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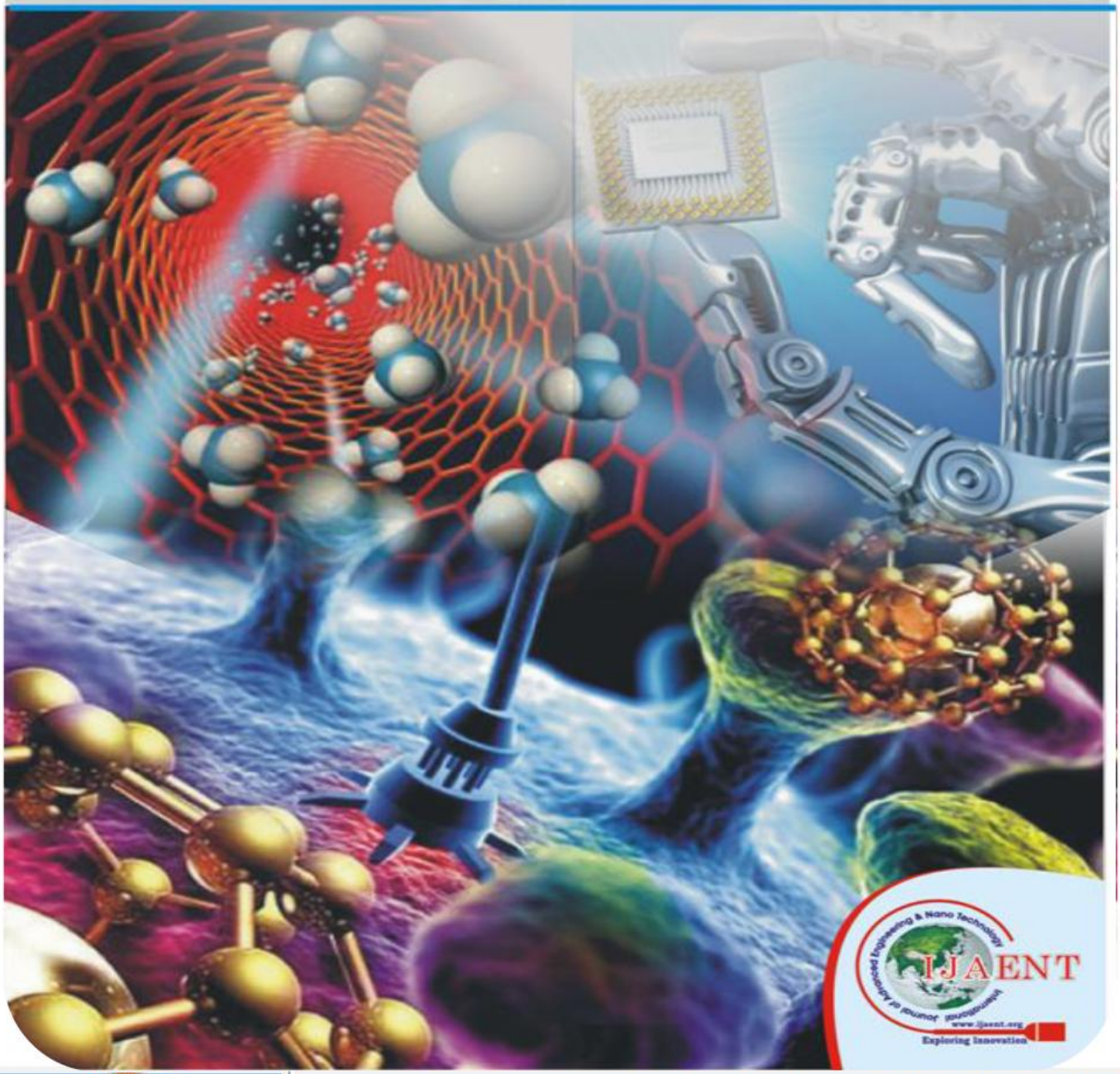

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1.	**Authors:**	**Yadnesh V. Vichare, V. G. Sayagavi, N. G. Gore, Trupti Narkhede**
	Paper Title:	**Comparative Study Between Hollow Steel Structures and Conventional Steel Structures**

