

# Engineering Electromagnetic Fields Waves

## **ECE 329 - Fields and Waves I :: ECE ILLINOIS**

Quantum Mechanics, H. Kroemer, Prentice Hall, 1994. Electrons in Solids, Third edition, R.H. Bube, Academic Press, 1992. Solid State Electronic Devices, Fifth edition ...

Electromagnetism is the physics of the electromagnetic field: a field, encompassing all of space, which exerts a force on those particles that possess a property known as electric charge, and is in turn affected by the presence and motion of such particles. The term electrodynamics is sometimes...

5.5.2 Electromagnetic pressures acting on permeable and dielectric media..... 145

5.6 Photonic forces ..... 147

Electromagnetic fields and waves fundamentals and their engineering applications: static electric and magnetic fields; energy storage; Maxwell's equations for time-varying fields; wave solutions in free space, dielectrics and conducting media, transmission line systems; time- and frequency-domain analysis of transmission line circuits and Smith chart applications.

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Lecture 16. Energy in electric and magnetic fields; principle of virtual work to find electric and magnetic forces; magnetic circuit problems.

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