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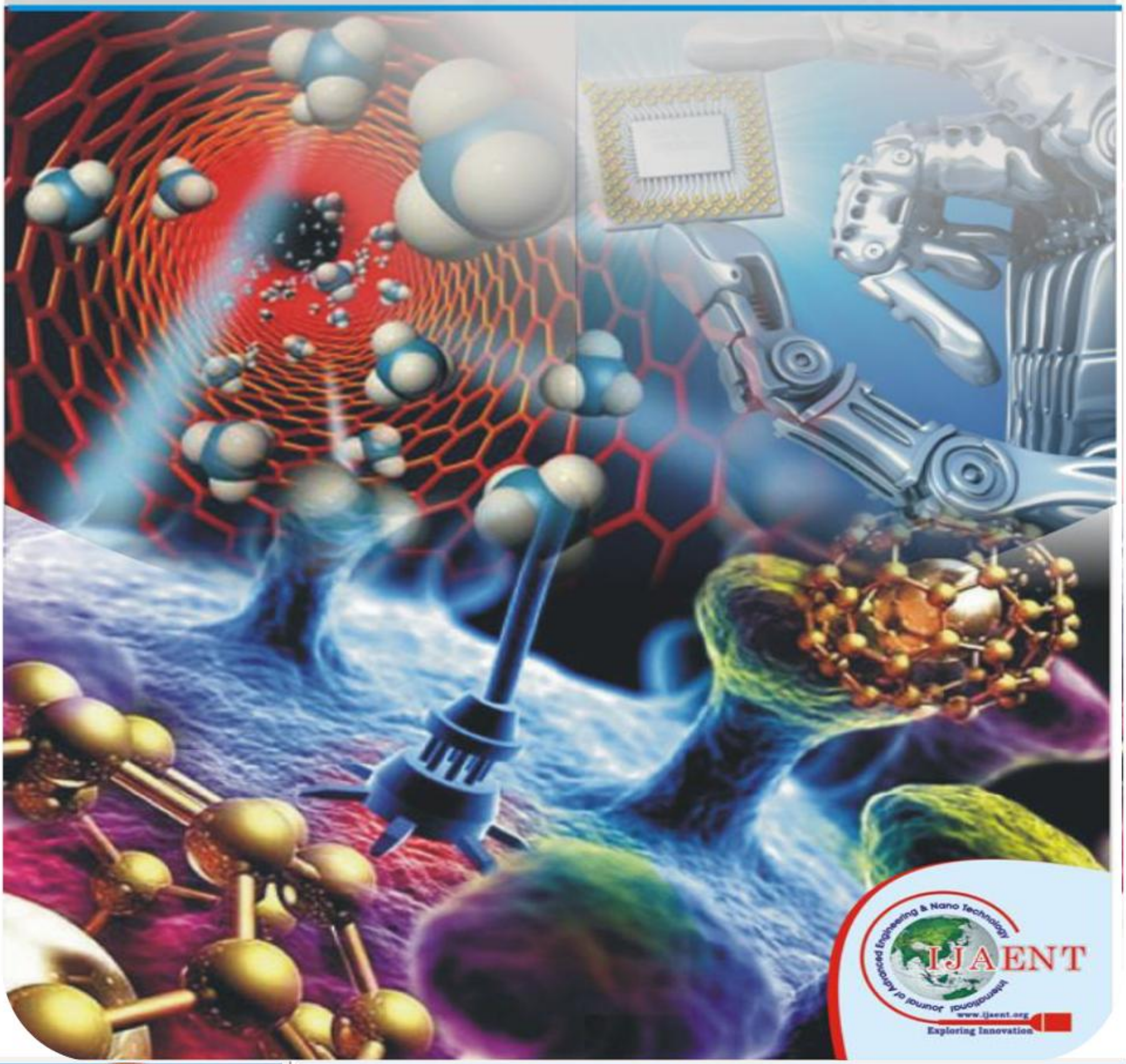

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1.	**Authors:** Md. Hussain Basha, N.O. Gopal	1-5
	Paper Title: Co-Doping TiO_2 Nanoparticles with Phosphorus and Nitrogen- A way to Enhance the Visible Light Driven Charge Separation	

