Linking Photonic Band Gaps

Using the internet, everybody has experienced the frustration of waiting for data to be downloaded. As the volume of data transmission over the network soars, network capacity becomes the bottleneck that limits the speed of internet traffic. To realize broadband communication, new concepts and photonic materials need to be developed. The introduction of photonic crystals, which have periodic structures with alternating refractive indexes, is a new approach to manipulate photons and may revolutionize the way we communicate. Therefore, photonic crystals have intrigued tremendous interest from physicists, chemists, materials scientists, and electrical engineers. Meanwhile, researchers often find themselves flooded with information from a variety of sources due to the rapid growth of this field.

PBGLink.com (Figure 1), which compiles over 1000 links to photonic resources, is dedicated to "photonic band gap research in particular and microphotonics in general". It was launched at the web server of the NEC Research Institute in 1998, and has served as an informational gateway to people who are interested in the area of photonic band gap materials. More than 70000 visitors from both academia and industry have surfed the web site. Many of them are frequent users, including myself. Besides the main server in the US, mirror sites can also be found in Germany and China. This web site provides comprehensive coverage on both fundamental research and photonic band gap applications. For those who are currently working on photonic crystals, the site serves as a helpful resource to keep up with recent advances; for general readers, this site is a useful library to access online tutorials and news articles.

The structure of the web site is organized into eight sections: groups, conferences, software, patents, bibliography, theses, miscellanea, and statistics (Figure 1). Each section is then divided into different levels to more specific information on each topic. The group category contains more than 500 research laboratories from more than 20 countries, sorted by location and type of institution: university, government, and industry. In the US, they are grouped by states for prompt browsing. Given the scenario that many academic web sites tend to describe the fundamentals of photonic crystals as well as their recent research progress, PBGlink.com is a valuable resource for educational purposes to students and beginning researchers. In comparison, the short list of industrial groups indicates the lag between fundamental research and industrial application, which may be due to the difficulty to produce photonic crystals and couple them to real devices. Conferences are listed chronologically with optically highlighted calls for papers and deadlines. There are links to a variety of freeware, shareware, and commercial software. With a simple mouse click, patents are displayed in the corresponding page at Delphion.com. The web site also recommends text and reference books, which are linked to amazon.com for review and purchasing. To keep up with the latest development or exchange information, readers can also subscribe to a mailing list and alerting service. Compared to the well structured links for browsing, the search tool offered by the site is unfortunately less useful.

The photonic band gap link probably is one of the best photonic band gap online resources. The web design is plain and simple, but it is well organized with the information carefully categorized and easy to navigate. The wealth of information and versatility of browsing make it well worth visiting.

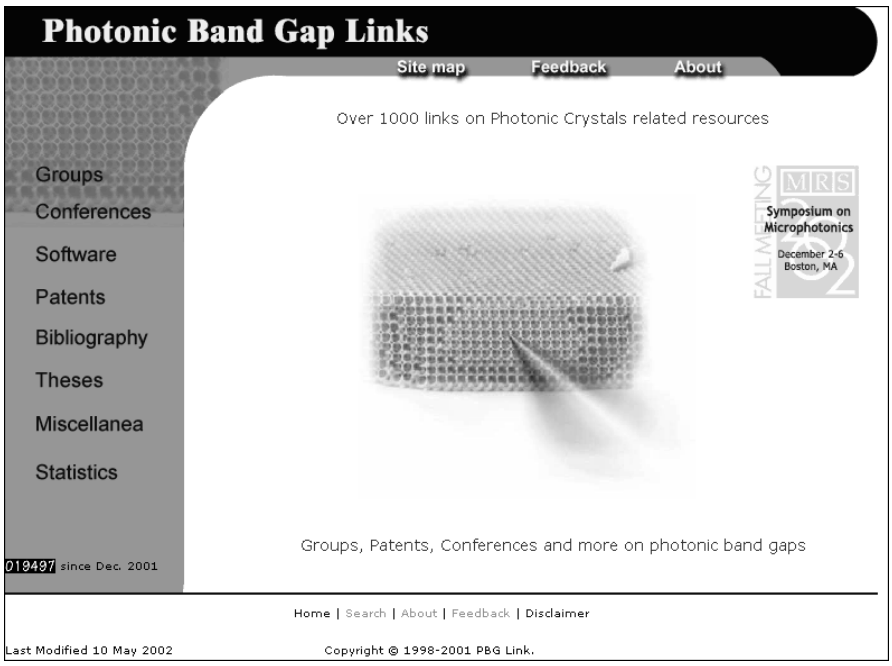

Figure 1. Homepage of the photonic band gap link site.

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Suggest a web site or submit a review:
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For further information visit:
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