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In recent articles about the value of the Internet in general and the World Wide Web specifically for plastics technology, we talked about sites related to plastics, polymers, and plastics processing. There are, however, some sites that are of great value to the plastics processor, equipment designer, or materials specialist that are not strictly limited to plastics and polymers. Some of the most valuable sites for the designers are sites for patent searches. This article will cover one of these sites and the features you can find there.

Patent protection is offered in part as a means of advancing the state of knowledge in science and technology. The patent owner agrees to make public how a device is designed or operated, how a chemical is synthesized, or how a new material can be used in exchange for a period of protection to exploit that idea. In this way, the inventor has a finite time period with which to use his or her own idea, but others may learn from the invention and begin to improve upon it.

If you are an equipment designer, develop new polymeric materials or processes, patents can be a blessing or a bane to your existence. You may find that the very clever idea you had was also had by someone else 12 years ago. You may also find that a route you need to produce a highly filled, thermally sensitive polymer was disclosed in an expired patent and is now yours for the using.

The patent database is very much like a very diffuse text book on a given topic. Reading the patent literature will give one a quick education about the state of the art in the field, and also reveal much about the practical applications of the technology.

There are many ways available to search the patent database, both United States and world wide, but one on the web that is particularly useful to the novice or occasional searcher is one offered by IBM. Located at: HTTP://WWW.PATENTS.IBM.COM

The IBM patents database provides a searchable database of US patents from 1971 onward. The web site offers several ways to access patents. You may enter a patent number, or you may search the database by inventor, assignee, title, abstract, agent, or claims. A Boolean search system lets you use the common Boolean operators AND, OR, AND NOT. For example, if one were to search for work on devolatilization, one might search on devolatilization AND plastics or devolatilization AND polymers. Like all searches, one has to be thorough about choices for search words. For devolatilization work, one would be prudent to also search under degassing, stripping, etc. The search will generate up to 200 patents at a time. Now the fun begins. You may click on each patent title to call up a summary page of that patent which will let you do any number of things. First and foremost, you may access a graphical image of the patent (all figures and pages included) to read the patent. You can also print pages to your printer or you may save portions to the clipboard.

The summary page for each patent contains:

The inventors, the patent number, the title of the patent, the assignees, listing of and links to the appropriate international class of patents, listing of and links to the appropriate US class of patents, the field of search, an abstract, a link to patents that reference this patent, links to patents referenced by this patent, the claims, related US applications, foreign and other references, the attorney - agent - or firm that filed the patent, and the patent examiners. For example, if one were to search on Kruder (inventor) AND extruder (any field), one would generate a list of six patents which have the word extruder in the title, abstract, or claim on which anyone named Kruder was an inventor. In this case, George Kruder was the only Kruder who showed up on the list. Selecting a patent on the list whose title was "Vented Extruder" one comes to US patent 3992500, with Russ Nichols as co-inventor, two venerable names in extrusion technology. The patent is assigned to Koehring Company of Milwaukee, WI, and dates from 1976.

The international and US classes are interesting reading. Clicking on these links will turn up lists of related patents that may or may not be part of the original search, but have been classified as similar technology by the International and US patent office administrators. Checking the two International classes turns up patents dominated by screw design and mixing devices in one class, while a second cited class is dominated by pasta and dough mixing devices. The US class is a bit more confusing. While it contains patents on extrusion design, the list is topped by a patent for eliminating surface irregularities on the wrap-around window of a torpedo nose array, and a process for the manufacture of breast prostheses, two topics that at best are peripherally related to devolatilizing extruders.

If one activates the link to the patents that reference the current patent (in this case there are 14 patents that reference the work of Kruder and Nichols) one finds links to each of these patents, along with their titles. If one were interested in devolatilization patents, clearly this represents a thread to other patents of similar technology.

One may also click on any of the patents referenced by Kruder and Nichols to jump to similar pages for those patents, etc., etc., etc. It is quite easy to spend an afternoon looking at a relatively narrow field of technology.

There are several other very nice features to this patent search web site. For your entertainment, they show a listing and copies of obscure patents (for example, US patent number 5505002, Versatile Necktie Tying Aid Gauge), a site for links on licensing information, but most important, a means to order copies of patents.

The copying and ordering system is provided by Optipat, Inc., a company not associated with IBM. Optipat will provide copies via fax, paper copies by mail, or, if you are ordering lots of patents, they will load them onto CD ROMS for you. The cost of a patent is $2.50 if less than 100 pages, and loading patents onto a CD ROM brings an additional $8 charge for the CD. I ordered about 40 patents on devolatilization from two different searches, and received them on CD ROM two days later. The CDs are searchable and make it quite easy to extract copies of illustrations, etc., for technical presentations.

The IBM web page also provides a page of related links. These include links to Manning and Napier Information Services, who offer a "unique, state-of-the-art, automated patent analysis and search product" which allows one to map patent relationships among different companies. QPAT-US offers full-text search and retrieval of 2O years of the US patent file, and also offers encrypted searches. Knight-Ridder (now Dialog) offers databases in several categories, including chemicals, food and agriculture, intellectual property, technology, etc. Each of these databases gathers its material from a large number of listed sources. This site was quite impressive as a current awareness source.

So why did I pick the example of a devolatilizing extruder? Devolatilization represents a great example of a field where there is probably far more to be learned from a decent search of the patent literature (hundreds of patents on degassing and devolatilization) than from published texts on the topic (three of them), especially if one is interested in applications of the technology.

COMING SOON:

Review of US Patent and Trademark Office site, European Patent Office site, and the US Patent Citation Database (Community of Science) site.

- Rob Jerman Rohm and Haas

See also:

- Finding what you need on the internet
- Make a business of your consulting

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