Abstract: Codoping TiO_2 with nonmetals is one of the strategies that is used to make these materials sensitive to visible light. In this work, we obtained phosphorus and nitrogen codoped TiO2 nanoparticles by sol-gel method using H3PO4, NH4OH and Ti (IV) isopropoxide as precursors. As prepared sample were calcined at different temperatures, and the obtained samples were characterized by using different techniques. XRD analysis reveals the retarded phase transition by increased thermal stability and decreased particle size due to codoping. UV-Vis absorption spectra of the co-doped samples show redshift in their absorption edge due to doping of nitrogen and phosphorus. From XPS measurements, it is clear that nitrogen enters into interstitial sites of titania and phosphorus exists in a pentavalent oxidation state by replacing part of lattice Ti4+ by the formation of Ti-O-P bonds. Low temperature (77K) EPR studies with in situ visible high irradiation (>400nm) on the samples heated at different temperatures exhibit signals due to N˙, NO and the radicals formed due to photo generated holes trapped at different sites in these samples. Effect of heating temperature on these EPR signals has been studied in detail. EPR data reveals the enhanced charge separation as evidenced by the increased whole signal intensity and this enhanced charge separation plays important role in the photo catalytic activity of these samples

Keywords: Codoping TiO_2, XRD, UV-Vis, N˙, NO, (77K) EPR, Ti-O-P bonds, H3PO4, NH4OH and Ti (IV), redshirt

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2.	**Authors:**	**Kumari Kshama, Yudhvir Yadav, Yatendra Singh, Saurav Kumar, Neha**
	Paper Title:	**Analysis of Reinforced Concrete Framed Building with & Without Shear Wall**

Abstract: Shear wall, in building construction, a rigid vertical diaphragm capable of transferring lateral forces from exterior walls, floors, and roofs to the ground foundation in a direction parallel to their planes. Examples are the reinforced-concrete wall or vertical truss. Lateral forces caused by wind, earthquake, and uneven settlement loads, in addition to the weight of structure and occupants; create powerful twisting (torsional) forces. These forces can literally tear (shear) a building apart. Reinforcing a frame by attaching or placing a rigid wall inside it maintains the shape of the frame and prevents rotation at the joints. Structural walls provide an efficient bracing system and offer great potential for lateral load resistance. The properties of these seismic shear walls dominate the response of the buildings, and therefore, it is important to evaluate the seismic response of the walls appropriately. Shear walls are especially important in high-rise buildings subject to lateral wind and seismic forces. It is very necessary to determine effective, efficient and ideal location of shear wall. In this study, a G+10 story building in Zone III is presented with some preliminary investigation which is analyzed by changing various positions of shear wall with different shape like C-shape and L-shape shear wall for determining parameters like axial load and moments in columns and beams. This analysis is done by using standard package STADD-pro. The comparison of these models for different parameters like shear force, Bending moment, Displacement, Storey drift and lateral forces has been presented.

Keywords: Shear wall, construction, diaphragm, C-shape, L-shape, STADD-pro, a G+10, (torsional),

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3.

Authors: **Yatendra Singh, Yudhvir Yadav, Kumari Kshama, Saurav Kumar, Neha**

Paper Title: **Seismic Analysis of Braced Steel Frames**

Abstract: The study of braced steel frame response is widely studied in many branches of Structural engineering. Many researchers have been deeply studying these structures, over the years, mainly for their greater capacity of carrying external loads. Every Special moment resisting frames undergo lateral displacement because they are susceptible to large lateral loading. As a consequence, engineers have increasingly turned to braced steel frames as a economical means for earthquake resistant loads. The present study consist a Steel Moment Resisting Frame (SMRFs) with concentric bracing as per IS 800 - 2007. K bracing, Inverted V bracing, X bracing and an unbraced steel frame is considered for comparative study. Dimensions of each type of steel frame are similar having G+ 9 storeys, 30 m height. Each floor is of 3m height having four no. of bays along length (12m) and width (12m). The analysis is done by using standard package STADD pro. The comparison of these models for different parameters like Shear force, Bending Moment, Displacement, Storey drift and Lateral Forces has been presented by adding different types of bracings. Performance of each frame is studied through Equivalent static analysis.

Keywords: (SMRFs), STADD, (12m) and width (12m)., 800 -2007, Equivalent, Bending Moment, Displacement,

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Authors: **Yao-Wen Tsai, Van Duc Phan**

Paper Title: **State Feedback Sliding Mode Control for an Active Magnetic Bearing System**

Abstract: This paper proposes the state feedback Sliding Mode Control (SMC) approach in order to control the nonlinear system. A nonlinear model of two degrees of freedom (DOF) of an Active Magnetic Bearing(AMBs) obtained using Lagrange's equation is introduced. The SMC approach by using linear matrix inequality (LMI) technique is proposed not only to out-perform the proportional integral differential (PID) control but also to show some advantages. Firstly, a robust stabilization problem for a class of nonlinear systems is considered. Secondly, the conservatism of PID approach is reduced, fast response and reject disturbance of the system is also enhanced in this study. Finally, the simulation result has been obtained and compared with the conventional PID control. Website.

Keywords: state feedback control, two DOF for AMB, sliding mode control.

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