Abstract: This study report showing the comparative study carried out between Conventional Steel Section (CSS)/open section and Hollow Steel Sections (HSS). The aim of the study is to evaluate economic importance of HSS in contrast with CSS. The approach used in order to accomplish the objective to which includes comparison of industrial building frame for various combinations of span, crane loads and material cross-section for given loading conditions. Design and analysis of industrial shed with truss and supporting column and check for both sections is made with draft code IS 800:2007 for LSM of given problem. The analysis and design phase of the project was performed using STAAD PRO V8i. The sample results of STAAD analysis were validated with the results of Manual analysis.

Keywords: Hollow Steel Sections, Conventional Steel sections, STAAD PRO V8i, Tubular Sections, Open Section

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11. CIDECT (International Committee for the Development and Study of Tubular Construction)

1-4

2.	**Authors:**	**Prashant S. Kilche, V. G. Sayagavi, N. G. Gore, P. J. Salunke**
	Paper Title:	**Optimum Cost Design of Raft Foundation**

Abstract: The mat foundation is basically one large continuous footing upon which the building rests. In this case, the total gross bearing pressure at the mat soil interface cannot exceed the allowable bearing strength of the soil. The system is used when the soil bearing capacity is low, and it may prove to be more economical when more than about one-half of the plan area of a building is required for single footings; it also provides a uniform excavation depth. The present investigation deals with the economically optimized and sensitivity design of raft foundation, in which sensitive part mainly depends upon geotechnical aspects, i.e. bearing capacity and settlement of the underlying soil. The algorithm handles the problem-specific constraints using a internal penalty function approach. The optimization procedure controls all geotechnical and structural design constraints to assure that the structure will not overturn and that stresses in the raft foundation and soil do not exceed the strength of the respective materials while reducing the overall cost of the structures. The cost of the raft foundation has been considered as the objective function and the design requirements have been imposed as side and behavioural constraints. The model is analyzed and design by using MATLAB software. Optimization is formulated is in nonlinear programming problem (NLPP) by using sequential unconstrained minimization technique (SUMT).

Keywords: Raft foundation, Optimum cost design.

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5. "Design optimization of reinforced concrete structures" Andres Guerra and Panos D. Kiousis
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7. "Efficient topology optimization in MATLAB using 88lines of code" Erik Andreessen and Anders Clausen
8. "Optimal Cost Design Of Rigid Raft Foundation" P. K. Basudhar, A. Das, S. K. Das, A. Dey, K. Deb and S. De
9. "Optimal Cost-Analysis and Design of Circular Footings" K. Basudhar, Arindam Dey, and A. S. Mondal
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5-7

	Authors:	**Benjamin Choy Kai Ghit, Li Fang, Song Liting, Kwek Jia Long**
	Paper Title:	**Prediction of Health Conditions with Dermatoglyphic Palm Pattern Prints**

3.

Abstract: There exists a close relation between the dermatoglyphic patterns of palms and the health condition of an individual, and hence a plausible prognosis. This builds upon the overall physical façade of the palm in giving a synoptic overview on an individual's state of health. The applications for palm prints in the area of biometric identification and security are myriad, and in recent years, its research and utilisation in health sciences has burgeoned. This paper aims to provide the research process, analysis and findings on the prognosis of some existing health conditions, such as schizophrenia, intellectual disability, and liver disease; based on the analyses of palm prints. The image processing and classification methods employed work on features like the palm patterns, lines, ridges, shape and colouration. For the purpose of this paper, work done is focused on the lines and colouration of palms. The applications and analyses could also serve as a rudimentary development guide for future enhancements.

Keywords: Dermatoglyphic palm pattern prints, Health condition,Histogram equalization, Image recognition.

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4.

Authors: **Purabi Deb Choudhury, Parag Dutta**

Paper Title: **A Two Warehouse Inventory Model for Deteriorating Items with Cubic Demand, Quadratic Holding Cost and Variable Backlogging Rate**

Abstract: This paper deals with a two warehouse inventory model for decaying items in which demand is taken to be cubic function of time, holding cost is assumed to be quadratic function of time, backlogging rate is variable and depends on the length of the waiting time for next replenishment. Shortages are allowed in the owned warehouse. Holding cost in rented warehouse is higher than that of own warehouse. Finally

the model is solved mathematically and profit maximization technique is used to illustrate the system.

