@key{acs}{hyperref}[true]{%
69   \acs@keyval@bool{hyperref}{#1}%
70 }
71 \define@key{acs}{keywords}[true]{%
72   \acs@keyval@bool{keywords}{#1}%
73 }
74 \define@key{acs}{super}[true]{%
75   \acs@keyval@bool{super}{#1}%
76 }
```

```

77 \define@key{acs}{usetitle}[true]{%
78   \acs@keyval@bool{articletitle}{#1}%
79 }

\acs@journal
\acs@layout
\acs@manuscript
\acs@maxauthors
Trivial again: done without using xkeyval for the same reasons as before.

80 \newcommand*\acs@journal{jacsat}
81 \newcommand*\acs@layout{traditional}
82 \newcommand*\acs@manuscript{article}
83 \newcommand*\acs@maxauthors{15}
84 \define@key{acs}{journal}{%
85   \def\acs@journal{#1}%
86 }
87 \define@key{acs}{layout}{%
88   \def\acs@layout{#1}%
89 }
90 \define@key{acs}{manuscript}{%
91   \def\acs@manuscript{#1}%
92 }
93 \define@key{acs}{maxauthors}{%
94   \def\acs@maxauthors{#1}%
95 }

\ifacs@etal@truncate
\acs@etal@firstronly
\acs@etal@truncate
The setup for the etalmode option is quite simple: just look for the appropriate
macros.

96 \newif\ifacs@etal@truncate
97 \define@key{acs}{etalmode}{%
98   \acs@ifundefined{acs@etal@#1}{%
99     \acs@warning{%
100       Unknown value '#1' for\MessageBreak etalmode option%
101     }%
102   }{%
103     \nameuse{acs@etal@#1}%
104   }%
105 }
106 \newcommand*\acs@etal@firstronly{\acs@etal@truncatefalse}
107 \newcommand*\acs@etal@truncate{\acs@etal@truncatetrue}

\acs@activate@biblabel
The biochemistry option is an alias for biochem. The biblabel option is a
choice, which is implemented using a csname search. The group here prevents
hash table pollution, whilst the xkeyval method is avoided as it is more complex
than it is worth!

108 \define@key{acs}{biochemistry}{%
109   \setkeys{acs}{biochem = #1}%
110 }
111 \define@key{acs}{biblabel}{%
112   \acs@ifundefined{acs@biblabel@#1}{%
113     \acs@warning{%
114       Unknown value '#1' for\MessageBreak biblabel option%
115     }%
116   }{%
117     \acs@activate@biblabel{\nameuse{acs@biblabel@#1}}%
118   }%
119 }

```

```

120 \newcommand*\acs@activate@biblabel{}
121 (*class)
122 \let\acs@activate@biblabel\AtEndOfClass
123 \AtEndOfClass{\let\acs@activate@biblabel\@firstofone}
124 (/class)
125 (*package)
126 \let\acs@activate@biblabel\AtEndOfPackage
127 \AtEndOfPackage{\let\acs@activate@biblabel\@firstofone}
128 (/package)

\acs@biblabel@brackets The macros to implement the idea above for biblabels.
\acs@biblabel@fullstop
\acs@biblabel@period
\acs@biblabel@plain
129 \newcommand*\acs@biblabel@brackets{\def\bibnumfmt##1{##1}}
130 \newcommand*\acs@biblabel@fullstop{\def\bibnumfmt##1{##1.}}
131 \newcommand*\acs@biblabel@period{\def\bibnumfmt##1{##1.}}
132 \newcommand*\acs@biblabel@plain{\def\bibnumfmt##1{##1} }

Set up some defaults.
133 \setkeys{acs}{%
134   email = true,
135   super = true
136 }

Loading some other packages depends on the options chosen, so they are processed now.
137 \ProcessOptionsX*<acs>

\acs@manuscript@communication For text comparisons.
\acs@manuscript@letter
\acs@manuscript@note
\acs@manuscript@review
\acs@manuscript@suppinfo
138 \newcommand*\acs@manuscript@communication{communication}
139 \newcommand*\acs@manuscript@letter{letter}
140 \newcommand*\acs@manuscript@note{note}
141 \newcommand*\acs@manuscript@review{review}
142 \newcommand*\acs@manuscript@suppinfo{suppinfo}

\acs@niib@create To avoid needing to load the notes2bib package, especially as the plan is to move that package to LATEX3 internal syntax, achemso provides a minimal version here. The first step is to create macros which will need a guard against notes2bib already having been loaded. To allow the package and class to behave differently these are actually applied later.
\thebibnote
\thebibnotemark
\thebibnotetext
\printbibnotes
143 \newcommand*\acs@niib@create{%
144   \@namedef{ver@notes2bib.sty}{%
145     2009/04/20 v1.6a Integrating notes into the bibliography (achemso
146     version)
147   }%
148   \@ifundefined{c@bibnote}{\newcounter{bibnote}}{%
149     \def\thebibnote{%
150       Note-\the\value{bibnote}%
151     }%
152     \DeclareRobustCommand*\bibnote[1][\thebibnote]{%
153       \stepcounter{bibnote}%
154       \def\acs@niib@after@text{\cite{##1}}%
155       \acs@niib@text{##1}%
156     }%
157     \DeclareRobustCommand*\bibnotemark[1][\thebibnote]{%
158       \stepcounter{bibnote}%
159     }%
160   }%
161 }
```

```

159     \cite{##1}%
160   }%
161 \DeclareRobustCommand*\bibnotetext[1][\thebibnote]{%
162   \let\acs@niib@after@text\relax
163   \acs@niib@text{##1}%
164 }%
165 \newcommand*\printbibnotes{%
166   \ifnum\the\value{bibnote}>\z@\relax
167     \nocite{achemso-control}%
168     \acs@bibliography{acs-\jobname}%
169   \fi
170 }%
171 }

```

\acs@niib@after@text After the text.

```
172 \newcommand*\acs@niib@after@text{}
```

\acs@niib@text The \acs@niib@text macro is the outer part of the writing system. It does not absorb the text of note, as without  $\varepsilon$ - $\text{\TeX}$  this is bad news. The same file is used for notes and the control entry for the bibliography style.

```

173 \newcommand*\acs@niib@text{%
174   \@bsphack
175   \if@filesw
176     \expandafter\acs@niib@write
177   \else
178     \expandafter\acs@niib@no@write
179   \fi
180 }
```

\acs@niib@write Writing verbatim without  $\varepsilon$ - $\text{\TeX}$ .

```

\acs@niib@write@aux@i 181 \newcommand*\acs@niib@write[1]{%
\acs@niib@write@aux@ii 182   \begingroup
183     \let\do\@makeother
184     \dospecials
185     \catcode`{\ 1\relax
186     \catcode`}\ 2\relax
187     \acs@niib@write@aux@i{##1}%
188 }
189 \newcommand*\acs@niib@write@aux@i[1]{%
190   \long\def\@tempa##1{%
191     \def\@tempa{##1}%
192     \@onelvel@sanitize\@tempa
193     \expandafter\endgroup
194     \expandafter\def\expandafter\@tempa\expandafter{\@tempa}%
195     \acs@niib@write@aux@ii{##1}%
196   }%
197   \catcode`\^\^M 10\relax
198   \tempa
199 }
200 \newcommand*\acs@niib@write@aux@ii[1]{%
201   \immediate\write\acs@bib@file{%
202     @Misc\string{##1,^\^J}%
203     \space\space note = \string{\@tempa\string},^\^J%
204     \string}^\^J%
```

```

205  }%
206  \@esphack
207  \acs@niib@after@text
208 }

\acs@niib@no@write If no files are to be written, a bit of tidying up.
209 \newcommand\acs@niib@no@write[2]{%
210   \@esphack
211   \acs@niib@after@text
212 }

\nmv@natbib@detect The functionality of notes2bib is combined with the standard \cite macro, to
\acs@nmv@activate give automatic note-like data in the bibliography.
\acs@autonote
213 \AtBeginDocument{%
214   \def\nmv@natbib@detect{%
215     \ifNAT@super
216       \expandafter\acs@nmv@activate
217     \else
218       \expandafter\acs@autonote
219     \fi
220   }
221 }
222 \newcommand*\acs@nmv@activate{%
223   \let\nmv@citex@\nat@citex
224   \let@\citex\nmv@citex
225   \let\nmv@cite\cite
226   \renewcommand*{\cite}[2][]{%
227     \nmv@ifmtarg{##1}{%
228       \nmv@citetrue
229       \nmv@cite{##2}%
230     }{%
231       \nocite{##2}%
232       \bibnote{Ref.\~\citem{##2}, ##1}%
233     }%
234   }%
235 }
236 \newcommand*\acs@autonote{%
237   \let\nmv@cite\cite
238   \renewcommand*{\cite}[2][]{%
239     \nmv@ifmtarg{##1}{%
240       \nmv@cite{##2}%
241     }{%
242       \nocite{##2}%
243       \bibnote{Ref.\~\citem{##2}, ##1}%
244     }%
245   }%
246 }

\acs@bib@file Some information or creating the control file for BIBTEX is set up.
\acs@bib@message
\acs@bib@name
247 \newwrite\acs@bib@file
248 \newcommand*\acs@bib@message{%
249   This is an auxiliary file used by the ‘achemso’ bundle.^^J%
250   This file may safely be deleted. It will be recreated as required.^^J%
251 }

```

```
252 \newcommand*\acs@bib@name{acs-\jobname.bib}
```

`\acs@bib@write` The control information for BIBTEX needs to be written to a special file. The main writing macro is quite simple. Actually writing the information is left to the code for `\bibliography`, so that this only happens if needed.

The `\bibliography` macro is now patched so that everything works correctly.

```
\bibliography 291 \AtBeginDocument{%
292   \let\acs@bibliography\bibliography
293   \def\bibliography{\acs@bibliography{\acs@jobname,\#1}%
294   \acs@bibliography{\acs@jobname,\#1}%
295 }%
296 }
```

`\latin` The journal *ACS Nano* formats Latin phrases differently from every other ACS journal: we provide a `\latin` command to cover this.

```

297 \AtBeginDocument{
298   \providecommand{\latin}{\begingroup\lccode`~=\`a\endgroup\@nameuse{#1}\#1}
299 }
300 
```

## 8.4 Late class-only code

Most of the power of the class is now created. First, a few options are reset so that any given by the user are effectively ignored.

```

301 /*class)
302 \setkeys{acs}{
303   abbreviations = false,
304   articletitle = false,
305   biblabel = brackets,
306   biochem = false,
307   doi = false,
308   etalmode = firstonly,
309   keywords = false,
310   maxauthors = 15,
311   super = true
312 }

```

When using the class, notes2bib is always emulated. Other standard support packages can now be loaded.

```

313 \acs@niib@create
314 \RequirePackage[margin=2.54cm]{geometry}
315 \RequirePackage{
316   caption,
317   float,
318   graphicx,
319   setspace,
320   url
321 }
322 \ifacs@hyperref
323   \expandafter\RequirePackage
324 \else
325   \expandafter\@gobble
326 \fi
327 {hyperref}
328 \AtBeginDocument{\doublespacing}

```

\title For the meta-data, the REV<sup>T</sup>E<sub>X</sub> bundle provides a good model for the commands to give the author. \gdef is used here to avoid any odd grouping issues.

```

\acs@title@short 329 \renewcommand*{\title}[2][]{%
330   \gdef\acs@title@short{\#1}%
331   \gdef\@title{\#2}%
332   \ifx\acs@title@short\@empty
333     \global\let\acs@title@short\@title
334   \fi
335 }
336 \onlypreamble\title

```

\acs@author@cnt achemso tracks the number authors, affiliations and alternative affiliations.

