



INSTITUTE COLLOQUIUM

INDIAN INSTITUTE OF SCIENCE
BANGALORE

PROF. S Mohan
Department of Instrumentation

will deliver a lecture

on

**Ion beam processing of oxide thin films for multi-layer
device applications**

On Tuesday, the 23 April 2002
at 4.00 PM in the Faculty Hall.

THE DIRECTOR
will preside.

All are cordially invited.

Coffee/Tea: 5.00 PM
Reception Hall

Prof. S S Krishnamurthy
Convener

ABSTRACT

Multilayer optical thin film devices form the most vital constituents of many optical systems used in high power lasers, synchrotrons and head up display systems of aircrafts. Alternate layers of oxides of different materials are suitably designed and deposited to achieve the desired spectral characteristics. The films deposited by conventional evaporation and sputtering techniques have several deficiencies and these can be overcome by **ION BEAM PROCESSING TECHNIQUE** in which the ion beams with controlled energy and flux are used to assist the evaporated and sputtered species resulting in improvement of the physical, structural, surface and interfacial properties of the films. This process has revolutionized the entire field of optical thin films apart from a host of other fields and has enabled to achieve properties hitherto considered impossible.

The work done by the speaker's group on the processing of oxide films by ion assisted deposition and dual ion beam sputtering, using Kauffmann and Hollow cathode ion sources, the investigations carried out using tools such as Laser Raman Spectroscopy, Atomic Force Microscopy, Spectrophotometry, Electron microscopy and Xray diffraction during the past decade along with future plans will be highlighted in this talk.