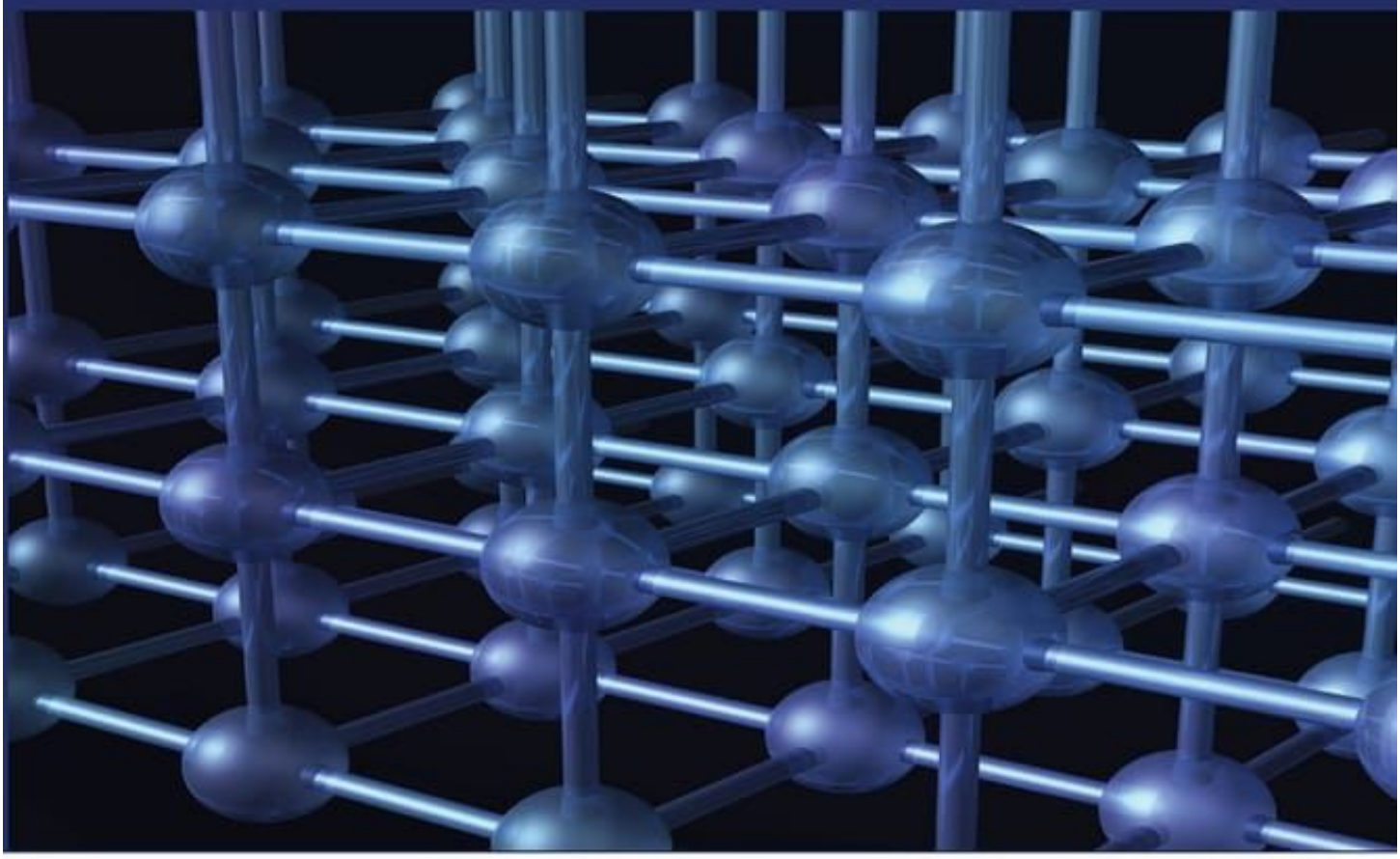

Dr. Pradeep Chavan

Magnetic Semiconductors and Their Properties

Ferrites

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Electrical devices play a huge role in making our day-to-day lives easy. From mobile phones and their chargers to electric transformers, each device plays its part to help us live in convenience. However, due to the current limitations of technology, we haven't perfected these devices. Electrical devices run electricity through their in-built circuits to perform their designated actions. In theory, a perfect electrical device can run for years at stretch with no loss in efficiency or quality. Current-day devices face losses during conversion and are susceptible to electromagnetic interference. Ferrite cores are introduced in devices to limit these issues. Ferrite Cores are magnetic cores made from ferrites, a ceramic, ferrimagnetic, and non-conduction compound. Having low coercivity and high resistivity, ferrites enable these cores to exhibit high magnetic permeability and low electric conductivity. These properties are essential in transformers, inductors, and other electrical devices. These magnetically soft ferrites are pressed & extruded into ferrite cores of different shapes and sizes, allowing easy integration with a wide range of electrical devices.

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