

Overview

Magnetron sputtering is one of the well-known Physical Vapor Deposition (PVD) technique for generating defect-free thin films at low deposition temperatures. Contrary to any other PVD techniques, magnetron sputtering is a process in which the removal of the target material (in other words like evaporation) takes place through the momentum transfer process. Since it is a momentum transfer process, literally using this technique, most of the materials deposition can be done. As on date, the facility at ARCI is a lab scale equipment with planar as well as cylindrical cathodes. The magnetron sputtering facility with its unique advantages can be used for developing thin films that are key to major sectors like; automobile, aerospace, manufacturing, optics, electronics, alternate energy, biomedical, sensors, etc.

Key Features

- The facility is capable of developing thin films on internal or external surfaces of any regular objects.
- Shortly High Power Impulse Magnetron Sputter (HIPIMS) capability will be associated with this system.

Potential Applications

- Any metallic, nitride or oxide coatings can be deposited
- Solar selective coatings for solar thermal applications
- Diffusion barrier coatings for electronic components
- Decorative coatings for aesthetic applications
- Biocompatible coatings for biomedical applications
- Coatings for developing different sensors

Status	1	2	3	4	5	6	7	8	9	10
--------	---	---	---	---	---	---	---	---	---	----

Major Patents / Publications

Patent: “Improved cylindrical magnetron cathode and a process for depositing thin films on surfaces using the said cathode” **application No. 21/DEL/2008, January 3 2008.**