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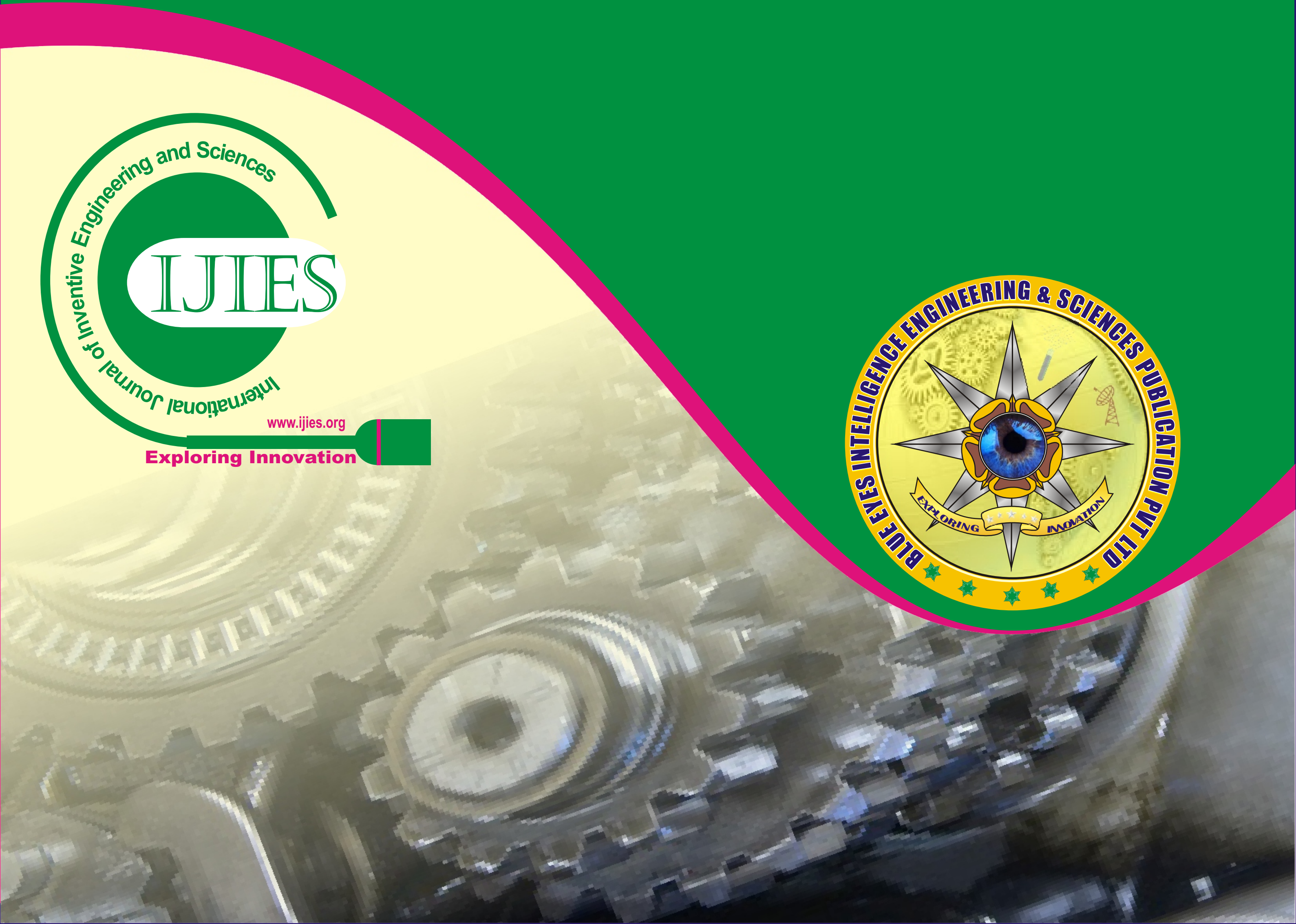

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1.

