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Seminar

Institute for Plasma Research

Title : Studies on Properties of Mixed Valent Oxides

Speaker: Dr. Sadaf Jethva

Saurashtra University, Rajkot

Date : 25th February 2022 (Friday)

Time : 03.30 PM

Venue : Online - Join the talk:

https://meet.ipr.res.in/Dr.SadafJethva_PDFTalk

Abstract :

Oxide materials such as, superconductors, manganites, diluted magnetic semiconductors, ferrites and multiferroics have been widely studied owing to their superior functionalities and rich fundamental physics underlying them. Studies on multiferroics demand the fabrication of a new class of devices due to their fascinating electrical and magnetic properties along with magnetoelectric (ME) coupling. Several types of multiferroics, such as, lone pair, charge ordered, geometrically frustrated, spin spiral magnetically ordered has been studied so far [1, 2]. Multiferroics exhibit interesting properties in the form of nanostructures, polycrystalline bulk, thin films, devices and composites. From the technological point of view, the field of multiferroics covers diversified characteristics suitable for practical applications. Multiferroics lead to faster, smaller, more energy-efficient data storage technologies. The range of multiferroic systems can be broadened by designing artificial multiferroics combining ferromagnetic materials with large magnetostriction coefficient and ferroelectric materials. Ferroelectric materials are widely used in sensor industry and for designing the ferroelectric random-access memory (FERAM) in which the information is stored by the remanent polarization [3] whereas ferromagnetic materials are used for a long time for data storage or magnetic field sensor application...

References:

1. W. Eerenstein, N.D. Mathur and J.F. Scott, Nat. Mater. 442, 759 (2006)
 2. R. Ramesh and N.A. Spaldin, Nat. Mater. 6, 21 (2007)
 3. M Dawber, K M Rabe and J F Scott, Rev. Mod. Phys. 77 1083 (2005)
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