```

\acs@affil@cnt
\acs@affil@alt@cnt

```

```

337 \newcount\acs@author@cnt
338 \newcount\acs@affil@cnt
339 \newcount\acs@affil@alt@cnt

\acs@footnote@cnt Two counts for getting affiliation footnotes correct.
\acs@affil@marker@cnt
340 \newcount\acs@footnote@cnt
341 \newcount\acs@affil@marker@cnt

\author The author macro stores the current author details and sets the affiliation of the
author to the current one. Everything is \global so that there is no possibility of
begin trapped inside a group. The affiliation counter is always one behind, and
so it is locally incremented to keep the logic of the code clear elsewhere.
342 \def\author#1{%
343   \global\advance\acs@author@cnt\@ne\relax
344   \expandafter\gdef\csname @author@\@roman\acs@author@cnt\endcsname{#1}%
345   \begingroup
346     \advance\acs@affil@cnt\@ne
347     \expandafter\xdef\csname @author@affil@\@roman
348       \acs@author@cnt\endcsname
349     {\the\acs@affil@cnt}%
350   \endgroup
351 }
352 \onlypreamble\author

\and \thanks Neither \and nor \thanks are used by the document class.
\thanks
353 \def\and{%
354   \acs@warning{%
355     \string\and\space not used by the achemso class: please see
356     the\MessageBreak package documentation for details%
357   }%
358 }
359 \def\thanks{%
360   \acs@warning{%
361     \string\thanks\space not used by the achemso class: please see
362     the\MessageBreak the package documentation for details%
363   }%
364 }

\affiliation As with \author, everything is \global just in case. The system insists that
affiliations come after authors. Before anything is committed, a check is made
that the affiliation has not already been seen.
365 \newcommand*\affiliation[2] [\relax]{%
366   \ifnum\acs@author@cnt>\z@\relax
367     \acs@affil@ifdup{#2}{%
368       \acs@affil@swap{#2}%
369     }{%
370       \global\advance\acs@affil@cnt\@ne\relax
371       \expandafter\gdef\csname @address@\@roman\acs@affil@cnt\endcsname
372         {#2}%
373       \ifx\relax#1\relax
374         \expandafter\gdef\csname @affil@\@roman\acs@affil@cnt\endcsname
375           {#2}%
376       \else

```

```

377      \expandafter\gdef\csname @affil@\@roman\acs@affil@cnt\endcsname
378      {#1}%
379      \fi
380      }%
381      \else
382      \acs@warning{Affiliation with no author}%
383      \fi
384 }
385 \onlypreamble\affiliation

\acs@affil@ifdup A short test for two addresses being identical.
\acs@affil@ifdup@aux
386 \newcommand*\acs@affil@ifdup[1]{%
387   \begingroup
388   \def\@tempa{#1}%
389   \tempswafalse
390   \tempcnta\z@\relax
391   \acs@affil@ifdup@aux
392   \if@tempswa
393     \aftergroup\@firstoftwo
394   \else
395     \aftergroup\@secondoftwo
396   \fi
397   \endgroup
398 }
399 \newcommand*\acs@affil@ifdup@aux{%
400   \advance\tempcnta\@ne\relax
401   \expandafter\expandafter\expandafter\def\expandafter\expandafter\expandafter
402   \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter
403   {\csname @address@ \@roman\tempcnta\endcsname}%
404   \ifx\@tempa\@tempb
405     \expandafter\tempswatrue
406   \else
407     \ifnum\tempcnta<\acs@affil@cnt\relax
408       \expandafter\expandafter\expandafter\acs@affil@ifdup@aux
409     \fi
410   \fi
411 }

\acs@affil@swap If the affiliation has already been given, then all of the authors need to be checked
\acs@affil@swap@aux to make sure that the correct affiliation is used. First, the loop from above is used
to find the correct number for the duplicate.
412 \newcommand*\acs@affil@swap[1]{%
413   \begingroup
414   \def\@tempa{#1}%
415   \tempcnta\z@\relax
416   \tempcntb\z@\relax
417   \acs@affil@ifdup@aux
418   \advance\acs@affil@cnt\@ne\relax
419   \acs@affil@swap@aux
420   \endgroup
421 }
422 \newcommand*\acs@affil@swap@aux{%
423   \advance\tempcntb\@ne\relax
424   \expandafter\ifnum\csname @author@affil@ \@roman\tempcntb\endcsname

```

```

425     = \acs@affil@cnt\relax
426     \expandafter\xdef\csname @author@affil@\@roman\@tempcntb\endcsname{%
427         \the\@tempcnta
428     }%
429 \fi
430 \ifnum\@tempcntb<\acs@author@cnt\relax
431     \expandafter\acs@affil@swap@aux
432 \fi
433 }

```

\alsoaffiliation  
\acs@alsoaffil@find To allow complex affiliations , two commands are needed. The first deals with affiliations that are in some way shared by several authors. This is tracked on a per author basis.

```

434 \newcommand*\alsoaffiliation[2][\relax]{%
435     \ifnum\acs@author@cnt>\z@\relax
436         \acs@affil@ifdup{\#2}{%
437             \acs@alsoaffil@find{\#2}%
438         }%
439         \global\advance\acs@affil@cnt\@ne\relax
440         \atempcnta\acs@affil@cnt\relax
441         \expandafter\gdef\csname @address@\@roman\acs@affil@cnt\endcsname
442             {\#2}%
443         \ifx\relax\#1\relax
444             \expandafter\gdef\csname @affil@\@roman\acs@affil@cnt\endcsname
445                 {\#2}%
446         \else
447             \expandafter\gdef\csname @affil@\@roman\acs@affil@cnt\endcsname
448                 {\#1}%
449         \fi
450     }%
451     \@ifundefined{@author@alsoaffil@\@roman\acs@author@cnt}{%
452         \expandafter\xdef\csname @author@alsoaffil@\@roman\acs@author@cnt
453             \endcsname{\the\@tempcnta}%
454     }%
455     \expandafter\xdef\csname @author@alsoaffil@\@roman\acs@author@cnt
456         \endcsname{%
457             \csname @author@alsoaffil@\@roman\acs@author@cnt\endcsname
458             ,\the\@tempcnta
459         }%
460     }%
461     \else
462         \acs@warning{Affiliation with no author}%
463     \fi
464 }
465 \newcommand*\acs@alsoaffil@find[1]{%
466     \begingroup
467         \def\@tempa{\#1}%
468         \atempcnta\z@\relax
469         \atempcntb\z@\relax
470         \acs@affil@ifdup@aux
471         \expandafter\endgroup
472         \expandafter\@tempcnta\the\@tempcnta\relax
473 }

```

\altaffiliation For the alternative affiliation, a second count is kept, and the affiliation is “attached” to the author. The way these are stored means that the appropriate affiliation number can be recovered later, and so printed correctly when things get complex.

```

474 \newcommand*\altaffiliation[1]{%
475   \ifnum\acs@author@cnt>\z@\relax
476     \begingroup
477       \acs@altaffil@ifdup{\#1}{%
478         \expandafter\xdef\csname @author@altaffil@\@roman\acs@author@cnt
479           \endcsname{\the\@tempcpta}%
480       }{%
481         \global\advance\acs@affil@alt@cnt\@ne\relax
482         \expandafter\gdef\csname @altaffil@\@roman\acs@affil@alt@cnt
483           \endcsname{\#1}%
484         \expandafter\xdef\csname @author@altaffil@\@roman\acs@author@cnt
485           \endcsname{\the\acs@affil@alt@cnt}%
486       }%
487     \endgroup
488   \else
489     \acs@warning{Affiliation with no author}%
490   \fi
491 }
492 \onlypreamble\altaffiliation

```

\acs@altaffil@ifdup \acs@altaffil@ifdup@aux This is very similar to the same routine for normal affiliations but with the appropriate name changes.

```

493 \newcommand*\acs@altaffil@ifdup[1]{%
494   \def\@tempa{\#1}%
495   \iftempswafalse
496     \atempcpta\z@\relax
497   \ifnum\acs@affil@alt@cnt>\z@\relax
498     \expandafter\acs@altaffil@ifdup@aux
499   \fi
500   \if@tempswa
501     \expandafter\@firstoftwo
502   \else
503     \expandafter\@secondoftwo
504   \fi
505 }
506 \newcommand*\acs@altaffil@ifdup@aux{%
507   \advance\atempcpta\@ne\relax
508   \expandafter\expandafter\expandafter\def\expandafter\expandafter\expandafter
509     \expandafter\@tempb\expandafter\expandafter\expandafter\expandafter
510       {\csname @altaffil@\@roman\@tempcpta\endcsname}%
511   \ifx\@tempa\@tempb
512     \expandafter\@tempswatrue
513   \else
514     \ifnum\@tempcpta<\acs@affil@alt@cnt\relax
515       \expandafter\expandafter\expandafter\acs@altaffil@ifdup@aux
516     \fi
517   \fi
518 }

```

```

\email E-mail addresses are attached to authors as well.

519 \newcommand*\email[1]{%
520   \ifnum\acs@author@cnt>\z@\relax
521     \expandafter\gdef\csname@email@roman\acs@author@cnt\endcsname
522       {#1}%
523   \else
524     \acs@warning{E-mail with no author}%
525   \fi
526 }
527 \onlypreamble@email

\fax Fax and phone numbers are similar.

\phone \newcommand*\fax[1]{%
529   \ifnum\acs@author@cnt>\z@\relax
530     \expandafter\gdef\csname@fax@roman\acs@author@cnt\endcsname
531       {#1}%
532   \else
533     \acs@warning{Fax number with no author}%
534   \fi
535 }
536 \onlypreamble\fax
537 \newcommand*\phone[1]{%
538   \ifnum\acs@author@cnt>\z@\relax
539     \expandafter\gdef\csname@phone@roman\acs@author@cnt\endcsname
540       {#1}%
541   \else
542     \acs@warning{Phone number with no author}%
543   \fi
544 }
545 \onlypreamble\phone

\abbreviations Some journals use these.

\@abbreviations \newcommand*\abbreviations[1]{%
546   \gdef\@abbreviations{#1}%
547 }
548 }
549 \newcommand*\@abbreviations{}
550 \onlypreamble\abbreviations
551 \newcommand*\keywords[1]{%
552   \gdef\@keywords{#1}%
553 }
554 \newcommand*\@keywords{}
555 \onlypreamble\keywords

\acs@abbreviations@print For printing the key simple meta-data.

\acs@keywords@print \newcommand*\acs@abbreviations@print{%
556   \ifx\@abbreviations\empty\nothing
557   \else
558     \section*{Abbreviations}
559     \@abbreviations
560     \par
561   \fi
562 }
563 \newcommand*\acs@keywords@print{%
564   \ifx\@keywords\empty\nothing
565     \section*{Keywords}

```

```

566     \@keywords
567     \par
568     \fi
569 }
570 \newcommand*\acs@title@short@print{%
571   \section*{Running header}
572   \acs@title@short
573   \par
574 }

\acs@space@pre@title Lengths for \maketitle.
\acs@space@post@title 575 \newlength\acs@space@pre@title
\acs@space@post@author 576 \setlength\acs@space@pre@title{2em}
\acs@space@post@address 577 \newlength\acs@space@post@title
\acs@space@post@email 578 \setlength\acs@space@post@title{1.5em}
\acs@maketitle@width 579 \newlength\acs@space@post@author
580 \setlength\acs@space@post@author{1em}
581 \newlength\acs@space@post@address
582 \setlength\acs@space@post@address{1em}
583 \newlength\acs@space@post@email
584 \setlength\acs@space@post@email{1.5em}
585 \newlength\acs@maketitle@width
586 \setlength\acs@maketitle@width{\textwidth}

\affilsize Some simple size commands.
\authorsize 587 \newcommand*\affilsize{\normalsize}
\emailsize 588 \newcommand*\authorsize{\large}
\titlesize 589 \newcommand*\emailsize{\normalsize}
590 \newcommand*\titlesize{\LARGE}

\authorfont Font settings for \maketitle.
\authorfont 591 \newcommand*\affilfont{\itshape}
\emailfont 592 \newcommand*\authorfont{\sffamily}
\titlefont 593 \newcommand*\emailfont{}
594 \newcommand*\titlefont{\bfseries\sffamily}

\ps@acs A shortcut to make page styles.
595 \newcommand*\ps@acs{%
596   \let\ps@acs\ps@plain
}

\maketitle With the changes outlined above in place, a new \maketitle macro is needed.
\maketitle@title@hook This is partially a copy of the existing, but rather heavily modified.
597 \def\maketitle{%
598   \pagestyle{acs}%
599   \ifnum\acs@author@cnt<\z@\relax
600     \acs@warning{No authors defined: At least one author is required}%
601   \fi
602   \newpage
603   \null
604   \vspace*{\acs@space@pre@title}%
605   \begin{center}
606     \begin{minipage}{\acs@maketitle@width}
607       \begin{center}

```

```

608     {%
609         \titlefont
610         \titlesize
611         \let\@fnssymbol\acs@author@fnssymbol
612         \let\footnote\acs@title@footnote
613         \acs@maketitle@suppinfo \@title
614         \acs@title@footnote@check
615         \global\acs@footnote@cnt\c@footnote
616         \@maketitle@title@hook
617         \par
618     }%
619     \vspace*{\acs@space@post@title}%
620     {%
621         \authorsize
622         \authorfont
623         \frenchspacing
624         \acs@author@list
625         \par
626     }%
627     \vspace*{\acs@space@post@author}%
628     {%
629         \affilsize
630         \affilfont
631         \acs@address@list
632         \par
633     }%
634     \vspace*{\acs@space@post@address}%
635     {%
636         \emailsize
637         \emailfont
638         \ifacs@email
639             \expandafter\acs@contact@details
640             \fi
641         }%
642         \vspace*{\acs@space@post@email}%
643         \end{center}
644         \end{minipage}
645         \end{center}%
646     }
647 \newcommand*\@maketitle@title@hook{}
```

\acs@maketitle@suppinfo This is spun out so that it can be avoided if necessary: this is done on the sly.

