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1.

Authors: Kritika Bawa, Pooja Sabharwal

Paper Title: ECG Signal Fibrillation Classification on Android Platform: A Survey Approach

Abstract: Electrocardiography deals with the electrical activity of the heart. The condition of cardiac health is given by ECG and heart rate. Automatic analysis of cardiac diseases is the vast area of research,. In literature there are number of techniques for classification of ECG signal on Android platform. ECG signal is the most commonly used for diagnosing various heart related disease like ventricular fibrillation, artial fibrillation, arrhythmia detection, premature ventricular contraction, Tachycardia, Bradycardia etc,. This paper presents a comparative study of the techniques used in the literature.

Keywords: ventricular fibrillation, arterial fibrillation, fuzzy, neural networks, ECG.

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2.

Authors: Maiyo, W. K, Kituyi, J. L, Mitei Y. J, Kagwanja, S. M.

Paper Title: Heavy Metal Contamination in Raw Honey, Soil and Flower Samples Obtained from Baringo and Keiyo Counties, Kenya

Abstract: Heavy metals in honey are of interest currently not only for quality control, but also as an environmental bio-indicator. The concentrations of trace heavy metals; Pb, Zn, Cu, Cr, Fe and Cd in 14 honey, soil and flower samples collected from selected sites in Keiyo and Baringo counties, have been determined by use of flame atomic absorption spectroscopy (FAAS). The concentrations of trace heavy metals in mg/kg in raw honey samples were in the range: Pb (0.063-0.491); Zn (0.012-0.259); Fe (0.073-1.295); Cu (0.032-0.123); Cd (0.044-0.224) and Cr (0.004-0.152) while in soil samples were: Pb (0.370-0.813); Zn (0.123-1.220); Fe (0.433-12.276); Cu (0.044-0.237); Cd (0.145-0.230) and Cr (0.013-0.105) and in flower samples were: Pb (0.104-0.770); Zn (0.097-0.634); Fe (0.088-8.133); Cu (0.078-0.301); Cd (0.167-0.241) and Cr (0.004-0.013). The levels of most heavy metals were generally higher in soil samples than in raw honey and flower samples. The results obtained showed that most heavy metal contents in raw honey were, however, below the WHO, FAO and KEBS recommended permissible limits for honey as a foodstuff. Detected levels of Cd, Pb and Cr (Keiyo) in raw honey were above these limits. Investigation on the possibility of correlation between the levels of selected heavy metal contents in honey and those in soil and flowers for most elements showed that there was no significant correlation.

Keywords: Contamination, Correlation, Trace Heavy Metals, Raw Honey.

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3.

Authors:	**Chethan Kumar K V, S Sujatha**
Paper Title:	**VLSI Implementation of DES & TDES Algorithm with Cipher Block Concept**

Abstract: This paper presents FPGA implementation of the DES and Triple-DES with improved security against power analysis attacks. This is programmed in verilog. DES & TDES is basically used in various cryptographic applications and wireless protocol security layers. The proposed designs use Boolean masking, a previously introduced technique to protect smart card implementations from these attacks. Triple DES was the answer to many of the shortcomings of DES. Since it is based on the DES algorithm, it is very easy to modify existing software to use Triple DES. It also has the advantage of proven reliability and a longer key length that eliminates many of the shortcut attacks that can be used to reduce the amount of time it takes to break DES. However, even this more powerful version of DES may not be strong enough to protect data for very much longer. The DES algorithm itself has become obsolete and is in need of replacement.DES encrypts data in 64-bit and it is a symmetric algorithm. The key length is 56-bits. This paper covers DES and Triple DES algorithm with Cipher Block concept, simulation results, basic FPGA technology and the implementation details of the proposed DES and Triple DES architecture. Register transfer level (RTL) of DES and Triple DES algorithm is designed, simulated and implemented separately using Verilog in different FPGA devices including Cyclone II, Spartan 3, Vertex 5 and Vertex E series FPGAs. The results from the comparison with existing implementations show that the proposed design was efficient in all aspects.

Keywords: DES, FPGA, TDES, RTL, Verilog

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4.

Authors:	**Milind S. Mankar, Ashish M. Vyawahare, Jitendra S. Pachbhai**
Paper Title:	**Nitrogen Oxides Emission Prediction in Coal Based Thermal Power Plant using Artificial Neural Network**

Abstract: This paper describes systematic approach to predict of nitrogen oxides emission from 270 MW coal fired thermal power plant with the help of artificial neural network. The NOx formation mechanism and NOx emission control techniques also describe. The oxygen concentration in flue gas, coal properties coal flow, boiler load, air distribution scheme, flue gas outlet, temperature and nozzle tilt were investigated through field experiment. The predicted values of ANN model for different load condition were verified with the actual values. These parameters help us to ensure to complete combustion and less emission with increased boiler life.