Authors: **Sharad R. Mahajan**

Paper Title: **Air Pollution from I. C. Engines & It’s Control**

Abstract: The rise in civilization is closely related to the improvement is transportation. In the development of transportation, internal combustion engine play an important role of petrol and diesel engine. This problem is increasing day by day with increasing pollution, & urbanization air pollution has been identified as one of the potential source of air pollution. The Petrol and diesel engine power automobile achieve symbol of our modern technological society but in recent time. The I.C. engine powered vehicle has come under heavy attack due to various problems created by them. One of the various problems is air pollution and this pollution problem facing the developing countries. First of all we know about pure air means it is a mixture of nitrogen and oxygen with some rare gases argon, neon etc. Now air pollution is defined as the addition of any material which will have a dangerous effect of our planet to our atmosphere. This pollution of air problem is very serious such than a one metrologies predicted recently that air could put an end to life on this planet within century. So our aim is to find out the air pollutant from petrol as well as diesel engine and control those pollutants so that we minimize the pollution problem. The main pollutant from automobile is carbon monoxide (CO), un burnt hydrocarbons (HC). Oxides of nitrogen and lead and particular emissions. Automobiles are not only sources of air pollution but also other sources like electric generation power stations (Which mainly emit sulpher oxides and nitrogen oxides) and industries processing. In advanced countries like USA the air pollutant by automobile is about 50% of total air pollutant. It is true that the pollutant from car say half kgf for single days driving. Day by day the pollutions are increased due to number of vehicles increases and hence air pollution by vehicles are also increased. The paper deals with the types of pollutants, its sources and how to control emissions from an automobile.

Keywords: Internal combustion engine, air pollution, carbon monoxide, Oxides of nitrogen, unburnt hydrocarbons.

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2.

Authors: **Chetan Sheth, B. R. Parekh, L. M. Manocha, Parul Sheth**

Paper Title: **Influence of Conductive Carbon Black from Waste Rubber Tire on Electrical and Mechanical Response of Polymer Composites**

Abstract: The aim of this work has been to assess the influence of the conductive filler loading which is Carbon black from waste rubber tire into a polymer matrix such as epoxy resin on the electrical and mechanical properties of the composite. The attention was focused on a possible percolation effect due to the increasing conductive filler loading on DC electrical conductivity and the effect on bulk hardness and micro hardness with enhanced electrical and mechanical properties. Electrical and mechanical tests were performed on specimens showing an increased electrical conductivity along with bulk hardness and micro hardness of the composite with increasing filler loading. The electrical percolation threshold is found at low weight percentage of filler loading. The percentage weight loading of the carbon black ranged from 1% to 15%. The most notable feature of the present work is that we found a correlation of the percolation threshold concentration (Øc), which is detected from the DC electrical conductivity with micro hardness. This paper reports the DC electrical conductivity, bulk hardness and micro-hardness properties of composites with different amounts of filler content. Experimental measurements and microscopic observations of the epoxy composites are discussed in detail. The optical images also revealed that at critical filler concentration (Øc) carbon black particles form the conductive network. Thanks to a sensitive measurement technique using high resistance electrometer, we are able to measure the accurate DC electrical conductivity.

Keywords: Polymer matrix, composites, conductive fillers, DC conductivity, bulk hardness, micro hardness, epoxy resin, carbon black, percolation threshold, morphology.

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Authors: **Vaibhav R, S. Sai Bharathwaj**

Paper Title: **Wireless Power Transmission with Solar Power Satellite**

Abstract: Space-based, solar power generation may become an important source of energy in the 21st Century since energy demand continues to grow along with worldwide concerns over fossil fuel pollution, the safety of nuclear power and waste, and the impact of carbon-burning fuels on global warming. According to a study by the Space Studies Institute (SSI), over 99 percent of the materials needed for building solar power satellites (SPS) can be obtained from Lunar materials. This would reduce the cost of SPS construction by almost 97 percent compared to the alternative of use materials launched from Earth. The objective of this paper is to distribute the power to house hold by efficient means when compared to current trend. It says that power can be generated by solar energy directly by sending a satellite of solar panels so that they get the maximum power generated from it and send it to earth so that the same process can be used in our country to supply electricity to households which reduces the usage of wires and greatly prevent power theft and drastic energy wastage.

Keywords: Space-based, solar power generation, alternative of use materials launched from Earth.

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Authors: **Kaustubh Dilip Patil, Uday R. Patil, Firoj U. Pathan**

Paper Title: **Renewable Train and Railway Station**

Abstract: We propose an electricity supply system suitable for public transportation .In this system, solar cells are installed on the roof of the platform. Wind turbines and water wheels are built around the station. Electric double layer capacitors (EDLCs) are installed at the station, and EDLCs are always charged by renewable energy. EDLCs are also mounted on the railcar. When the railcar stops at the station, EDLCs of the railcar are rapidly charged from EDLCs of the station. The battery driven light rail vehicle developed by Railway Technical Research Institute consumes the electricity of 2.5kWh per kilometer. Assuming that interval between stations is 500m; a railcar needs 1.3kWh to reach the next station. If we assume that railcars arrive and depart every 10 minutes, and railcars are operated for 18 hours a day, the power generation capacity of 99,000kWh is necessary at each station in one year. The quick social economic development of Vietnam stimulates great demand of quality as well as quantity on transport service by the

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increasingly growing needs of customer for transportation. The railway passenger transport is currently still an important branch of a country’s transport system because it is safer, more eco-friendly and much more efficient in comparison to another means. However, the increasing of the number of passengers is the main causes of fast increasing waste amount from the rail service. The aim of this paper is to study how the organic waste from rail service is managed and treated today by the Vietnam railways. The paper ends with some proposal solutions for treating and disposing of organic waste by applying renewable energy technologies for climate change mitigation to protect human health and the environment.

