



DEPARTMENT OF PHYSICS  
UNIVERSITY OF MUMBAI  
BHABHA ATOMIC RESEARCH  
CENTER

Organises

Annual Lecture of



**MATERIAL RESEARCH SOCIETY OF INDIA (MRSI)**

(Mumbai Chapter)

# **“SMART GLASSES IN NEW ROLES : COMMUNICATION, HEALTH AND ENERGY”**

## **ABSTRACT**



Glass as a material has been with us as a material since the Egyptian Civilisation. It has been traditionally used as utensils and for architectural décor, building illumination, and more so since the beginning of 20th century as cookware. Major application of glass in optics began during the World War-II when the potential of pure silica and quartz crystal were realized for high optical transmittance. However, it was Late Prof Narinder Singh Kapany and his PhD supervisor Prof. Harold Hopkins at Imperial College, London who first demonstrated light guiding in a fibroscope using glass fibres. Hopkins and Kapany [1] published their article in Nature journal in 1954 and coined the phrase “Optical Fibre”. Their work inspired many in Optical Physics and in late 60s, Kao and Hockham published their articles and explained the waveguiding theory based on Maxwell’s Equation.

We will look at the applications of Optical Fibres today and how it has improved our life. We also explore together the journey by learning novel glasses for energy generation and potential for transforming our need by harvesting sunlight. We will also discuss the use of glass in medicine, astronomy, and agriculture and farming.

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**14TH FEBRUARY 2024  
AT 12-1 PM**

**DEPARTMENT OF CIVICS & POLITICS  
PHEROZESHAH MEHTA BHAVAN  
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