```

648 \newcommand*\acs@maketitle@suppinfo{%
649   \ifx\acs@manuscript\acs@manuscript@suppinfo
650     Supporting information for:\\
651   \fi
652 }
```

\acs@title@footnote Footnotes need to be created so that they appear correctly.

```

653 \newcommand*\acs@title@footnote[1]{%
654   \footnotemark
655   \g@addto@macro\@thanks{\footnotetext{\#1}}%
656 }
657 \newcommand\acs@title@footnote@check{%
```

```

658 \ifx\@thanks\empty
659 \else
660   \begingroup
661     \toks@\expandafter{\@thanks}%
662     \xdef\@thanks{%
663       \begingroup
664         \let\noexpand\@fnsymbol\noexpand\acs@author\fnsymbol
665         \the\toks@
666       \endgroup
667     }%
668   \endgroup
669 \fi
670 }

```

\acs@contact@details A general contact details macro.

```

671 \newcommand*\acs@contact@details{%
672   { \sffamily E-mail: \acs@email@list }%
673   \acs@number@list
674 }

```

\@thanks The \@thanks macro is used as a hook to generate the footnotes if needed.  
`675 \let\@thanks\empty`

\acs@author@list Printing the author list needs to do several things. The appropriate separators between authors are created and the author names themselves are printed.

```

676 \newcommand*\acs@author@list{%
677   \tempcnta\z@\relax
678   \ifnum\acs@author@cnt=\z@\relax\else
679     \expandafter\acs@author@list@main
680   \fi
681 }

```

\acs@author@footnotes \acs@author@list@main The main control macro for producing the author list iterates over each author on the list. The result is stored as \acs@author@listing.

```

682 \newcommand*\acs@author@footnotes{}
683 \newcommand*\acs@author@list@main{%
684   \advance\tempcnta\@ne\relax
685   \def\acs@author@footnotes{}%
686   \acs@author@list@and
687   \space
688   \nameuse{@author@\roman{\tempcnta}}%
689   \acs@author@list@comma
690   \acs@author@star
691   \acs@author@affil
692   \acs@author@affil@also
693   \acs@author@affil@alt
694   \ifx\empty\acs@author@footnotes\else
695     \textsuperscript{\acs@author@footnotes}%
696   \fi
697   \ifnum\tempcnta<\acs@author@cnt\relax
698     \expandafter\acs@author@list@main
699   \fi
700 }

```

\acs@author@list@and  
\acs@author@list@comma

```

701 \newcommand*\acs@author@list@and{%
702   \ifnum\acs@author@cnt=\@ne\relax\else
703     \ifnum\@tempcpta=\acs@author@cnt\relax
704       \space and%
705     \fi
706   \fi
707 }
708 \newcommand*\acs@author@list@comma{%
709   \ifnum\acs@author@cnt>\tw@\relax
710     \ifnum\@tempcpta<\acs@author@cnt\relax
711       ,
712     \fi
713   \fi
714 }
```

\acs@author@star  
\acs@author@star@aux

```

715 \newcommand*\acs@author@star{%
716   \acs@ifundefined{@email@\@roman{\@tempcpta}}{}{%
717     \acs@author@star@aux
718   }%
719 }
720 \newcommand*\acs@author@star@aux{%
721   \protected@edef\acs@author@footnotes{%
722     \acs@author@fnsymbol{\z@}%
723     \ifnum\acs@affil@cnt>\@ne\relax
724       ,
725     \else
726       \ifnum\acs@affil@alt@cnt>\z@\relax
727         ,
728       \fi
729     \fi
730   }%
731 }
```

\acs@author@affil  
\acs@author@affil@aux

```

732 \newcommand*\acs@author@affil{%
733   \acs@ifundefined{%
734     @affil@\@roman\csname @author@affil@\@roman\@tempcpta\endcsname
735   }{%
736     \acs@warning{%
737       No affiliation given for author\MessageBreak
738       @nameuse{@author@\@roman{\@tempcpta}}%
739     }%
740   }{%
741     \acs@author@affil@aux
742   }%
743 }
744 \newcommand*\acs@author@affil@aux{%
745   \ifnum\acs@affil@cnt>\@ne\relax
746     \expandafter\acs@affil@marker@cnt\csname @author@affil@\@roman
747       \@tempcpta\endcsname\relax
748     \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax

```

```

749     \protected@edef\acs@author@footnotes{%
750         \acs@author@footnotes
751         \acs@author@fnsymbol{\acs@affil@marker@cnt}%
752     }%
753 \else
754     \ifnum\acs@affil@alt@cnt>\z@\relax
755         \acs@affil@marker@cnt\@ne\relax
756         \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax
757         \protected@edef\acs@author@footnotes{%
758             \acs@author@footnotes
759             \acs@author@fnsymbol{\acs@affil@marker@cnt}%
760         }%
761     \fi
762 \fi
763 }

```

\acs@author@affil@also The “also” affiliations are generated by a loop as there may be more than one.

```

764 \newcommand*\acs@author@affil@also{%
765     \acs@ifundefined{@author@alsoaffil@\roman{@tempcpta}}{%
766         \acs@author@affil@also@aux
767     }%
768 }%
769 \newcommand*\acs@author@affil@also@aux{%
770     \expandafter\@for\expandafter\@tempa\expandafter:\expandafter
771     =\csname @author@alsoaffil@\roman{@tempcpta}\endcsname\do{%
772         \acs@affil@marker@cnt\@tempa\relax
773         \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax
774         \protected@edef\acs@author@footnotes{%
775             \acs@author@footnotes
776             ,%
777             \acs@author@fnsymbol{\acs@affil@marker@cnt}%
778         }%
779     }%
780 }

```

\acs@author@affil@alt Alternative affiliations get the correct affiliation number back out from the stored data. There are then two corrections: one for the total number of main affiliations and a second in case there is a footnote to the title.

```

781 \newcommand*\acs@author@affil@alt{%
782     \acs@ifundefined{@author@altaffil@\roman{@tempcpta}}{%
783         \acs@author@affil@alt@aux
784     }%
785 }%
786 \newcommand*\acs@author@affil@alt@aux{%
787     \expandafter\acs@affil@marker@cnt
788     \csname @author@altaffil@\roman{@tempcpta}\endcsname\relax
789     \advance\acs@affil@marker@cnt\acs@affil@cnt\relax
790     \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax
791     \protected@edef\acs@author@footnotes{%
792         \acs@author@footnotes
793         ,%
794         \acs@author@fnsymbol{\acs@affil@marker@cnt}%
795     }%
796 }

```

`\acs@author@fnsymbol` The ACS have an extended list of symbols. The star appears at the special position zero.  
`\acs@author@fnsymbol@aux`  
`\acs@author@fnsymbol@loop`  
`\acs@author@fnsymbol@loop@aux@i`  
`\acs@author@fnsymbol@loop@aux@ii`  
`\acs@author@fnsymbol@loop@aux@m`  
`\acs@author@fnsymbol@loop@aux@Q`  
`\acs@author@fnsymbol@symbol`

```

797 \newcommand*{\acs@author@fnsymbol}[1]{%
798   \ensuremath{%
799     \expandafter\acs@author@fnsymbol@aux\expandafter{\number#1 }%
800   }%
801 }%
802 \newcommand*{\acs@author@fnsymbol@aux}[1]{%
803   \ifnum#1>10 %
804     \expandafter\acs@author@fnsymbol@loop
805   \else
806     \expandafter\acs@author@fnsymbol@symbol
807   \fi
808   {#1}%
809 }%
810 \newcommand*{\acs@author@fnsymbol@loop}[1]{%
811   \acs@author@fnsymbol@loop@aux@i#1%
812 }%
813 \newcommand*{\acs@author@fnsymbol@loop@aux@i}[2]{%
814   \acs@author@fnsymbol@symbol{\ifnum#2=0 10\else #2\fi}%
815   \expandafter\acs@author@fnsymbol@loop@aux@ii\romannumerals{#1000Q}%
816   {\acs@author@fnsymbol@symbol{\ifnum#2=0 10\else #2\fi}}%
817 }%
818 \newcommand*{\acs@author@fnsymbol@loop@aux@ii}[1]{%
819   \nameuse{\acs@author@fnsymbol@loop@aux@#1}%
820 }%
821 \def\acs@author@fnsymbol@loop@aux@m#1#2#3{%
822   \acs@author@fnsymbol@loop@aux@ii#1Q{#2#3}{#3}%
823 }%
824 \newcommand*{\acs@author@fnsymbol@loop@aux@Q}[2]{#1}%
825 \newcommand*{\acs@author@fnsymbol@symbol}[1]{%
826   \ifcase #1 *\or
827     \dagger\or
828     \ddagger\or
829     \text{P}\or
830     \text{S}\or
831     \text{V}\or
832     \text{bot}\or
833     \text{#\or}
834     \text{@}\or
835     \triangle\or
836     \nabla
837   \fi
838 }%

```

`\acs@address@list` Loop over the addresses and any extra affiliations and print them all: if there  
`\acs@address@list@auxi` is only one, omit the marker entirely. There is also a need to watch out for any  
`\acs@address@list@auxii` footnotes from the title.

```

839 \newcommand*\acs@address@list{%
840   \ifnum\acs@affil@cnt>z@
841     \expandafter\acs@address@list@auxi
842   \else
843     \acs@warning{No affiliations: at least one affiliation is needed}%
844   \fi

```

```

845 }
846 \newcommand*\acs@address@list@auxi{%
847   \ifnum0%
848     \ifnum\acs@affil@cnt>\@ne    1\fi
849     \ifnum\acs@affil@alt@cnt>\z@ 1\fi
850     >\z@
851     \expandafter\acs@address@list@auxii
852   \else
853     \@address@i\par
854   \fi
855 }
856 \newcommand*\acs@address@list@auxii{%
857   \tempcpta\z@
858   \acs@affil@marker@cnt\acs@footnote@cnt
859   \loop\ifnum\tempcpta<\acs@affil@cnt
860     \advance\tempcpta\@ne
861     \advance\acs@affil@marker@cnt\@ne
862     \acs@author@fnssymbol{\acs@affil@marker@cnt}%
863     \nameuse{\@address@i\@roman\tempcpta}\par
864   \repeat
865   \tempcpta\z@
866   \loop\ifnum\tempcpta<\acs@affil@cnt
867     \advance\tempcpta\@ne
868     \advance\acs@affil@marker@cnt\@ne
869     \acs@ifundefined{\altaffil@\@roman\tempcpta}
870     {}
871     {%
872       \acs@author@fnssymbol{\acs@affil@marker@cnt}%
873       \nameuse{\altaffil@\@roman\tempcpta}\par
874     }%
875   \repeat
876 }

```

\acs@fnssymbol@org      Footnotes are done in two stages. First the main affiliation is handled, then the  
 \acs@affil@list      possible alternative. There is a need to check for the possibility that there is only  
 \acs@affil@list@aux      one main affiliation but one or more alternative ones.

```

877 \newcommand*\acs@fnssymbol@org(){}
878 \newcommand*\acs@affil@list{%
879   \let\acs@fnssymbol@org\@fnssymbol
880   \let\@fnssymbol\acs@author@fnssymbol
881   \tempcpta\z@\relax
882   \tempcpta\z@\relax
883   \ifnum\acs@affil@cnt>\@ne\relax
884     \expandafter\acs@affil@list@aux
885   \else
886     \ifnum\acs@affil@alt@cnt>\z@\relax
887       \acs@affil@marker@cnt\@ne\relax
888       \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax
889       \footnotetext[\acs@affil@marker@cnt]{\@affil@i}%
890       \tempcpta\@ne\relax
891     \fi
892   \fi
893   \ifnum\acs@affil@alt@cnt>\z@\relax
894     \expandafter\acs@affil@alt@list

```

```

895   \fi
896   \let\@fnsymbol\acs@fnsymbol@org
897 }
898 \newcommand*\acs@affil@list@aux{%
899   \advance\@tempcnta\@ne\relax
900   \acs@affil@marker@cnt\@tempcnta\relax
901   \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax
902   \footnotetext[\acs@affil@marker@cnt]{%
903     \nameuse{@affil@\roman{\@tempcnta}}%
904   }%
905   \ifnum\@tempcnta<\acs@affil@cnt\relax
906     \expandafter\acs@affil@list@aux
907   \fi
908 }

```

\acs@affil@alt@list The secondary loop for alternative affiliations is similar.