Keywords: Artificial neural network,prediction,nitrogen oxides emission,thermal power plant

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5.	**Authors:**	**Basel Saleh Al-Attab, H.S.Fadewar**
	Paper Title:	**Nitrogen Oxides Emission Prediction in Coal Based Thermal Power Plant using Artificial Neural Network**

Abstract: The cloud computing is a paradigm shift for online services where the cloud computing provides resources, programs and applications as a service via the Internet and according to the user' request. It has the ability to make use of computing resources with minimal costs and at high speed. It can provide users with a range of services, applications, and infrastructure and storage of a large amount of data, including important information. Despite the capabilities of the cloud computing, there is a question mark on its security. Therefore, security has become one of the most important issues in the cloud computing. This paper introduces the concept of the cloud computing, its characteristics and models as well as the various security threats that threaten the cloud computing, It also sheds light on some security issues and challenges in the cloud.

Keywords: Cloud Computing, Threats, Security Issues, Challenges.

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6.	**Authors:**	**B. Navin, S. Benila**
	Paper Title:	**Distributive Reprogramming of Wireless Sensor Nodes with Secure Data Transmission**

Abstract: Wireless sensor networks have found their applications in numerous industrial fields. This is because they assist humans by ceaseless monitoring of impossible areas by sending timely updates to the base station. Once these sensors are set up, it is highly impossible for humans to manually reprogram such devices and hence a reprogramming protocol is a necessity here. Such a reprogramming process needs to be done in an energy efficient way. This paper we propose Distributive Reprogramming of sensor nodes with secure Data Transmission where the nodes are categorized into good and bad nodes during the forwarding process of the reprogramming code. Also a random key generation and exchange is proposed and used between the nodes in this work to further improve security. Also the allocation of the Users in SDRP is a significant task as the failure of the User Node might cause the failure of the entire group of nodes under that particular User. Considering the energy of each wireless sensor node the allocation of the users can be done to enhance the overall energy efficiency of the SDRP without altering the multi-authorization of the network. It is an enhancement over Secure and Distributive reprogramming protocol and has been proved through network simulator simulations to show greater quality of service on Energy, Packet loss, Delay and throughput than the existing scheme.

Keywords: Diffie-Hellman key exchange, reprogramming, security, sensor networks, user privilege.

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Authors:	**Sohail Bux, A.C. Tiwari**	
Paper Title:	**Natural Refrigerants based Automobile Air Conditioning System**	

7.

Abstract: Air conditioning of automobile is essential for modern luxurious life. Today's automobile air conditioning system is based on vapour compression refrigeration cycle and refrigerant R134a is used for this purpose. In this paper Lithium Bromide-water, Aqua- ammonia and Lithium Chloride -water refrigeration systems is run by waste exhaust heat or low grade energy of four cylinder four stroke diesel engine situated at mechanical department at Rajeev Gandhi technical university Bhopal. The capacity of refrigeration system is one ton and five litres kirlosker diesel engine is used for this purpose . A common counter flow shell and tube type generator or heat exchanger is used for all three vapour absorption refrigeration systems. The performance of all refrigeration systems depends on performance of diesel engine exhaust. This automobile air-conditioning system is run by waste heat or low grade energy, required minimum maintenance, used environment friendly refrigerants and reduces the mileage of the vehicle.

Keywords: Waste heat recovery, LiBr-H2O, NH3-H2O, LiCl-H2O Refrigeration system, shell and tube heat exchanger, Diesel engine.

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8.

Authors: **Ekta Chaudhary, Praveen Sharma**

Paper Title: **Duckweed Plant: A Better Future Option for Phytoremediation**

Abstract: Preservation of the environment quality is one of the major concerns of this century. The biosphere is getting degraded by the release of natural and synthetic substances which can cause deleterious effects on living organisms. Among all the pollutants, heavy metals are easily transported and accumulated in the environment. Several industries such as textile, steel, electroplating, metal producing etc. release heavy metals (cadmium, copper, chromium, nickel, lead etc.) in the wastewater. Most of the heavy metals are toxic or carcinogenic in nature and may pose a threat to human health and the environment at higher concentrations. Several conventional methods are used for the removal of heavy metals from wastewater include chemical precipitation, ion exchange, reverse osmosis etc. but major limitations of such treatments are production of large quantities of sludge and may be ineffective or economically expensive processes. . So, the search for a new, simple, effective and eco-friendly technology for the removal of heavy metals from wastewater has directed attention towards phytoremediation. Many plants has been used for treating wastewater but duckweeds (family Lemnaceae) appear to be the better alternative and have been recommended for wastewater treatment as they are more tolerant to cold than water hyacinth as well as more easily harvested than algae, and capable of rapid growth.

Keywords: Heavy Metals, Duckweed, wastewater treatment, Phytoremediation.

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