Electrostatic discharge (ESD) is the sudden flow of electricity between two electrically charged objects caused by contact, an electrical short, or dielectric breakdown. A buildup of static electricity can be caused by tribocharging or by electrostatic induction. The ESD occurs when differently-charged objects are brought close together or when the dielectric between them breaks down, often creating a visible spark.

1. INTRODUCTION
Electrostatic damage of Electronic equipment and components by operating personnel is one of the most significant problems, which directly affects the reliability, and operational maintainability of electronic equipment. With advances in manufacturing technologies of semi-conductor devices e.g. LSI, VLSI, ULSI technology of ICs resulting in higher circuit densities with higher unit performance but quite often-higher static susceptibility. Such devices, which can be easily damaged by static discharge, are called Static Sensitive Devices (SSD). Electrostatic discharge is defined as the transfer of electric charge between bodies at different electrical potentials [1]. From lightning strikes to a zap from a doorknob on a dry day, ESD events are common occurrences. In today’s electronic age, it is necessary to protect integrated circuits (ICs) from ESD by shunting the current safely away from or through the device during an ESD event. ICs are subject to ESD during manufacturing and assembly as well as during field use and service. The high current density present during an ESD event can cause thermal damage and induce voltages sufficient. Even more important, this book explains how to design equipment to prevent ESD problems. This discussion of ESD design solutions not only includes design guidelines, but explains why they work. It also exposes myths that have developed about ESD and why they are incorrect. Finally, this book discusses the methods of testing for ESD problems. This discussion covers not only the test hardware, but also test procedures and methods that ensure meaningful results. Warren Boxleitner is the author of Electrostatic Discharge and Electronic Equipment: A Practical Guide for Designing to Prevent ESD Problems, published by Wiley. Table of contents. Preface. Chapter 1: A Model of the Electrostatic Discharge (ESD) Event. Chapter 2: ESD Effects in Electronic Equipment.