```

\acs@affil@alt@list@aux
909 \newcommand*\acs@affil@alt@list{%
910   \advance\@tempcntb\@ne\relax
911   \acs@ifundefined{@altaffil@\roman{\@tempcntb}}{}{%
912     \acs@altaffil@foot@aux
913   }%
914   \ifnum\@tempcntb<\acs@author@cnt\relax
915     \expandafter\acs@affil@alt@list
916   \fi
917 }
918 \newcommand*\acs@altaffil@foot@aux{%
919   \advance\@tempcnta\@ne\relax
920   \acs@affil@marker@cnt\@tempcnta\relax
921   \advance\acs@affil@marker@cnt\acs@footnote@cnt\relax
922   \footnotetext[\acs@affil@marker@cnt]{%
923     \nameuse{@altaffil@\roman{\@tempcntb}}%
924   }%
925 }

```

\acs@email@list@font \acs@email@list \acs@email@list@aux The final piece of meta-data to print is the e-mail address list. The total number of e-mail addresses given it counted in \@tempcntb, which means a warning can be given if there are none. The group is used so that \UrlFont can be set correctly.

```

926 \newcommand*\acs@email@list@font{\sf}
927 \newcommand*\acs@email@list{%
928   \begingroup
929     \def\UrlFont{\acs@email@list@font}%
930     \@tempcnta\z@\relax
931     \@tempcntb\z@\relax
932     \acs@email@list@aux
933     \ifnum\@tempcntb=\z@\relax
934       \acs@warning{%
935         No e-mail given:\MessageBreak
936         at least one author must have a contact e-mail%
937       }%
938     \fi
939   \endgroup
940 }
941 \newcommand*\acs@email@list@aux{%

```

```

942 \advance\@tempcnta\@ne\relax
943 \ifnum\@tempcnta>\acs@author@cnt\relax\else
944   \acs@ifundefined{@email@\@roman\@tempcnta}{}{%
945     \advance\@tempcntb\@ne\relax
946     \ifnum\@tempcntb>\@ne\relax
947       ;
948     \fi
949     \expandafter\expandafter\expandafter\url\expandafter
950       \expandafter\expandafter{\%
951         \csname @email@\@roman\@tempcnta\endcsname
952       }%
953     }%
954     \expandafter\acs@email@list@aux
955   \fi
956 }

```

\acs@number@list Listing phone and fax numbers is easier as they don't have to be given. Everything is done in one block so that it is possible to know whether to add a new line and also to keep everything together.

```

957 \newcommand*\acs@number@list{%
958   \begingroup
959     \acs@number@list@aux@i{phone}%
960     \let\@tempb\@tempa
961     \acs@number@list@aux@i{fax}%
962     \ifx\@tempa\@empty
963       \let\@tempa\@tempb
964     \else
965       \ifx\@tempb\@empty\else
966         \protected@edef\@tempa{%
967           \@tempb.\space\@tempa
968         }%
969       \fi
970     \fi
971     \ifx\@tempa\@empty\else
972       \par
973       \@tempa
974     \fi
975   \endgroup
976 }
977 \newcommand*\acs@number@list@aux@i[1]{%
978   \def\@tempa{}%
979   \@tempcnta\z@\relax
980   \def\acs@number@list@aux@ii{%
981     \advance\@tempcnta\@ne\relax
982     \ifnum\@tempcnta>\acs@author@cnt\relax\else
983       \acs@ifundefined{@#1@\@roman\@tempcnta}{}{%
984         \acs@ifundefined{@email@\@roman\@tempcnta}{}{%
985           \ifx\@tempa\@empty
986             \edef\@tempa{%
987               \nameuse{@#1@\@roman\@tempcnta}%
988             }%
989           \else
990             \edef\@tempa{%
991               \@tempa

```

```

992           ;
993           \nameuse{@#1@roman@tempcpta}%
994       }%
995       \fi
996   }%
997 }%
998 \expandafter\acs@number@list@aux@ii
999 \fi
1000 }%
1001 \acs@number@list@aux@ii
1002 \ifx@\tempa\empty\else
1003   \protected@edef\tempa{%
1004     \MakeUppercase#1: \tempa
1005   }%
1006 \fi
1007 }
1008 \newcommand*\acs@number@list@aux@ii{}

\endabstract
\acs@abstract@extras 1009 \g@addto@macro\endabstract{%
1010   \aftergroup\acs@abstract@extras
1011 }
1012 \newcommand*\acs@abstract@extras{%
1013   \ifacs@abbreviations
1014     \acs@abbreviations@print
1015     \par
1016   \fi
1017   \ifacs@keywords
1018     \acs@keywords@print
1019     \par
1020   \fi
1021 }

\acs@maketitle@extras  A couple of things might need to be added to \maketitle.
\acs@maketitle@extras@hook 1022 \newcommand*\acs@maketitle@extras{%
1023   \acs@maketitle@extras@hook
1024 }
1025 \newcommand*\acs@maketitle@extras@hook{}
1026 \g@addto@macro{\maketitle}{\acs@maketitle@extras}

\maketitle is required by the document class, and must start the document. No variation is allowed, and so it is done automatically.
1027 \g@addto@macro{\document}{\maketitle}

scheme  Three new float types are provided, scheme, chart and graph. These are the
chart    most obvious types; for graphs, a slight problem arises with the file extension.
graph   1028 \newfloat{scheme}{htbp}{los}
1029 \floatname{scheme}{Scheme}
1030 \newfloat{chart}{htbp}{loc}
1031 \floatname{chart}{Chart}
1032 \newfloat{graph}{htbp}{loh}
1033 \floatname{graph}{Graph}

```

\schemename	Naming is set up in the same way as the kernel floats.
\chartname	1034 \newcommand*\schemename{Scheme}
\graphname	1035 \newcommand*\chartname{Chart}
	1036 \newcommand*\graphname{Graph}
	The standard floats should appear “here” by default.
	1037 \floatplacement{table}{htbp}
	1038 \floatplacement{figure}{htbp}
	1039 \floatstyle{plaintop}
	1040 \restylefloat{table}
\acs@floatboxreset	Flosts are all centred.
	1041 \let\acs@floatboxreset\@floatboxreset
	1042 \def\@floatboxreset{%
	1043 \centering
	1044 \acs@floatboxreset
	1045 }
\plainref	For legacy support.
\ref	1046 \newcommand*\plainref{} 1047 \AtBeginDocument{\let\plainref\ref}
\acs@section	Both the numbering and existence of section headers may need to be altered.
\acs@subsection	Some generic functions are therefore provided to deal with this cleanly. First, some original definitions are saved.
\acs@subsubsection	
\acs@startsection@orig	1048 \newcommand*\acs@section{} 1049 \let\acs@section\section 1050 \newcommand*\acs@subsection{} 1051 \let\acs@subsection\subsection 1052 \newcommand*\acs@subsubsection{} 1053 \let\acs@subsubsection\subsubsection 1054 \newcommand*\acs@startsection@orig{} 1055 \let\acs@startsection@orig\@startsection
\acs@startsection	A version of \@startsection which adds unnumbered sections to the TOC: modelled on amsart. This is active as standard.
	1056 \newcommand\acs@startsection[6]{% 1057 \if@noskipsec \leavevmode \fi 1058 \par \tempskipa #4\relax 1059 \afterindenttrue 1060 \ifdim \tempskipa < \z@ \tempskipa -\tempskipa \afterindentfalse\fi 1061 \if@nobreak \everypar{}\else 1062 \addpenalty\secpenalty\addvspace\tempskipa\fi 1063 \ifstar{\dblarg{\sect{\#1}{\@m}{\#3}{\#4}{\#5}{\#6}}}% 1064 {\dblarg{\sect{\#1}{\#2}{\#3}{\#4}{\#5}{\#6}}} % 1065 } 1066 \let\@startsection\acs@startsection
\acs@startsection@alt	An alternative version of \@startsection which never adds numbers.
	1067 \newcommand*\acs@startsection@alt[6]{% 1068 \if@noskipsec \leavevmode \fi 1069 \par \tempskipa #4\relax 1070 \afterindenttrue

```

1071 \ifdim \c@tempskipa < \z@ \c@tempskipa -\c@tempskipa \c@afterindentfalse\fi
1072 \if@nobreak \everypar{}\else
1073     \addpenalty\secpenalty\addvspace\c@tempskipa\fi
1074 \c@ifstar{\c@ssect{#3}{#4}{#5}{#6}}
1075     {\c@ssect{#3}{#4}{#5}{#6}}%
1076 }

```

\acs@sections@none When removing sections entirely, a gobble macro is needed.

```

\acs@sections@none@aux 1077 \newcommand*\acs@sections@none{%
1078     \c@ifstar{%
1079         \acs@sections@none@aux
1080     }%
1081     \acs@sections@none@aux
1082 }%
1083 }
1084 \newcommand*\acs@sections@none@aux[2] []{%
1085     \acs@warning{%
1086         (Sub)section '#2' ignored%
1087 }%
1088 }

```

\SectionNumbersOff To macros to add or remove the section numbers. The standard setting for the class has them on, but some configurations will turn them off. The names of these functions are both in design space so that users can change the decision easily.

```

1089 \newcommand*\SectionNumbersOff{%
1090     \let\c@startsection\acs@startsection@alt
1091 }
1092 \c@onlypreamble\SectionNumbersOff
1093 \newcommand*\SectionNumbersOn{%
1094     \let\c@startsection\acs@startsection
1095 }
1096 \c@onlypreamble\SectionNumbersOn

```

\SectionsOff Quite similar for entire sections.

```

\SectionsOn 1097 \newcommand*\SectionsOff{%
1098     \let\c@section\acs@sections@none
1099     \let\c@subsection\acs@sections@none
1100     \let\c@subsubsection\acs@sections@none
1101 }
1102 \c@onlypreamble\SectionsOff
1103 \newcommand*\SectionsOn{%
1104     \let\c@section\acs@section
1105     \let\c@subsection\acs@subsection
1106     \let\c@subsubsection\acs@subsubsection
1107 }
1108 \c@onlypreamble\SectionsOn

```

\tableofcontents Never print TOC in itself.

```

1109 \begingroup
1110   \toks@=\expandafter{\tableofcontents}
1111   \xdef\tableofcontents{%
1112     \begingroup

```

```

1113      \let\noexpand\@startsection\noexpand\acs@startsection@orig
1114      \the\toks@
1115      \endgroup
1116  }
1117 \endgroup

acknowledgement Simple named sections.
suppinfo 1118 \newenvironment{acknowledgement}{%
1119   \acs@section*\{\!acknowledgementname\}%
1120 }{%
1121 \newenvironment{suppinfo}{%
1122   \acs@section*\{\!suppinfo\}%
1123   \acs@collect\acs@suppinfo@print
1124 }{%

```

\acs@suppinfo@print A simple macro to print the supporting information.

```

1125 \newcommand\acs@suppinfo@print[1]{%
1126   #1
1127   This material is available free of charge via the Internet at
1128   \url{http://pubs.acs.org/}.
1129 }

```

\acknowledgementname A few macros need to get around the changes.

```

\bibsection 1130 \newcommand*\acknowledgementname{Acknowledgement}
\suppinfo 1131 \AtEndOfClass{%
1132   \def\bibsection{%
1133     \acs@section*\{\!refname\}%
1134   }%
1135 }
1136 \newcommand*\suppinfo{Supporting Information Available}

```

\acs@abstract \acs@endabstract Removing the abstract, if necessary, is done using a trick from the comment package. However, it code is copied here to keep requirements down.

