



C. Yeh, F. Shimabukuro

# The Essence of Dielectric Waveguides

- Well-written, offers a comprehensive and detailed treatment of dielectric waveguides with emphasis on their applications in optical communications.
- The book that has been a basis about waveguides is the "Field Theory of Guided Waves", Collins (IEEE Press, 1990). However, dielectric waveguides were treated in just one chapter.
- This is a welcome reference for new researchers or for an advanced (graduate level) course on guided-wave optics and photonic systems.

"It is our responsibility as scientists, knowing the great progress which comes from a satisfactory philosophy of ignorance, the great progress which is the fruit of freedom of thought, to proclaim the value of this freedom, to teach how doubt is not to be feared but welcomed and discussed; and to demand this freedom as our duty to all coming generations" — Richard Feynman, 1955 — First, as students from Cal Tech and MIT and then as researchers and teachers from other universities and industry, we are benefited greatly from the philosophy of learning practiced by these and other distinguished universities in the US, namely, learn and teach the fundamentals and not the fashions. Under this guiding light, this comprehensive book was formed, covering the most important modern topics on guided waves. As such, it may be used as a research reference book or as a textbook for senior undergraduate students or first-year graduate students. The lectures for an one-semester or one-quarter course on guided waves along surface wave structures can begin with a review of EM fundamentals (Chap. 2), and then move on to a discussion on the general important and relevant characteristics of these guided surface waves (Chap. 3). Then follows the rigorous analytic treatment for canonical structures (planar, circular, and elliptical) (Chaps. 4–8). By the end of these lectures, the students would have gained a very solid theoretical foundation on this subject. Then the fun part starts.

2008, XVI, 522 p.

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