Keywords: Renewable energy, Solar energy, Wind energy, Biogas system.

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5.

Authors: **Chirag J. Shah, Vyom B. Pathak, Rushabh A. Shah**

Paper Title: **A Study of Future Trend for Sustainable Development by Incorporation of Supplementary Cementitious Material’s**

Abstract: The key area of interest of present world is about the preservation of environment, cost effective and sustainable development in sector of engineering. This paper comprises of detailed study of major Supplementary Cementitious Materials (SCM) commonly used and new emerging materials as a replacement of natural resources used for construction activity in Indian context. In a general way we can define concrete as a mixture of Portland cement, sand, coarse aggregate and water. The most important cementitious material in concrete is Portland cement. Today, most concrete mixtures contain supplementary cementitious materials that make up a portion of the cementitious component in concrete. These materials are generally byproducts from other processes or natural materials. They may or may not be further processed for use in concrete. Some of these materials are called Pozzolana, which by themselves do not have any cementitious properties, but when used with Portland cement, react to form cementitious compounds. For use in concrete, supplementary cementitious materials, sometimes referred to as mineral admixtures, need to meet requirements of established standards. They may be used individually or in combination in concrete.

Keywords: Egg Shell (ES), Pozzocrete, Quartz Sand (QS), Rice Husk Ash (RHA), SCM (Supplementary Cementitious Materials), Saw Dust Ash (SDA).

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6.

Authors: **Mina Hojjati**

Paper Title: **Face Recognition Based on Local Image Descriptor and Non-linear Features Extraction**

Abstract: In this paper, we introduce EABF (Extraction Analysis of Bsif Features) new method to face recognition based on extraction and analysis of binary sif features (BSIF). In our proposed algorithm, FABF eliminates some objections that led to many problems in the previous algorithms, such as a large query space and different quality and the size of images due to different time conditions for imaging and it removes the disadvantages of ELPDA (Nearby Local Discriminating Analysis) methods as a between-class-Scatter by using the Scatter matrix. This matrix introduces and updates the nearest neighbors to the outer class (K) through the samples. In addition, one of the advantages of the EABF is the high-speed face recognition by reducing the size of feature matrix and using NLPCA (Non-Linear Locality Preserving Analysis). Finally, the experiments results on the FERET data base indicate the impact of proposed method on the face recognition.

Keywords: Face Recognition, Non-linear Features, Linear Features, Local Image Descriptor.

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Authors: **Poonam S. Sutar, S. C. Potnis, S. K. Bhor, Vinayak Sutar**

Paper Title: **Response of Elevated Liquid Storage Steel Tank with Variable Frequency Pendulum Isolator**

7.

Abstract: The seismic response of liquid storage steel tanks with the variable frequency pendulum isolator (VFPI) is compared with that of the same liquid storage steel tanks isolated using the linear elastomeric bearings under real earthquake ground motion. In order to measure the effectiveness of isolation system, the seismic response of isolated steel tanks is compared with that of the non-isolated steel tanks. Two types of isolated tank models are considered in which the bearings are placed at the base and top of the steel tower structure. The seismic response is obtained by the Newmark's step-by-step method. The response of two types of tanks, namely slender and broad tanks, is obtained and a parametric study is carried out to study the effects of important system parameters on the effectiveness of seismic isolation. The various important parameters considered are the tank aspect ratio, the time period of tower structure, damping and the time period of isolation system. Further, a parametric study has been carried out to examine the behavior of liquid storage steel tanks isolated with VFPIs. The important parameters considered are the friction coefficient of the VFPI, the Frequency Variation Factor (FVF) of the VFPI and the tank aspect ratio. It is observed from proposed analysis that the seismic response of elevated steel tanks accurately with significantly less computational efforts. It is concluded that seismic response, viz. the base shear, the sloshing displacement and the impulsive displacement, of liquid storage steel tanks during earthquake ground motions can be controlled with the installation of the VFPI. The linear elastomeric bearings and VFPI isolators has almost the same effect in the tank to the far-field ground motions. MATLAB software has been used for analysis and solving all dynamic equations of motion. The isolation is very effective in reducing the seismic response of elevated liquid storage tanks.