```

\acs@abstract@start 1137 \newcommand*\acs@abstract(){}
\acs@abstract@end 1138 \let\acs@abstract\abstract
\acs@abstract@iffalse 1139 \newcommand*\acs@endabstract(){}
1140 \let\acs@endabstract\endabstract
1141 \begingroup
1142   \catcode`{ \active
1143   \catcode`} 12\relax
1144   \catcode`( 1\relax
1145   \catcode`) 2\relax
1146   \gdef\acs@abstract@start{%
1147     \acs@warning{%
1148       Abstract not allowed for this\MessageBreak
1149       manuscript type
1150     }%
1151     \bsphack
1152     \catcode`{ \active
1153     \catcode`} 12\relax
1154     \let\end\fi
1155     \let{\acs@abstract@end}{%
1156       \iffalse
1157     }%
1158   }%

```

```

1158 \gdef\acs@abstract@end#1{%
1159   \def\@tempa{#1}%
1160   \ifx\@tempa\currenvir
1161     \@Ephack\endgroup
1162     \if@ignore
1163       \global\@ignorefalse
1164       \ignorespaces
1165     \fi
1166   \else
1167     \expandafter\acs@abstract@iffalse
1168   \fi
1169 )
1170 \endgroup
1171 \newcommand*\acs@iffalse{\iffalse}

\AbstractOff A very similar pattern to before.
\AbstractOn
1172 \newcommand*\AbstractOff{%
1173   \let\abstract\acs@abstract@start
1174   \let\endabstract\acs@abstract@end
1175 }
1176 \onlypreamble\AbstractOff
1177 \newcommand*\AbstractOn{%
1178   \let\abstract\acs@abstract
1179   \let\endabstract\acs@endabstract
1180 }
1181 \onlypreamble\AbstractOn

\acs@collect@toks
\acs@collect@content
\acs@collect@content
The content of the graphic TOC entry is processed using a method from amsmath
via environ. The entire environment is gathered for typesetting in a box. First,
some storage is needed.
1182 \newtoks\acs@collect@toks
1183 \newtoks\acs@collect@empty@toks
1184 \newcommand*\acs@collect@begins{}%
1185 \newcommand*\acs@collect@content{}%

\acs@collect This is a \long version of \collect@body.
\acs@collect@aux
\acs@collect@begins@
\acs@collect@body
1186 \newcommand\acs@collect[1]{%
1187   \acs@collect@toks{%
1188     \expandafter#1\expandafter{\the\acs@collect@toks}%
1189   }%
1190   \edef\acs@collect@content{%
1191     \the\acs@collect@toks
1192     \noexpand\end{\currenvir}%
1193   }%
1194   \acs@collect@toks\acs@collect@empty@toks
1195   \def\acs@collect@begins{b}%
1196   \begin{group}
1197     \expandafter\let\csname\currenvir\endcsname\acs@collect@aux
1198     \edef\acs@collect@content{%
1199       \expandafter\noexpand\csname\currenvir\endcsname
1200     }%
1201     \acs@collect@content
1202   }%
1203 \newcommand*\acs@collect@aux{}%

```

```

1204 \long\def\acs@collect@aux#1\end#2{%
1205   \edef\acs@collect@begins{%
1206     \acs@collect@begins@#1\begin\end
1207     \expandafter\gobble\acs@collect@begins
1208   }%
1209   \ifx\empty\acs@collect@begins
1210     \endgroup
1211     \checkend{#2}%
1212     \acs@collect@body{#1}%
1213   \else
1214     \acs@collect@body{#1\end{#2}}%
1215   \fi
1216   \acs@collect@content
1217 }
1218 \newcommand*\acs@collect@begins@{}%
1219 \long\def\acs@collect@begins@#1\begin#2{%
1220   \ifx\end#2\else
1221     b\expandafter\acs@collect@begins@
1222   \fi
1223 }
1224 \newcommand\acs@collect@body[1]{%
1225   \global\acs@collect@toks\expandafter{\the\acs@collect@toks#1}%
1226 }

```

`\acs@abstract@print` Delayed abstract printing works in a similar way, but with some formatting 'built-in'.

```

1227 \newcommand\acs@abstract@print[1]{%
1228   \global\long\def\acs@abstract@text{%
1229     \if@twocolumn
1230       \restonecoltrue\onecolumn
1231     \else
1232       \restonecolfalse\newpage
1233     \fi
1234     \acs@section*{Abstract}%
1235     #1%
1236     \if@restonecol
1237       \twocolumn
1238     \else
1239       \newpage
1240     \fi
1241   }%
1242   \AtEndDocument{\acs@abstract@text}%
1243 }

```

`\acs@tocentry@print` The same approach is taken for the graphical table of content printing. This is done in a box so that everything has a frame around it.

```

\acs@tocentry@text
1244 \newcommand{\acs@tocentry@print}[1]{%
1245   \gdef\acs@tocentry@text{#1}%
1246   \AtEndDocument{%
1247     \if@twocolumn
1248       \restonecoltrue\onecolumn
1249     \else
1250       \restonecolfalse\newpage
1251     \fi

```

```

1252     \acs@tocentry@print@aux
1253     \if@restonecol
1254         \twocolumn
1255     \else
1256         \newpage
1257     \fi
1258 }%
1259 }
1260 \newcommand*{\acs@tocentry@print@aux}{%
1261     \begingroup
1262     \let\@startsection\acs@startsection@orig
1263     \acs@section*{\acs@tocentryname}%
1264     \tocsiz
1265     \sffamily
1266     \singlspacing
1267     \begin{center}
1268         \fbox
1269         {%
1270             \begin{minipage}{\acs@tocentry@height}
1271                 \vbox to \acs@tocentry@width{\acs@tocentry@text}%
1272             \end{minipage}%
1273         }%
1274     \end{center}%
1275 \endgroup
1276 }
1277 \newcommand*{\acs@tocentry@text}{TOC ENTRY REQUIRED}
1278 \newlength{\acs@tocentry@height}
1279 \newlength{\acs@tocentry@width}
1280 \setlength{\acs@tocentry@height}{9 cm}
1281 \setlength{\acs@tocentry@width}{3.5 cm}

```

**tocentry** Actually creating the entry is pretty easy.

```
1282 \newenvironment{tocentry}{\acs@collect\acs@tocentry@print}{}%
```

**\tocentryname** A simple name macro.

```
1283 \newcommand*{\tocentryname}{Graphical TOC Entry}
```

**\tocsiz** The font size for printing the TOC entry.

```
1284 \newcommand*{\tocsiz}{%
1285     \setfontsize\tocsiz\@viiipt\@ixpt
1286 }
```

**\acs@type@list** Different journals allow different types of article. A list is set up here: different journals can then alter it. A check function is also provided along with a default.

```
1287 \newcommand*{\acs@type@list}{article,communication,suppinfo}
1288 \newcommand*{\acs@type@default}{article}
1289 \newcommand*{\acs@type@check}{%
1290     \tempswafalse
1291     \for\tempa:=\acs@type@list\dof%
1292         \ifx\tempa\acs@manuscript
1293             \expandafter\tempswatrue
1294         \fi
1295     }%
1296     \if@tempswa\else
```

```

1297     \acs@warning{%
1298         Invalid manuscript type \acs@manuscript:\MessageBreak
1299         changed to default type \acs@type@default
1300     }%
1301     \let\acs@manuscript\acs@type@default
1302 \fi
1303 }

```

Although achemso avoids too much formatting, the class file makes a few changes to keep life simple. The name of the bibliography should be “Notes and References” if any notes are added.

```

1304 \def\refname{%
1305     \ifnum\the\value{bibnote}>\z@\relax
1306         Notes and
1307     \fi
1308     References%
1309 }

```

A few bits for older versions.

```

1310 \newcommand*\acs@setkeys{\setkeys{acs}{}
1311 \let\acs@killabstract\AbstractOff
1312 \let\acs@killsecs\SectionsOff
1313 \newcommand*\acs@validtype[2][article]{%
1314     \def\acs@type@default{#1}%
1315     \def\acs@type@list{#2}%
1316 }

```

\acs@par A saved paragraph.

```

1317 \newcommand*\acs@par{}%
1318 \let\acs@par\par

```

\acs@layout@shared acknowledgement Some code is used generally when setting up “press ready” layouts. There is quite a bit here, mainly layout related.

```

suppinfo 1319 \newcommand*\acs@layout@shared{%
1320     \AtBeginDocument{\singespacing}%
1321     \twocolumn
1322     \tolerance=2000\relax
1323     \emergencystretch=10pt\relax
1324     \geometry{
1325         letterpaper,
1326         top      = 12.7mm,
1327         bottom   = 16.8mm,
1328         left     = 19.3mm,
1329         right    = 19.3mm
1330     }%
1331     \setlength{\columnsep}{8.1mm}%
1332     \setlength{\parindent}{3.3mm}%
1333     \renewenvironment{acknowledgement}{%
1334         \def\@tempa{acknowledgement}%
1335         \def\@tempa{acknowledgement}%
1336         \ifx\@currenvir\@tempa
1337             \let\par\relax
1338             \acksizes
1339             \vspace{6pt}%
             \textbf{\ acknowledgementname}%
}

```

```

1340      \else
1341          \acs@section*\{\acknowledgementname\}%
1342      \fi
1343  }%
1344      \acs@par
1345  }%
1346  \renewenvironment{suppinfo}{%
1347      \def\@tempa{suppinfo}%
1348      \ifx\@currenvir\@tempa
1349          \expandafter\acs@suppinfo@aux
1350      \else
1351          \acs@section*\{\suppinfo@name\}%
1352      \fi
1353  }%
1354      \acs@par
1355  }%
1356 }

\acs@suppinfo@aux A short spin out.
1357 \newcommand*\acs@suppinfo@aux{%
1358     \let\par\relax
1359     \suppsize
1360     \vspace{6pt}%
1361     \textbf{\suppinfo@name:}
1362     \acs@collect\acs@suppinfo@print
1363 }

\acksize More sizes.
\suppsize 1364 \newcommand*\acksize{\normalsize}
1365 \newcommand*\suppsize{\normalsize}

\acs@layout@nine \acs@layout@ten The class loads twelve point text. To reset it for print layouts, it is easiest to do
    \xipt things directly.
\acs@layout@ten 1366 \newcommand*\acs@layout@nine{%
1367     \def\@xipt{11}%
1368     \long\def\normalsize{%
1369         \setfontsize\normalsize\xipt\xipt
1370     }%
1371     \normalsize
1372     \let\@listi\@listI
1373     \abovedisplayskip 5\p@ \oplus2\p@ \minus 5\p@\relax
1374     \abovedisplayshortskip \z@ \oplus3\p@\relax
1375     \belowdisplayshortskip 3\p@ \oplus3\p@ \minus 3\p@\relax
1376     \belowdisplayskip\abovedisplayskip\relax
1377     \abovecaptionskip 5\p@\relax
1378     \intextsep 7\p@ \oplus 2\p@ \minus 2\p@\relax
1379 }
1380 \newcommand*\acs@layout@ten{%
1381     \long\def\normalsize{%
1382         \setfontsize\normalsize\xpt\xipt
1383     }%
1384     \normalsize
1385     \setfontsize\normalsize\xpt\xipt
1386     \let\@listi\@listI

```

```

1387 \abovedisplayskip 10\p@ \cplus2\p@ \minus5\p@\relax
1388 \abovedisplayshortskip \z@ \cplus3\p@\relax
1389 \belowdisplayshortskip 6\p@ \cplus3\p@ \minus3\p@\relax
1390 \belowdisplayskip \abovedisplayskip\relax
1391 }

```

With all of the standard settings done, the journal configuration can be loaded.

```

1392 \InputIfFileExists{achemso-\acs@journal.cfg}{}{%
1393   \acs@warning{%
1394     Unknown journal '\acs@journal':\MessageBreak
1395     using default configuration JACSAT%
1396   }%
1397   \input{achemso-jacsat.cfg}%
1398 }

```

\thepage Some changes that can always be applied if the manuscript type is appropriate:  
this saves some repetition in the configuration files.

```

1399 \acs@type@check
1400 \ifx\acs@manuscript\acs@manuscript@note
1401   \SectionsOff
1402 \fi
1403 \ifx\acs@manuscript\acs@manuscript@review
1404   \SectionsOn
1405   \SectionNumbersOn
1406 \fi
1407 \ifx\acs@manuscript\acs@manuscript@suppinfo
1408   \setkeys{acs}{maxauthors = 0}
1409   \def\thepage{S\arabic{page}}
1410   \renewcommand*\thefigure{S\arabic{c@figure}}
1411   \renewcommand*\thescheme{S\arabic{c@scheme}}
1412   \renewcommand*\thetable{S\arabic{c@table}}
1413   \AtBeginDocument
1414   {%
1415     \renewcommand*\citemumfont[1]{S#1}%
1416     \renewcommand*\bibnumfmt[1]{{(S#1)}}%
1417   }
1418 \fi

```

Set up two column layout.

```

1419 \begingroup
1420   \def\@tempa{twocolumn}
1421   \ifx\acs@layout\@tempa
1422     \aftergroup\acs@layout@shared
1423   \fi
1424   \def\@tempa{two-column}
1425   \ifx\acs@layout\@tempa
1426     \aftergroup\acs@layout@shared
1427   \fi
1428 \endgroup
1429 
```

## 8.5 Late shared code

- \citemenumfont Changes to citations can now be made. The citation styles supplied here require `natbib`, which is loaded with the appropriate options. This part applies to the package as well as the class: it is here so that the load order is correct.

```

1430 {*class | package}
1431 \ifacs@super
1432   \RequirePackage[sort&compress,numbers,super]{natbib}
1433 \else
1434   \RequirePackage[sort&compress,numbers,round]{natbib}
1435   \def\citemenumfont{\textit}
1436 \fi
1437 \define@key{acs}{super}[true]{%
1438   \def\@tempa{\#1}%
1439   \def\@tempb{true}%
1440   \ifx\@tempa\@tempb
1441     \setcitestyle{super,open={},close={}}%
1442     \renewcommand*\citemenumfont{}%
1443   \else
1444     \setcitestyle{round}%
1445     \renewcommand*\citemenumfont{\textit}
1446   \fi
1447 }
1448 \RequirePackage{natmove}
```

The `mciteplus` package allows the construction of lists of references with sub-letters. However, it might not be available, and so it is only loaded if available: the `.bst` files should work either way. There is also a patch to get cross-references correct with the modified `\ref` macro used here. The reason for ensuring that `\@mciteNatbibCiteCmdList` is defined is that it allows for the case where people prevent `mciteplus` being loaded using `\ver@mciteplus.sty`.

