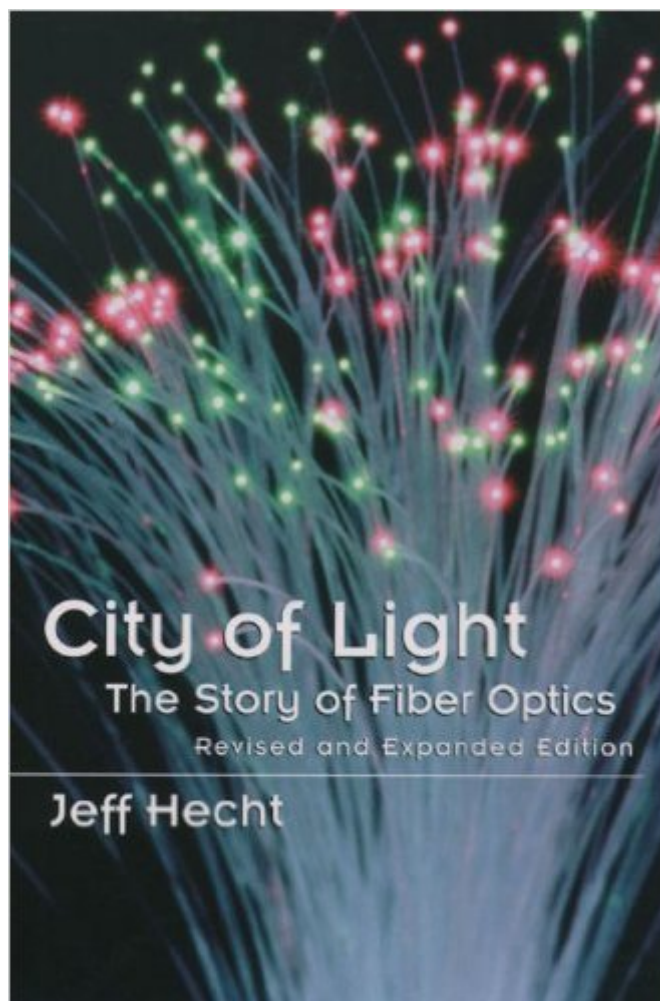


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# City Of Light: The Story Of Fiber Optics (Sloan Technology Series)



## **Synopsis**

City of Light tells the story of fiber optics, tracing its transformation from 19th-century parlor trick into the foundation of our global communications network. Written for a broad audience by a journalist who has covered the field for twenty years, the book is a lively account of both the people and the ideas behind this revolutionary technology. The basic concept underlying fiber optics was first explored in the 1840s when researchers used jets of water to guide light in laboratory demonstrations. The idea caught the public eye decades later when it was used to create stunning illuminated fountains at many of the great Victorian exhibitions. The modern version of fiber optics--using flexible glass fibers to transmit light--was discovered independently five times through the first half of the century, and one of its first key applications was the endoscope, which for the first time allowed physicians to look inside the body without surgery. Endoscopes became practical in 1956 when a college undergraduate discovered how to make solid glass fibers with a glass cladding. With the invention of the laser, researchers grew interested in optical communications. While Bell Labs and others tried to send laser beams through the atmosphere or hollow light pipes, a small group at Standard Telecommunication Laboratories looked at guiding light by transparent fibers. Led by the recipient of the 2009 Nobel Prize in Physics, Charles K. Kao, they proposed the idea of fiber-optic communications and demonstrated that contrary to what many researchers thought glass could be made clear enough to transmit light over great distances. Following these ideas, Corning Glass Works developed the first low-loss glass fibers in 1970. From this point fiber-optic communications developed rapidly. The first experimental phone links were tested on live telephone traffic in 1977 and within half a dozen years long-distance companies were laying fiber cables for their national backbone systems. In 1988, the first transatlantic fiber-optic cable connected Europe with North America, and now fiber optics are the key element in global communications. The story continues today as fiber optics spread through the communication grid that connects homes and offices, creating huge information pipelines and replacing copper wires. The book concludes with a look at some of the exciting potential developments of this technology.

## **Book Information**

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## Customer Reviews

This book has a wealth of information on the early years of fibre optics that I have not seen anywhere else. It is full of names and brief explanations of their contribution. But overall I thought this was a dull, slow moving book with little insight. More of an ongoing collection of notes that have been put together for another better book on the history of fibre once the real story finally emerges. There is very little science here. You won't learn much about light physics or why the technology works -only that it does and who patented it. (But the science may be reserved for Hecht's other book.) Also, for those who are trying to keep up with Gilder this book will be disappointing. There is nothing on DWDM (one brief, unexplained mention) or nothing that maps out the current players, companies, or technologies. (I can tell that Gilder has read it because some of the historical facts have been mentioned in the GTR) But there are only a few pages at the end that try to update where the technology has been in the last 10 years, where it is going or why. Huge gaps where a technology is mentioned but not even defined, much less explained. I wish there was a better book on the subject, but for now this is it, and maybe it is worth reading for that reason alone. Sorry to be so critical, but if you like Burke's "Connections" this will only get you lost. It probably would not have been published but for the sudden surge in tech stocks. I hope the Slone series is not all like this.

Hecht makes fiber optics understandable to even the most non-technical of us. The constant stream of anecdotes keeps you turning the pages. The stories from the laboratories are great. You really get the feel for the personalities of the competing scientists. I would recommend this book to anyone

interested in the field or interested in technology in general and how an invention is born from a parlor trick and becomes a telecommunications necessity.

Hecht does a good job of explaining where the technology of fiber optics communications came from. His book is not an explanation of how fiber optics communications works, but a history. I have a reasonably good background in fiber optics communications so it's difficult for me to judge whether someone who knew nothing about it would find it easy to follow, although I think they would. I would particularly recommend the book to fiber optic techies - it really makes the technology more meaningful when you understand how the technology developed. A fine job by a good writer - very close to five stars. And if you're technically oriented and want more knowledge of fiber optic technology, I'd recommend "Optical Networks" by Ramaswami and Sivarajan.

Fiber optics, the backbone of local and international communications and of the Internet, seems like a new technology, but in this comprehensive history of the field Jeff Hecht describes the Victorian origins of light guiding via jets of water. In the first half of the 20th century a number of researchers independently discovered flexible glass fibers, and with the introduction of the laser in the 1950s long-distance optical communication became a possibility. The main section of the book focuses on the work of researchers in Britain, Japan, and the United States from the 1950s through the 1980s as they overcome many technical problems and develop the beginnings of modern fiber optic cables, documenting the failures, the dead-ends, and the ultimate success in the early 1980s. Extensively researched and annotated, with much material from primary sources, City of Light is accessible to the non-technical reader, yet has enough detail and links to additional sources to satisfy students of engineering history.

I worked on R&D of fiber optic communication system and device since 1976. Thus, I worked for period as same as the latter 1/3 of this book. I attended OFC from 1999 to 2013 and felt the bubble's up and down by myself. I found several (or more) familiar names with whom I worked and who wrote papers I read again and again. Many technologies are described in the book, but also many people who devoted their time and efforts for fiber optics are introduced. Good book to summarize my own R&D experience in the technical field.

Just like the title says, it is a story/history of optical fibers narrated like a thriller with suspense! It is well detailed and I learnt a lot about science/scientist (and beliefs) by reading this book. Nothing is

impossible at the end.

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