

Benefits of patent literature

A unique and valuable source of scientific and technical information, patent literature is often overlooked and underutilized by academic researchers. This is understandable, given that until recently it was difficult for researchers to access patent information. Few university libraries had patent collections and ordering copies of patents was time-consuming. Arcane patent classification manuals and expensive commercial databases were the only search tools available to researchers.

However, patent information is now readily accessible for free on the Internet. Patent offices in most developed nations, including Canada and the U.S., maintain web-based patent databases containing millions of patent records. The European Patent Office's *esp@cenet* system alone has more than 50 million patent documents from approximately 70 countries, the earliest dating from the mid-19th century.

There are many benefits to consulting patent literature. Patents are international and interdisciplinary, covering innovations in every field of technology during the last 200 years. Patents disclose the research of industrial and private inventors that is not published in scientific journals and proceedings. Patents reveal emerging technologies and new applications for old technologies. Patents bridge the gap between basic research and applied technology. By searching patent literature prior to embarking on a new research project or grant application, one avoids duplicating work that has already been done.

New discoveries and innovations, especially in chemistry,



MICHAEL WHITE

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biotechnology and materials science, often appear in patents before they are reported in scientific journals. According to the Chemical Abstracts Service (CAS), more than 50 per cent of the new chemical substances added each year to the CAS Registry is obtained from patents rather than scientific articles. This is not a recent development. The discoveries of Karl Ziegler in the 1930s and Giulio Natta in the early 1950s in the field of polymer research were disclosed in patents years before they were published in scientific journals. Leo Baekeland, inventor of Bakelite, the world's first synthetic polymer, filed patent applications in 1907, two years before publishing his research.

Patent literature is also a window onto scientific research in developing countries. In China, university patent filings are increasing at a faster rate than published scholarly articles due, in part, to intellectual property law reform and government policies encouraging domestic innovation and commercialization. In 2004 Chinese research institutes and universities filed 19,000 new patent applications, almost 20 per cent of the total applications

filed with China's patent office. Many of the applications filed in China and other developing countries will become the basis for translated applications filed in developed countries. For example, Chinese, Korean and Taiwanese inventors filed 35,500 patent applications in Canada and the U.S in 2004-2005. This is a boon to scientists and engineers in North America who might not otherwise have access to this information because of language barriers and the relatively low number of researchers from developing countries who publish in western scientific journals.

With 1.5 million patent applications filed last year and 10-12 million pending applications worldwide, patent literature is a rich, vast and rapidly growing source of scientific and technical information. The proliferation of free web-based patent databases and search tools is making it easier for academic researchers to discover the hidden value of this unique resource.

For more information about searching patents, contact Michael White at 533-6785 or visit the Engineering and Science Library at library.queensu.ca/webeng.

Michael White is the Librarian for Research Services in the Engineering and Science Library.

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