```

1449 \IfFileExists{mciteplus.sty}{%
1450   \RequirePackage{mciteplus}
1451   \providecommand*\@mciteNatbibCiteCmdList{}%
1452   \edef\@tempa{\noexpand\in@\citemenum{\@mciteNatbibCiteCmdList}}%
1453   \@tempa
1454   \ifin@
1455   \else
1456     \edef\@mciteNatbibCiteCmdList{\@mciteNatbibCiteCmdList,citemenum}%
1457   \fi
1458 {*}!package}
1459   \def\@mciteSubRef[##1]##2{\plainref{\@mcitereflabelprefix:##1:##2}}
1460 }{/!package}
1461 }
```

- \acs@bibstyle The next step is to sort out bibliography formatting. With both the package and the class, the bibliography style is determined without user intervention. The style is stored as it may need to be altered later.

```

1462 \newcommand*\acs@bibstyle{achemso}
1463 \ifacs@biochem
1464   \def\acs@bibstyle{biochem}
1465   \bibliographystyle{biochem}
1466 \else
```

```

1467 \bibliographystyle{achemso}
1468 \fi

\acs@bibliographystyle The original \bibliographystyle macro is now disabled: the underlying command is repeated otherwise problems cop up with chapterbib.

1469 \newcommand*\acs@bibliographystyle{}
1470 \let\acs@bibliographystyle\bibliographystyle
1471 \def\bibliographystyle#1{%
1472   \acs@warning{\string\bibliographystyle\space ignored}%
1473   \expandafter\acs@bibliographystyle\expandafter{\acs@bibstyle}%
1474 }%
1475 </class | package>

```

## 8.6 Late package-only code

The notes2bib code may or may not be activated.

```

1476 <*package>
1477 \AtBeginDocument{%
1478   \@ifpackageloaded{notes2bib}{}{%
1479     \acs@niib@create
1480   }%
1481 }%
1482 </package>

```

## 8.7 Moving citations with natbib

The code for moving citations is created as a separate package, as the code needed is the same in both cases.

```

1483 <*natmove>
1484 \ProvidesPackage{natmove}
1485 [2010/01/15 v1.1a Automatic citation moving with natbib]
1486 \RequirePackage{natbib}

```

\nmv@ifmtarg To keep down dependence on other packages, the very short code block from ifmtarg is copied here with an internal name.

```

1487 \newcommand*\nmv@ifmtarg{}
1488 \newcommand*\nmv@xifmtarg{}
1489 \begingroup
1490   \catcode`\Q 3\relax
1491   \long\gdef\nmv@ifmtarg#1{%
1492     \nmv@xifmtarg#1QQ\@secondoftwo\@firstoftwo\@nil
1493   }%
1494   \long\gdef\nmv@xifmtarg#1#2Q#3#4#5\@nil{#4}
1495 \endgroup

```

\ifnmv@cite A flag is need to watch whether \cite or another macro is in use.

```

1496 \newif\ifnmv@cite

```

\nmv@citex Using the flag, either the new internal macro, or the natbib original, can be called.

```

1497 \newcommand*\nmv@citex{%
1498   \ifnmv@cite
1499     \expandafter\nmv@citex@moving

```

```

1500  \else
1501    \expandafter\nmv@citex@nat
1502  \fi
1503 }

\nmv@after Later, the argument for \cite will need to be saved.
1504 \newcommand*\nmv@after{}

\nmv@citex@moving The new version of \citex is needed that looks ahead of the citation using \futurelet. There are three arguments to \citex when using natbib. Other than that, the trick used here is similar to that in cite.
1505 \newcommand*\nmv@citex@moving{}
1506 \def\nmv@citex@moving[#1] [#2]#3{%
1507   \leavevmode
1508   \skip@\lastskip\relax
1509   \unskip
1510   \begingroup
1511     \def\nmv@after{\nmv@citex@nat[#1] [#2]{#3}}%
1512     \global\nmv@citefalse
1513     \nmv@citex@get@next\relax
1514 }

\nmv@citex@end To get things right at the end.
1515 \newcommand*\nmv@citex@end{%
1516   \nmv@after
1517   \endgroup
1518 }

\nmv@citex@get@next The next token on the input stack is saved into \nmv@citex@next, after gobbling up one token.
1519 \newcommand*\nmv@citex@get@next[1]{%
1520   \futurelet\nmv@citex@next\nmv@citex@punct
1521 }

\nmv@citex@punct \nmv@citex@punct@undouble \nmv@citex@loop The working macro for moving the punctuation. This is very much like \citex in the cite package. The initial assumption is that the loop will terminate, and so the recursion call will simply do the finalisation.
1522 \newcommand*\nmv@citex@punct{%
1523   \let\nmv@citex@loop\nmv@citex@end
1524   \ifx\nmv@citex@next.\relax
1525     \ifnum\spacefactor<\nmv@citex@sfac\else
1526       \expandafter\expandafter\expandafter\nmv@citex@punct@undouble
1527     \fi
1528   \fi
1529   \expandafter\nmv@citex@punct@aux\natmovechars@nil
1530   \nmv@citex@loop
1531 }
1532 \newcommand*\nmv@citex@punct@undouble{%
1533   \let\nmv@citex@next\relax
1534   \let\nmv@citex@loop\nmv@citex@get@next
1535 }
1536 \newcommand*\nmv@citex@loop{}

```

\nmv@citex@punct@aux	The final part of the punctuation moving system.
	<pre> 1537 \newcommand*\nmv@citex@punct@aux[1]{% 1538   \ifx\nmv@citex@next\empty 1539     #1% 1540     \let\nmv@citex@loop\nmv@citex@get@next 1541   \fi 1542   \ifx#1\@nil\else 1543     \expandafter\nmv@citex@punct@aux 1544   \fi 1545 }</pre>
\nmv@citex@sfac	The value of the spacing factor after a full stop is used to signal doubled punctuation. For French spacing, a bit of patching is needed.
	<pre> 1546 \mathchardef\nmv@citex@sfac3000\relax 1547 \expandafter\def\expandafter\frenchspacing\expandafter{% 1548   \frenchspacing 1549   \mathchardef\nmv@citex@sfac1001\relax 1550   \sfcode`.\nmv@citex@sfac 1551   \sfcode`?\nmv@citex@sfac 1552   \sfcode`!\nmv@citex@sfac 1553 } 1554 \ifnum\sfcode`.=\@m 1555   \frenchspacing 1556 \fi</pre>
\nmv@citex@nat \nmv@activate \cite	The swap has to be done at the beginning of the document. The internal flag from natbib is used, but under the circumstances we should be safe. \cite is also patched to make the system active.
	<pre> 1557 \newcommand*\nmv@citex@nat{} 1558 \newcommand*\nmv@activate{% 1559   \let\nmv@citex@nat@\citex 1560   \let@\citex\nmv@citex 1561   \let\nmv@cite\cite 1562   \renewcommand*{\cite}[2][]{% 1563     \nmv@ifmtarg{##1}{% 1564       \nmv@citetrue 1565       \nmv@cite{##2}% 1566     }{% 1567       \nmv@citefalse 1568       \nmv@cite[##1]{##2}% 1569     }% 1570 }</pre>
\nmv@natbib@detect	So that natbib options can be set without worrying about load order, natmove doesn't require natbib. So a test is needed to see if it is actually loaded. This is done as a macro so that the effect can be changed by achemso.
	<pre> 1571 \newcommand*\nmv@natbib@detect{% 1572   \@ifpackageloaded{natbib}{% 1573     \ifNAT@super 1574       \expandafter\nmv@activate 1575     \fi 1576   }{% 1577     \PackageInfo{natmove}{%</pre>

```

1578      The natbib package is not loaded.\MessageBreak
1579      Loading natmove will do nothing
1580      }%
1581      }%
1582 }
1583 \AtBeginDocument{\nmv@natbib@detect}

```

\natmovechars A user macro is needed for moving characters.

```

1584 \newcommand*\natmovechars{.,;:}
1585 
```

## 8.8 The configuration files

The configuration files for different journals are not very complex. Keeping everything separate simply helps with maintenance.

```

1586 (*aamick)
1587 \ProvidesFile{achemso-aamick.cfg}
1588 [2016/06/17 v3.10d achemso configuration: ACS Appl. Mater. Interfaces]
1589 \def\acs@type@list{article,letter,suppinfo}
1590 \setkeys{acs}{%
1591   articletitle = true,
1592   keywords     = true
1593 }
1594 
```

```

1595 (*acbcct)
1596 \ProvidesFile{achemso-acbcct.cfg}
1597 [2016/06/17 v3.10d achemso configuration: ACS Chem. Biol.]
1598 \setkeys{acs}{%
1599   articletitle = true,
1600   biblabel    = fullstop,
1601   biochem     = true,
1602   super       = false
1603 }
1604 \def\acs@type@list{article,letter,review,suppinfo}
1605 \SectionNumbersOff
1606 
```

```

1607 
```

```

1608 \ProvidesFile{achemso-accacs.cfg}
1609 [2016/06/17 v3.10d achemso configuration: ACS Catal.]
1610 \setkeys{acs}{keywords = true}
1611 \def\acs@type@list{article,letter,perspective,review,viewpoints,suppinfo}
1612 \SectionNumbersOff
1613 
```

```

1614 
```

```

1615 \ProvidesFile{achemso-achre4.cfg}
1616 [2016/06/17 v3.10d achemso configuration: Acc. Chem. Res.]
1617 \setkeys{acs}{%
1618   articletitle = true,
1619   biblabel    = plain
1620 }
1621 \def\acs@type@list{article,suppinfo}
1622 \def\abstractname{Conspectus}
1623 
```

```

1624 {*acncdm}
1625 \ProvidesFile{achemso-acncdm.cfg}
1626 [2016/06/17 v3.10d achemso configuration: ACS Chem. Neurosci.]
1627 \def\acs@type@list{article,review,letter,suppinfo,viewpoint}
1628 \setkeys{acs}{%
1629   articletitle = true,
1630   biblabel      = fullstop,
1631   biochem       = true,
1632   keywords      = true,
1633   super         = false
1634 }
1635 /acncdm)
1636 {*acsccc}
1637 \ProvidesFile{achemso-acsccc.cfg}
1638 [2016/06/17 v3.10d achemso configuration: ACS Combinatorial Sci.]
1639 \def\acs@type@list{article,letter,review,perspective,account,note,suppinfo}
1640 \setkeys{acs}{%
1641   articletitle = true,
1642   keywords     = true
1643 }
1644 \SectionNumbersOff
1645 /acsccc)
1646 {*acscii}
1647 \ProvidesFile{achemso-acscii.cfg}
1648 [2016/06/17 v3.10d achemso configuration: ACS Central Sci.]
1649 \def\acs@type@list{article,review,suppinfo}
1650 \setkeys{acs}{%
1651   articletitle = true,
1652   doi          = true
1653 }
1654 \SectionNumbersOff
1655 /acscii)
1656 {*acsodf}
1657 \ProvidesFile{achemso-acsodf.cfg}
1658 [2016/06/17 v3.10d achemso configuration: ACS Omega.]
1659 \def\acs@type@list{article}
1660 \setkeys{acs}{%
1661   articletitle = true,
1662 }
1663 /acsodf)
1664 {*aelccp}
1665 \ProvidesFile{achemso-aelccp.cfg}
1666 [2016/06/17 v3.10d achemso configuration: ACS Energy Lett.]
1667 \def\acs@type@list{letter,perspective,review,viewpoint,focus}
1668 \setkeys{acs}{%
1669   articletitle = true,
1670 }
1671 \SectionsOff
1672 /aelccp)
1673 {*amlccd}
1674 \ProvidesFile{achemso-amlccd.cfg}
1675 [2016/06/17 v3.10d achemso configuration: ACS Macro Lett.]
1676 \def\acs@type@list{letter,suppinfo}
1677 \SectionsOff

```

```

1678 \setlength{\acs@tocentry@height}{8 cm}
1679 \setlength{\acs@tocentry@width}{4 cm}
1680 
```

