Information sources in chemistry

This is a brief introduction to the chemical literature, and how to search for and access print and online sources here at the University of Bristol.

1. Primary and secondary sources of information
In chemistry, most research is first published as primary sources in the form of journal articles, over half a million each year! Other primary sources include patents and reports (for commercially sensitive research), theses, conference papers and research monographs (a type of book).

Secondary sources of information are available to help guide users to the primary literature, and are reworkings of primary literature into a more digestible form. They include databases, reviews, textbooks and encyclopedias (details below). Normally you should reference primary sources. As with most other libraries, we cannot provide access to all primary and secondary sources (the costs are prohibitive), though the Library does provide access to the key ones – see the ‘Locating books and journals’ section below for advice on finding what we do have and what to do if you need something we don’t.

2. Searching the literature using databases:
Databases are better than Search engines, eg Google and Google Scholar, for systematic literature searching as they only index each reference once, they index a known range of sources/journals, and often have extra search facilities (eg structure searching), etc. These and other databases can be accessed via the ‘Databases (via MeTaLib)’ link on the Library home page.

Some of the journal article and other references you find we will have access to and some not – look out for our Get it! buttons on major databases, which will help with this. See the ‘Locating books and journals’ section below for further advice.

Key databases for chemists:
- **Web of Science** [webofknowledge.com/wos](webofknowledge.com/wos) (you may need to use your UOB login)
  Web of Science includes Science Citation Index (covering 1900 to present; selective from 1900-1944) and contains references, some with abstracts, to over 55 million records from over 12,000 journal titles and conference proceedings covering science, arts, humanities, and the social sciences. If you know of a key article you can use citation searching on WoS to find other more recent articles that have cited it. Author and keyword searching also available, though to search for a chemical compound, or if you need a comprehensive search, SciFinder would be better.
- **SciFinder** [scifinder.cas.org](scifinder.cas.org)
  The most comprehensive database for chemistry contains over 36 million literature references, most with abstracts, to journal articles, patents, conference papers, reports, dissertations and books covering chemistry from 1907 to date, together with 68 million substances. To use SciFinder you must first complete a personal registration via: [www.bris.ac.uk/library/support/subjects/chemistry/uobonly/](www.bris.ac.uk/library/support/subjects/chemistry/uobonly/) (UOB login needed).
- **Reaxys** [www.reaxys.com/](www.reaxys.com/)
  (see Reaxys handout for more details)
  Structure/property data for organic and inorganic compounds from 400 journals plus literature data from 16000 journal titles. Good for finding property data, but not comprehensive.
- **More information about these and other useful databases**
  See the Databases useful for Chemists handout.

3. Accessing books and journals in the Library and online:
- **Use Library Search** on the Library home page at [www.bris.ac.uk/library](www.bris.ac.uk/library) to access books, journals, and more in the University Library and online. It also allows you to reserve a book that is on loan, in which case the Library will try to get it back for you within 7 days (in normal circumstances).
- **Library Search** also includes an Everything search option which searches a huge collection of journal articles, so can be used for a quick and easy search, but is not comprehensive.
- **Library Search** is also available via the MyBristol portal (Library tab): [www.bristol.ac.uk/mybristol](www.bristol.ac.uk/mybristol)
- For items not held in print or available online, you can use the inter-library loan system (a cost is involved – see [www.bris.ac.uk/library/support/subjects/chemistry/ill](www.bris.ac.uk/library/support/subjects/chemistry/ill) for advice).
4. Searching the Internet:
For advice on search engines, see www.bristol.ac.uk/library/support/findinginfo/search-engines/ Search engines can be a useful way to find a few references for a subject or to track down data, but be wary of the quality and accuracy of the information you find on the Internet. Also, if you are doing some scientific writing and/or are asked to find a literature value you will need to quote primary sources, eg journal articles or reference books and not just a URL.

5. Searching for particular data:
For online general reference sources try the ‘Material type’ categories of resources found via the ‘Databases (via MetaLib)’ link on the Library home page.

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<th>A selection of chemistry reference tools follows; for more possible sources see <a href="http://www.bris.ac.uk/library/support/subjects/chemistry/#quickref">www.bris.ac.uk/library/support/subjects/chemistry/#quickref</a> and the ‘Data sources’ section of <a href="http://www.bris.ac.uk/library/support/subjects/chemistry/#internet">www.bris.ac.uk/library/support/subjects/chemistry/#internet</a></th>
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<td>CRC handbook of chemistry &amp; physics online at <a href="http://www.hbcpnetbase.com">www.hbcpnetbase.com</a> (print copies can be found in the Chemistry Library at XR, where we keep other Quick reference dictionaries and data books of chemistry including Kaye &amp; Laby, Tables of physical and chemical constants -- Bennett, Concise chemical &amp; technical dictionary -- Merck index (good for drugs/biologicals) -- Concise encyclopedia chemistry -- Lange’s handbook of chemistry)</td>
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<td>Reaxys, for organic and inorganic compounds is an online database (see 2 above). Other Subject specific data books and handbooks in print include Dictionary of organic compounds -- Dictionary of organometallic compounds -- JANAF thermochemical tables -- Polymer handbook</td>
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<td>Subject specific encyclopedias include -- Ency. of analytical science -- Ency. of global change -- Ency. of inorganic chemistry I &amp; II -- Comprehensive organometallic chemistry I to III, Comprehensive coordination chemistry I &amp; II -- Comprehensive supramolecular chemistry -- Comprehensive organic synthesis (see web page for details of polymer and materials encyclopedias held in other branches)</td>
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<tr>
<td>Spectra - various sets of spectra are available in the Chemistry Library at X(F5..) or at the Library Desk</td>
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<td>Safety data - Chemistry Library at X(A7) Chemical catalogues - Chemistry Library at X(M9)</td>
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Please note: if you find data using a search engine follow the advice in 4 above.

6. Current awareness publications
Secondary sources can also help you to keep up with the primary literature. Web of Science and SciFinder (see above) are very useful for current awareness. You can also set up alerts on Library Search. Alternatively, there are general alerting services such as Zetoc (see MetaLib). The Internet can be useful, by using search engines or subject gateways to find useful sites and/or joining relevant newsgroups (though be wary of the quality of information!). Looking at contents pages of key journals online is also worthwhile.

7. Reviews, bibliographies and textbooks
There are a wide range of specialist journals which publish reviews of subjects - a summary of what has been happening in the subject over a number of years (often a single year), with a list of references to the original articles. These secondary sources can often provide a good starting point when beginning to look at a new subject. Titles include Chemical Reviews, or include phrases like Annual Review of..., Annual Progress in..., Reviews in... Review articles also appear in ‘normal’ journals. A bibliography is a list of references on a subject, sometimes included in a book on the subject, or sometimes published separately in book or serial form, with titles including ‘Bibliography on ...’ or ‘.... : a bibliography’. Textbooks are a sort of ‘review book’ which surveys a subject and gives references for further reading. In some circumstances it is acceptable to reference these types of publication at the start/introduction of a piece of scientific writing.

Off-campus access to eJournals and databases
For advice on off-campus/off-site access to electronic journals and databases see: www.bris.ac.uk/library/resources/eresources/access/#off-site

Finding out more & help
• See www.bris.ac.uk/library/support/subjects/chemistry/#skills for other useful downloadable handouts and links to online resources.
• Useful handouts are available at the Chemistry Library Information display, and books at classmark A2.
• Library staff are happy to help you with finding information, and obtaining material not held in our branch libraries using inter-library loans. The Chemistry Subject Librarian has particular expertise.
• The Library website www.bris.ac.uk/library will answer many of your questions.