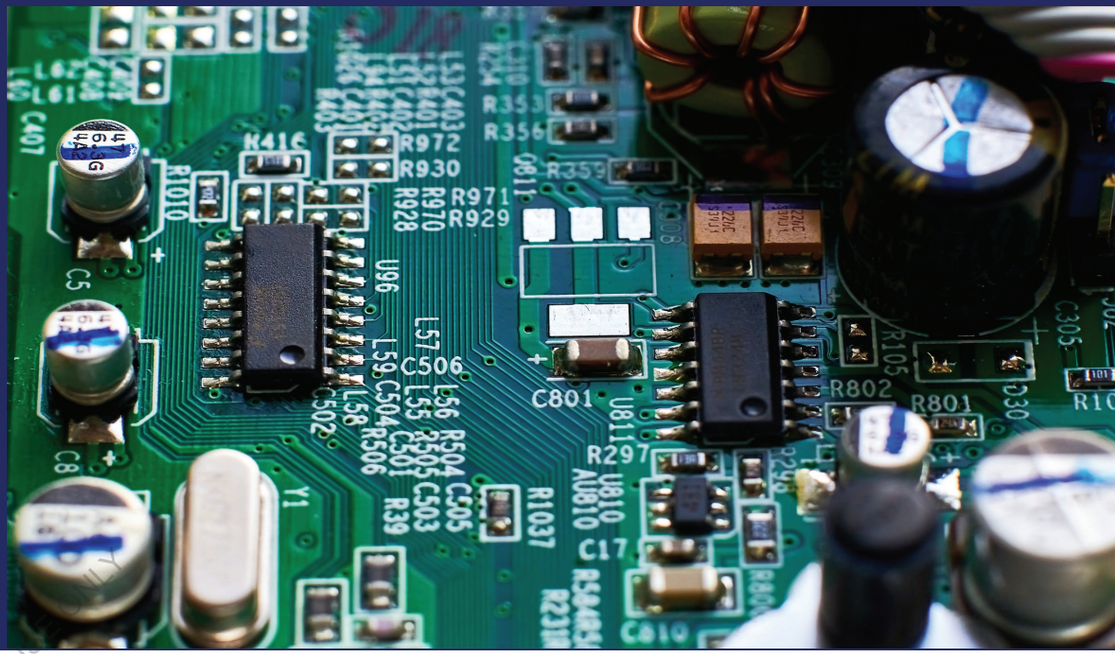
In recent days the state of art technology is the development of an instrumentation, for industrials, agricultural and R & D etc sectors. Recently, it is found that, the characterization of materials plays vital role in the field of material science. For materials research the different properties of the materials are explored, to investigate the structural details of materials under investigation. The properties to be determined depend upon the material and their application potential. Investigations of various properties, particularly of magnetic materials are of great interest. It is found that, the magnetic material reflects their characteristics through magnetic parameters such as Saturation Magnetization (Ms), Magnetic Moment (ηβ), Initial Permeability (μ), AC susceptibility (χ), Corecivity (Hc), and Retaintivity (Mr) etc. Therefore, in order to investigate the magnetic properties one should use sophisticated instrumentation. Microcontroller based embedded system is found to be most reliable. Therefore, Smart embedded system design issues for measurement of AC Susceptibility of Magnetic Material using high performance Microcontroller presented in this book.



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