```
1681 /*amclct)
```

```
1682 \ProvidesFile{achemso-amclct.cfg}
```

```
1683 [2016/06/17 v3.10d achemso configuration: ACS Med. Chem. Lett.]
```

```
1684 \setkeys{acs}{
```

```
1685 articletitle = true
```

```
1686 }
```

```
1687 \def\acs@type@list{article,letter,perspective,suppinfo}
```

```
1688 \SectionNumbersOff
```

```
1689 
```

```
1690 % \changes{v3.8n}{2015/01/13}{\emph{ACS Nano} want abbreviations}
```

```
1691 /*ancac3}
```

```
1692 \ProvidesFile{achemso-ancac3.cfg}
```

```
1693 [2016/06/17 v3.10d achemso configuration: ACS Nano]
```

```
1694 \setkeys{acs}{
```

```
1695 abbreviations = true,
```

```
1696 articletitle = true,
```

```
1697 biblabel = fullstop,
```

```
1698 etalmode = truncate,
```

```
1699 maxauthors = 10,
```

```
1700 keywords = true
```

```
1701 }
```

```
1702 \def\acs@type@list{article,perspective,suppinfo}
```

```
1703 \newcommand*{\latin}[1]{\emph{#1}}
```

```
1704 \SectionNumbersOff
```

```
1705 
```

```
1706 /*ancham}
```

```
1707 \ProvidesFile{achemso-ancham.cfg}
```

```
1708 [2016/06/17 v3.10d achemso configuration: Anal. Chem.]
```

```
1709 \def\acs@type@list{article,note,suppinfo}
```

```
1710 \SectionNumbersOff
```

```
1711 
```

```
1712 /*apchd5}
```

```
1713 \ProvidesFile{achemso-apchd5.cfg}
```

```
1714 [2016/06/17 v3.10d achemso configuration: ACS Photon.]
```

```
1715 \def\acs@type@list{article,letter,perspective,review,suppinfo}
```

```
1716 \setkeys{acs}{
```

```
1717 articletitle = true,
```

```
1718 keywords = true
```

```
1719 }
```

```
1720 \ifx\acs@manuscript\acs@manuscript@letter
```

```
1721 \SectionNumbersOff
```

```
1722 \fi
```

```
1723 
```

```
1724 /*ascecg}
```

```
1725 \ProvidesFile{achemso-ascecg.cfg}
```

```
1726 [2016/06/17 v3.10d achemso configuration: ACS Sustainable Chem Eng.]
```

```
1727 \setkeys{acs}{
```

```
1728 articletitle = true,
```

```
1729 biblabel = fullstop,
```

```
1730 keywords = true
```

```
1731 }
```

```

1732 \SectionNumbersOff
1733 \def\acs@type@list{article,feature,letter,perspective,review,suppinfo}
1734 (/ascecg)
1735 (*asbcd6)
1736 \ProvidesFile{achemso-asbcd6.cfg}
1737 [2016/06/17 v3.10d achemso configuration: ACS Synth. Biol.]
1738 \setkeys{acs}{
1739   abbreviations = true,
1740   articletitle = true,
1741   biblabel = fullstop,
1742   biochem = true,
1743   keywords = true,
1744   super = false
1745 }
1746 \def\acs@type@list{article,letter,note,tutorial,review,suppinfo}
1747 (/asbcd6)
1748 (*bichaw)
1749 \ProvidesFile{achemso-bichaw.cfg}
1750 [2016/06/17 v3.10d achemso configuration: Biochemistry]
1751 \setkeys{acs}{
1752   abbreviations = true,
1753   articletitle = true,
1754   biblabel = fullstop,
1755   biochem = true,
1756   super = false
1757 }
1758 \SectionNumbersOff
1759 \def\acs@maketitle@extras@hook{%
1760   \par
1761   \acs@title@short@print
1762 }
1763 \g@addto@macro{\maketitle}{\newpage}

```

\acs@author@fnsymbol Some changes to do with footnotes: symbols are different and symbol number one can only be used for the title.

```

1764 \def\acs@author@fnsymbol#1{%
1765   \ensuremath{%
1766     \ifcase #1 *\or
1767       \dag\or
1768       \ddag\or
1769       \S\or
1770       \parallel\or
1771       \perp\or
1772       \text{P}\or
1773       \text{I}\or
1774       \bot\or
1775       \#\or
1776       \text{@}\or
1777       \triangle\or
1778       \nabla\else
1779       #1%
1780   \fi
1781 }%
1782 }

```

```

1783 \def\@maketitle@title@hook{%
1784   \ifnum\acs@footnote@cnt>\@ne
1785     \else
1786       \global\acs@footnote@cnt\@ne
1787     \fi
1788 }
1789 </bichaw>
1790 (*bcches)
1791 \ProvidesFile{achemso-bcches.cfg}
1792 [2016/06/17 v3.10d achemso configuration: Bioconjugate Chem.]
1793 \setkeys{acs}{%
1794   articletitle = true,
1795   biochem      = true,
1796   super        = false
1797 }
1798 \SectionNumbersOff
1799 </bcches>
1800 (*bomaf6)
1801 \ProvidesFile{achemso-bomaf6.cfg}
1802 [2016/06/17 v3.10d achemso configuration: Biomacromolecules]
1803 \def\acs@type@list{article,comment,communication,note,review,suppinfo}
1804 \SectionNumbersOff
1805 \AtEndOfClass{\SectionsOn}
1806 </bomaf6>
1807 (*crtoec)
1808 \ProvidesFile{achemso-crtoec.cfg}
1809 [2016/06/17 v3.10d achemso configuration: Chem. Res. Toxicol.]
1810 \setkeys{acs}{%
1811   abbreviations = true,
1812   articletitle = true,
1813   biochem      = true,
1814   keywords     = true
1815 }
1816 \def\acs@maketitle@extras@hook{%
1817   \par
1818   \acs@title@short@print
1819 }
1820 \def\acs@type@list{%
1821   article,perspective,profile,review,suppinfo%
1822 }
1823 \SectionNumbersOff
1824 </crtoec>
1825 (*chreay)
1826 \ProvidesFile{achemso-chreay.cfg}
1827 [2016/06/17 v3.10d achemso configuration: Chem. Rev.]
1828 \def\acs@type@default{review}
1829 \def\acs@type@list{review}
1830 \setkeys{acs}{articletitle = true}

```

The references section is numbered in *Chem. Rev.*

```

1831 \def\bibsection{\acs@section{\refname}}
1832 </chreay>
1833 (*cmatex)
1834 \%    \begin{macrocode}

```

```

1835 \ProvidesFile{achemso-cmatex.cfg}
1836 [2016/06/17 v3.10d achemso configuration: Chem. Mater.]
1837 \setkeys{acs}{keywords = true}
1838 \SectionNumbersOff
1839 \ifx\acs@manuscript\acs@manuscript@communication
1840 \AbstractOff
1841 \SectionsOff
1842 \fi
1843 \setkeys{acs}{articletitle = true}
1844 
```

```

1845 (*cgdefu)
1846 \ProvidesFile{achemso-cgdefu.cfg}
1847 [2016/06/17 v3.10d achemso configuration: Cryst. Growth Des.]
1848 \setkeys{acs}{articletitle = true}
1849 \def\acs@type@list{%
1850   article,communication,perspective,suppinfo%
1851 }

```

```

1852 \SectionNumbersOff
1853 \ifx\acs@manuscript\acs@manuscript@communication
1854 \SectionsOff
1855 \fi

```

```

1856 \setlength{\acs@tocentry@height}{8.9 cm}
1857 \setlength{\acs@tocentry@width}{4.6 cm}
1858 
```

```

1859 (*enfuem)
1860 \ProvidesFile{achemso-enfuem.cfg}

```

```

1861 [2016/06/17 v3.10d achemso configuration: Energy Fuels]
1862 \setkeys{acs}{articletitle = true}

```

```

1863 \def\acs@type@list{article,review,suppinfo}
1864 \SectionNumbersOff
1865 
```

```

1866 (*esthag)
1867 \ProvidesFile{achemso-esthag.cfg}

```

```

1868 [2016/06/17 v3.10d achemso configuration: Environ. Sci. Technol.]
1869 \setkeys{acs}{articletitle = true}

```

```

1870 \def\acs@type@list{article,suppinfo}
1871 \SectionNumbersOff
1872 
```

```

1873 (*estlcu)
1874 \ProvidesFile{achemso-estlcu.cfg}

```

```

1875 [2016/06/17 v3.10d achemso configuration: Environ. Sci. Technol. Lett.]
1876 \setkeys{acs}{articletitle = true}

```

```

1877 \def\acs@type@list{letter,suppinfo}
1878 \SectionNumbersOff
1879 
```

```

1880 % \changes{v3.8m}{2014/11/24}{Fixes for \emph{Ind.\ Eng.\ Chem.\ Res.}\ style}
1881 (*iecred)
1882 \ProvidesFile{achemso-iecred.cfg}

```

```

1883 [2016/06/17 v3.10d achemso configuration: Ind. Eng. Chem. Res.]
1884 \setkeys{acs}{%

```

```

1885   articletitle = true,
1886   biblabel      = brackets
1887 }

```

```

1888 \SectionNumbersOff

```

```

1889 </iecred>
1890 (*inoraj)
1891 \ProvidesFile{achemso-inoraj.cfg}
1892 [2016/06/17 v3.10d achemso configuration: Inorg. Chem.]
1893 \SectionNumbersOff
1894 \ifx\acs@manuscript\acs@manuscript@communication
1895 \AbstractOff
1896 \SectionsOff
1897 \fi
1898 </inoraj>
```

The *J. Am. Chem. Soc.* configuration is rather more complicated as there is the need to construct a “galley-like” layout for communications.

```

1899 (*jacsat)
1900 \ProvidesFile{achemso-jacsat.cfg}
1901 [2016/06/17 v3.10d achemso configuration: J. Am. Chem. Soc.]
1902 \SectionNumbersOff
1903 \ifx\acs@manuscript\acs@manuscript@communication\else
1904 \expandafter\endinput
1905 \fi
```

Everything from here onward applies only to communications. Some adjustments are now made using the existing tools.

```

1906 \setkeys{acs}{
1907   email = true,
1908   layout = twocolumn
1909 }
1910 \SectionsOff
1911 \acs@layout@nine
```

**abstract** The abstract appears at the start of the document, with lines around its

```

1912 \renewenvironment{abstract}{%
1913   \hrule
1914   \vspace{2 mm}%
1915   \sffamily
1916   \noindent
1917   \emph{\textbf{Abstract:}}%
1918 }{%
1919   \vspace{2 mm}%
1920   \hrule
1921   \vspace{6 mm}%
1922 }
```

**\acksize** To keep things logical, the size macros are given names related to their function.  
**\affilsize** Some of these are new, some are defined in the class.

```

\authorsize 1923 \def\affilsize{%
\emailsize 1924   \setfontsize\affilsize\@ixpt\@xpt
\capsize 1925 }
\refsize 1926 \def\acksize{%
\suppsize 1927   \setfontsize\acksize\@ixpt\@xipt
\titlesize 1928 }
1929 \def\authorsize{%
1930   \setfontsize\authorsize{10.5}{12.5}%
1931 }
```

```

1932 \newcommand*\capsize{%
1933   \@setfontsize\capsize\@viiipt\@ixpt
1934 }
1935 \def\emailsize{%
1936   \@setfontsize\emailsize\@viiipt{15}%
1937 }
1938 \newcommand*\refsize{%
1939   \@setfontsize\refsize{7.5}{7.5}%
1940 }
1941 \def\suppsize{%
1942   \@setfontsize\suppsize{8.5}{10.5}%
1943 }
1944 \def\titlesize{%
1945   \@setfontsize\titlesize\@xiipt{13}%
1946 }
1947 \let\footnotesize\refsize
1948 \let\captionfont\capsize

@emailfont A slight font change.
1949 \def@emailfont{\sffamily}

\ps@plain The header styles are done the hard way, to keep down the number of packages
\ps@jacs loaded.
1950 \def\ps@plain{%
1951   \let\@mkboth\@gobbletwo
1952   \let\@oddhead\@empty
1953   \def\@oddfoot{%
1954     \reset@font
1955     \sffamily
1956     \textbf{\thepage}%
1957     \hfil
1958   }%
1959   \let\@evenhead\@empty
1960   \let\@evenfoot\@oddfoot
1961 }
1962 \def\ps@acs{%
1963   \def\@oddfoot{%
1964     \reset@font
1965     \sffamily
1966     \textbf{\thepage}%
1967     \hfil
1968   }%
1969   \def\@evenfoot{%
1970     \reset@font
1971     \hfil
1972     \sffamily
1973     \textbf{\thepage}%
1974   }%
1975   \def\@oddhead{}%
1976   \let\@evenhead\@oddhead
1977 }
1978 \pagestyle{acs}

\acs@space@pre@title Length adjustments for the title.
\acs@space@post@title
\acs@space@post@author
\acs@space@post@address
\acs@space@post@email

```

```

1979 \setlength\acs@space@pre@title{16mm}
1980 \setlength\acs@space@post@title{0mm}
1981 \setlength\acs@space@post@author{0mm}
1982 \setlength\acs@space@post@address{0mm}
1983 \setlength\acs@space@post@email{-1mm}
1984 \setlength\acs@maketitle@width{152.4mm}

```

\acs@contact@details Contact details are different here.

