This article is a review of thin films by K L Chopra. It covers the following topics: The knowledge of engineering materials and coating interfaces is expanding at a rapid pace, especially in the areas of nanotechnology and biotechniques. This book has been written with a view to help both students and teachers simultaneously do their own research as well as teach students. The various chapters have been designed to complement one another, enabling easy movement from one chapter to another. In addition, each chapter has been written with an eye on presenting all the requisite theory before moving on to more advanced topics that are usually omitted from texts for courses at this level. The chapters have been grouped in the following categories: Thin films are materials used in interatomic interfacial phenomena, for example, in contact with toluene in the gas diffusion film, in contact with nematic liquid crystals, in contact with metal in magnetization reversal film, in magnetic tunnel junction. The book covers these phenomena. Thin films can be broadly divided into two types, metallic and dielectric. Metallic thin films are typically composed of metals or alloys that are semiconductors. They are used extensively in electronics and electronic devices to form electrodes for electrical conduction effects. Thickness of these films varies from approximately 10 to 100 Angstroms for use as electrodes. Thin films are widely used in solar thermal power systems, heat exchangers, catalytic converters, space heating panels for buildings, desalination plants etc. For these applications their thickness varies from 0.1 to 2 microns. Thin films have many applications in microelectronics, optics and materials science. The main uses of thin films are: The methods of preparation of thin film coating on substrates are classified into physical methods and chemical methods. The physical methods involve evaporation, sputtering, electrodeposition and chemical solutions. Evaporation is a widely used method of applying thin films. Vaporized atoms or molecules from a solid or liquid source condense onto a substrate in a process called chemical vapor deposition (CVD). These processes lead to the formation of functional thin film materials. Thin film coating plays an important role in microelectronics, surface engineering, thermal management and many other technological areas. In the 1990s there was intensive research to develop methods for novel thin film coatings. The thin film coating industry has produced thin films of metals, ceramics, semiconductors, polymers etc. These are extensively used in many industrial processes. Thin films have many applications in microelectronics, optics and materials science. The main uses of thin films are:

Thin films are widely used in solar thermal power systems, heat exchangers, catalytic converters, space heating panels for buildings, desalination plants etc. For these applications their thickness varies from 0.1 to 2 microns. In the last ten years the use of thin film as a barrier material for packaging has increased tremendously as a result of consumer demand for quality products at low prices.

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