Keywords: Inventory, Own warehouse, Rented warehouse, Cubic demand, Quadratic holding cost

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5.	**Authors:**	**Md. Shofiqul Islam, Tanvir Muntasir, Shuvomoy Das Gupta**
	Paper Title:	**Analytical Modeling of Electrical Characteristics of Low Bandgap Graphene Nanoribbon FET**

Abstract: In this paper analytical modeling for the electrical characteristics of low bandgap graphene nanoribbon field effect transistor (GNR-FET) has been presented. This analytical modeling is based on the two-dimensional Poisson's equation in the weak nonlocality approximation. At first, analytical formula for spatial distribution of electric potential along the channel of low bandgap GNR-FET has been derived. Then using the channel potential, an expression of drain current of low bandgap GNR-FET is developed. The potential distribution and current are expressed in terms of device parameters and applied voltages. Spatial potential has been investigated with different levels of gate voltage, gate length and drain voltage. Similarly, the current has been investigated with different applied voltages. It shows that drain current is controlled by applied voltages hence the device might be applicable in digital and analog circuits. This work of analytical modeling would be helpful for analyzing the device and optimizing the parameters to improve its performance.

Keywords: analytical modeling, graphene nanoribbon, GNR-FET, spatial potential, low bandgap.

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6.

Authors: **S. S. Dange, S. N. Dange, P. S. More**

Paper Title: **Synthesis of ZnO Nanorods by Precipitation Method**

Abstract: Zinc oxide nanorods were synthesized from zinc nitrate and ammonia solution by precipitation method assisted by microwave irradiation. The molarity of the bath solution was varied as 0.05M and 0.075M. The pH of the bath solution was varied as 7.5 and 8.0 for both the molarities and all samples were annealed at 250ºC. The nanorods were obtained from 0.075M zinc nitrate solution at pH 7.5. The structural and optical properties of the nanorods were characterized by X-ray diffraction (XRD), Scanning electron microscopy (SEM), and UV-Vis spectroscopy. The thermal characteristics was carried out by Thermo gravimetric and Differential thermal analyzer (TG-DTA) .The obtained nanorods shows length of 250-400 nm and diameter in the range of 45-60 nm. XRD pattern of ZnO nanorods shows hexagonal wurtzite structure with preferred (101) growth direction. The ZnO nanorods have UV absorption at 367.14 nm and the corresponding energy band gap is 3.37eV.

Keywords: Zinc oxide, Precipitation method, Nanorods, Morphology

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7.

Authors: **Vinay Prakash, B S Premananda**

Paper Title: **Design and Development of Communication Access Terminal and Radio Interface Unit of VoIP Based Advanced Integrated Communication System**

Abstract: The advancements in embedded systems with mixed signal technology have not only benefited various civil applications but also defence, especially in communications and networking. ICS is an integrated communication system developed for Naval ships to cater to their onboard external communication requirements. It consists of various types of radios to be interfaced by using generic gateways along with the User Access Terminals to enable communication from. ICS system and its interfaces got evolved along with the available technologies. The development of ICS started during early 80's, initially with a centralized switching based system with analog based terminals. During late 90's, utilizing the 10Mbps LAN technology for both voice and data, ICS MK-II was developed. There a generic microcontroller based User Terminal was developed to combine the functionalities of various terminals. Now in a pursuit to upgrade the existing system, an IP based system called AICS is being developed to satisfy all the basic and emerging communication requirements of Navy. Communication Access Terminal (CAT) and Radio Interface Unit (RIU) are the two main units being designed for providing user's and radio's audio and data interface respectively to Ethernet network, enabling communication through VOIP sessions. This project focuses on design and development of upgraded Interface and Switching Board (ISB) for final prototypes of CAT and RIU

Keywords: This project focuses on design and development of upgraded Interface and Switching Board (ISB) for final prototypes of CAT and RIU

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