```

1985 \def\acs@contact@details{%
1986   Received \today; E-mail: \acs@email@list
1987 }

```

\acs@maketitle@extras No keywords or abbreviations for *J. Am. Chem. Soc.*.

```
1988 \let\acs@maketitle@extras\relax
```

Getting the floats correct is a difficult task “by hand”; using the caption package makes this a lot easier.

```

1989 \floatstyle{plaintop}
1990 \restylefloat{scheme}
1991 \floatstyle{plain}
1992 \DeclareCaptionLabelSeparator{perquad}{.\quad}
1993 \captionsetup{
1994   singlelinecheck = off,
1995   labelfont       = {bf,it,sf},
1996   textfont        = sf,
1997   labelsep        = perquad
1998 }
1999 \captionsetup[figure]{textfont=rm}

```

\acs@table A patch or \table.

```

\table 2000 \newcommand*\acs@table(){}
2001 \let\acs@table\table
2002 \def\table{%
2003   \capsize
2004   \acs@table
2005 }

```

The bibliography has to be adjusted.

```

2006 \AtBeginDocument{%
2007   \def\bibsection{%
2008     \@startsection
2009       {section}
2010       {1}
2011       {\z@\z@{2.5mm}%
2012       \normalfont\acksize\bfseries
2013       \hrule\nobreak\vspace{1.2mm}\noindent\refname}%
2014   }%
2015   \let\bibfont\refsize
2016   \setlength{\bibhang}{0.61cm}%
2017   \setlength{\bibsep}{0mm}%
2018 }
2019 /jacsat

```

```

2020 (*jafcau)
2021 \ProvidesFile{achemso-jafcau.cfg}
2022 [2016/06/17 v3.10d achemso configuration: J. Agric. Food Chem.]
2023 \setkeys{acs}{
2024   articletitle = true,
2025   keywords      = true
2026 }
2027 \def\acs@type@list{article,suppinfo}
2028 \SectionNumbersOff
2029 </jafcau>
2030 (*jceaax)
2031 \ProvidesFile{achemso-jceaax.cfg}
2032 [2016/06/17 v3.10d achemso configuration: J. Chem. Eng. Data]
2033 \setkeys{acs}{articletitle = true}
2034 \def\acs@type@list{article,suppinfo}
2035 \def\refname{Literature Cited}
2036 \SectionNumbersOff
2037 </jceaax>
2038 (*jceda8)
2039 \ProvidesFile{achemso-jceda8.cfg}
2040 [2016/06/17 v3.10d achemso configuration: J. Chem. Ed.]
2041 \setkeys{acs}{
2042   articletitle = true,
2043   keywords      = true
2044 }
2045 \SectionNumbersOff
2046 \def\acs@type@list{article,suppinfo}
2047 \SectionNumbersOff
2048 </jceda8>
2049 (*jcisd8)
2050 \ProvidesFile{achemso-jcisd8.cfg}
2051 [2016/06/17 v3.10d achemso configuration: J. Chem. Inf. Model.]
2052 \setkeys{acs}{articletitle = true}
2053 \def\acs@type@list{article,suppinfo}
2054 \SectionNumbersOff
2055 </jcisd8>
2056 (*jtcce)
2057 \ProvidesFile{achemso-jtcce.cfg}
2058 [2016/06/17 v3.10d achemso configuration: J. Chem. Theory Comput.]
2059 \def\acs@type@list{article,suppinfo}
2060 \setkeys{acs}{
2061   maxauthors = 0
2062 }
2063 </jtcce>
2064 (*jmcmar)
2065 \ProvidesFile{achemso-jmcmar.cfg}
2066 [2016/06/17 v3.10d achemso configuration: J. Med. Chem.]
2067 \setkeys{acs}{articletitle = true}
2068 \def\acs@type@list{article,letter,perspective,suppinfo}
2069 \SectionNumbersOff
2070 \setlength{\acs@tocentry@height}{5.5cm}
2071 \setlength{\acs@tocentry@width}{21cm}
2072 </jmcmar>
2073 (*jnprdf)

```

```

2074 \ProvidesFile{achemso-jnprdf.cfg}
2075   [2016/06/17 v3.10d achemso configuration: J. Nat. Prod.]
2076 \renewcommand*{\abstractname}{ABSTRACT}
2077 \renewcommand*{\acknowledgementname}{ACKNOWLEDGEMENT}
2078 \renewcommand*{\suppinfoname}{ASSOCIATED CONTENT}
2079 \SectionNumbersOff
2080 \renewcommand*{\acs@abstract}{%
2081   \quotation
2082   \textbf{\abstractname} :}%
2083 }
2084 \AbstractOn
2085 \ifx\acs@manuscript\acs@manuscript@communication
2086   \AbstractOff
2087   \SectionsOff
2088 \fi
2089 \def\refname{%
2090   \ifnum\the\value{bibnote}>\z@\relax
2091     NOTES AND
2092   \fi
2093   REFERENCES}%
2094 }
2095 \captionsetup{%
2096   labelfont = bf,
2097   labelsep = period
2098 }
2099 \renewcommand\acs@suppinfo@print[1]{%
2100   \textbf{Supporting Information}%
2101   #1
2102   This material is available free of charge via the Internet at
2103   \url{http://pubs.acs.org/}.
2104 }
2105 </jnprdf>
2106 <*joceah>
2107 \ProvidesFile{achemso-joceah.cfg}
2108   [2016/06/17 v3.10d achemso configuration: J. Org. Chem.]
2109 \ifx\acs@manuscript\acs@manuscript@communication
2110   \AbstractOff
2111   \SectionsOff
2112 \fi
2113 \floatstyle{plaintop}
2114 \restylefloat{scheme}
2115 \floatstyle{plain}
2116 </joceah>

2117 <*jpcagh>
2118 \ProvidesFile{achemso-jpcagh.cfg}
2119   [2016/06/17 v3.10d achemso configuration: J. Phys. Chem. A]
2120 \def\acs@type@list{article,suppinfo}
2121 \setkeys{acs}{%
2122   articletitle = true,
2123   etalmode    = truncate,
2124   maxauthors  = 10
2125 }
2126 \SectionNumbersOff

```

```

2127 \captionsetup[table]{labelfont=bf, textfont=bf}
Title
2128 \g@addto@macro{\maketitle}{\newpage}
2129 </jpcafh>
2130 (*jpcbfk)
2131 \ProvidesFile{achemso-jpcbfk.cfg}
2132 [2016/06/17 v3.10d achemso configuration: J. Phys. Chem. B]
2133 \def\acs@type@list{article,suppinfo}
2134 \setkeys{acs}{%
2135   articletitle = true,
2136   etalmode     = truncate,
2137   maxauthors   = 10
2138 }
2139 \SectionNumbersOff
2140 \captionsetup[table]{labelfont=bf, textfont=bf}
2141 \g@addto@macro{\maketitle}{\newpage}
2142 </jpcbfk>
2143 (*jpccck)
2144 \ProvidesFile{achemso-jpccck.cfg}
2145 [2016/06/17 v3.10d achemso configuration: J. Phys. Chem. C]
2146 \def\acs@type@list{article,suppinfo}
2147 \setkeys{acs}{%
2148   articletitle = true,
2149   etalmode     = truncate,
2150   maxauthors   = 10
2151 }
2152 \SectionNumbersOff
2153 \captionsetup[table]{labelfont=bf, textfont=bf}
2154 \g@addto@macro{\maketitle}{\newpage}
2155 </jpccck>
2156 (*jpclcd)
2157 \ProvidesFile{achemso-jpclcd.cfg}
2158 [2016/06/17 v3.10d achemso configuration: J. Phys. Chem. Lett.]
2159 \setkeys{acs}{%
2160   articletitle = true,
2161   etalmode     = truncate,
2162   maxauthors   = 10,
2163   keywords      = true
2164 }
2165 \def\acs@type@default{letter}
2166 \def\acs@type@list{letter}
2167 \SectionNumbersOff
2168 \captionsetup[table]{labelfont=bf, textfont=bf}
2169 \g@addto@macro{\maketitle}{\newpage}
2170 \renewcommand{\acs@tocentry@print}[1]{%
2171   \gdef\acs@tocentry@text{\#1}%
2172 }
2173 \renewcommand*{\acs@abstract@extras}{%
2174   \begingroup
2175     \acs@tocentry@print@aux
2176   \endgroup
2177   \acs@keywords@print
2178   \newpage

```

```

2179 }
2180 \setlength\acs@tocentry@height{2in}
2181 \setlength\acs@tocentry@width{2in}
2182 </jpclcd>
2183 (*jprobs)
2184 \ProvidesFile{achemso-jprobs.cfg}
2185 [2016/06/17 v3.10d achemso configuration: J. Proteome Res.]
2186 \setkeys{acs}{%
2187   articletitle = true,
2188   keywords      = true
2189 }
2190 \def\acs@type@list{article,review,suppinfo}
2191 \SectionNumbersOff
2192 </jprobs>
2193 (*langd5)
2194 \ProvidesFile{achemso-langd5.cfg}
2195 [2016/06/17 v3.10d achemso configuration: Langmuir]
2196 \def\acs@type@list{article,letter,suppinfo}
2197 \setkeys{acs}{articletitle = true}
2198 \SectionNumbersOff
2199 </langd5>
2200 (*mamobx)
2201 \ProvidesFile{achemso-mamobx.cfg}
2202 [2016/06/17 v3.10d achemso configuration: Macromolecules]
2203 \SectionNumbersOff
2204 </mamobx>
2205 (*mpohbp)
2206 \ProvidesFile{achemso-mpohbp.cfg}
2207 [2016/06/17 v3.10d achemso configuration: Mol. Pharm.]
2208 \setkeys{acs}{%
2209   articletitle = true,
2210   keywords      = true
2211 }
2212 \def\acs@type@list{article,suppinfo}
2213 \SectionNumbersOff
2214 </mpohbp>
2215 (*nalefd)
2216 \ProvidesFile{achemso-nalefd.cfg}
2217 [2016/06/17 v3.10d achemso configuration: Nano Lett.]
2218 \setkeys{acs}{keywords = true}
2219 \def\acs@type@default{letter}
2220 \def\acs@type@list{letter}
2221 \SectionNumbersOff
2222 </nalefd>
2223 (*orlef7)
2224 \ProvidesFile{achemso-orlef7.cfg}
2225 [2016/06/17 v3.10d achemso configuration: Org. Lett.]
2226 \def\acs@type@default{letter}
2227 \def\acs@type@list{letter}
2228 \SectionsOff
2229 \setkeys{acs}{layout = twocolumn}
2230 \RequirePackage{xcolor}
2231 \definecolor{orglett}{RGB}{128,0,0}
2232 </orlef7>

```

```

2233 (*oprdfk)
2234 \ProvidesFile{achemso-oprdfk.cfg}
2235 [2016/06/17 v3.10d achemso configuration: Org. Proc. Res. Dev.]
2236 \def\acs@type@list{article,highlight,review,suppinfo}
2237 \SectionNumbersOff
2238 (/oprdfk)
2239 (*orgnd7)
2240 \ProvidesFile{achemso-orgnd7.cfg}
2241 [2016/06/17 v3.10d achemso configuration: Organometallics]
2242 \SectionNumbersOff
2243 \setkeys{acs}{articletitle = true}
2244 (/orgnd7)

```

## 9 Change History

v1.0		v3.2b
	General: Initial release of package by Mats Dahlgren .....	General: New <code>email</code> option .....
v2.0	1	v3.2c
	General: Re-write of package by Joseph Wright .....	General: Added <code>\fax</code> macro .....
v3.0		Added <code>\phone</code> macro .....
	General: 1	Fix so that <code>email</code> option is turned on by default .....
v3.1	General: 1	v3.3
	Added <code>\alsoaffiliation</code> macro .....	General: <code>\altaffiliation</code> macro checks for duplicate entries and uses only one footnote .....
v3.10	General: Add starred (subs)sections to TOC .....	New <code>layout</code> option .....
	Update address printing to reflect new ACS style .....	v3.3a
v3.10a	General: Add article titles for <i>Chem.</i> <i>Mater.</i> and <i>Chem. Rev.</i> .....	General: New <code>etalmode</code> option ...
v3.10b	\acs@tocentry@text: Define \acs@tocentry@text in all cases .....	v3.4
v3.10c	General: Add support for ACS <i>Omega</i> and <i>ACS Energy Lett.</i> ...	General: More detail on installation Require <code>cleveref</code> , dropping <code>variorref</code> use .....
v3.10d	General: Improve handling of doi values .....	v3.5
v3.2	General: 1 1 New <code>tocentry</code> section .....	General: New <code>BiBTeX</code> style file .....
	1	v3.5a
	1	General: Modify JACS Communication to print abstract .....
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