Keywords: Aspect ratio, isolation system, liquid storage steel tank, system parameters.

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8.

Authors: **Moustapha Sane, Martial Zoungrana, Hawa LY Diallo, Gokhan Sahin, Ndeye Thiam, Mor Ndiaye, Moustapha Dieng, Grégoire Sissoko**

Paper Title: **Influence of Incidence Angle on the Electrical Parameters of a vertical Silicon Solar Cell under Frequency Modulation**

Abstract: A theoretical study of a vertical junction silicon solar cell in frequency modulation, with incidence angle effect under a monochromatic illumination has been done. Based on the diffusion-recombination equation, the expression of excess minority carrier density in the base was established according to the modulation frequency and the illumination incidence angle. Photocurrent density, photovoltage, series and shunt resistances are then deduced. The objective of this work is to show the effects of both modulation frequency and illumination incidence angle on these electrical parameters.

Keywords: Vertical junction - incidence Angle - frequency modulation.

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9.

Authors:	**M. M. Manyuchi, T. Mudamburi, A. Phiri and P. Muredzi**
Paper Title:	**Impact of Vermicompost on Lettuce Cultivated Soil**

Abstract: Vermicomposting is an environmentally friendly technique that is used for organic solid waste management. Waste corn pulp blended with cow dung and office paper was vermicomposted over 30 days to produce vermicompost which is a bio-fertilizer. The vermicompost was applied to soil cultivated with lettuce at the planting and after every four weeks. The impact of vermicompost on the soil was quantified. Application of vermicompost resulted in a 5%, 21.7%, 16.9% and 4.92% increase in soil pH, nitrogen, phosphorous and manganese content respectively. Application of the vermicompost also resulted in a 9.41% and 3.77% decrease in soil electrical conductivity and potassium content respectively. However, application of vermicompost did not alter the copper and zinc content of the lettuce cultivated soil. The lettuce showed vigor and vitality during the period of growth. Vermicompost can be used for sustainable agriculture practices.

Keywords: Bio-fertilizer, lettuce, soil properties, vermicompost.

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Authors: **Chandrakant N**

Paper Title: **Exchanging Path Oriented N-Generated Keys Via Alternative Path for Secured Communication in MANETs**

Abstract: In this paper, communication in a MANET works on key sharing called KEY1 and KEY2 to establish link between nodes. Here source node will generate and stores KEY2 and destination node will generate and stores KEY1. When source node initiates communication for destination, source node will send a request packet to destination via shortest/less cost path (PATH1). Here PATH1 can have many nodes and each node will generate a secret key whenever it receives a packet for first time for a particular session. Now that packet should take this key and move ahead to next node, similarly, next node too generates a secret key and appends to this packet, this task will be continued until packet reaches its destination, these all intermediate keys (IK) are merged (like applying arithmetic or logical operation) to form a unique key in the destination called as IKn2 where n>2 i.e excluding source node and destination node. Both side communications should have respective node's keys. i.e source packet should have KEY1,IKn2 and destination packet should have KEY2,IKn2. KEY1, KEY2 and IKn2 will expire after each session ends. So keys are shared before communication establishment.

Keywords: MANET, IKn2, Alternative Path, Intermediate Key.

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11.

Authors: **Vikas Patil, Madhumati Unde, Manjusha Jagtap**

Paper Title: **Efficient Indexing of Spatial Query**

Abstract: In past few years the Geographical Information Retrieval is very active field for research. Due to this research a new type of search engine came into existence called as Geographical Search Engine. Geographical search engine help to retrieve document which more textually and spatially relevant to our query. Indexing structure for spatial relevant is the main goal of this field and also to store and retrieve document having spatial scope of the given query. In this context we give an efficient tree structure called IR-tree, which allows searches to adopt different scope on textual and spatial relevance of document.

Keywords: Geographical Search Engine, Spatial Relevance, IR-Tree.

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Range Query Processing,” Proc. Fourth Int’l Conf. Web Information Systems Eng. Workshops (WISEW ’03), pp. 9-17, 2003.

12.

Authors: **Sagar Devidas Bole**

Paper Title: **Mitigation of Switching Transient in Transformer**

Abstract: An inrush current is a transient current with high amplitude that may occurs when a transformer is energized under no load or lightly loaded conditions. The magnitude of inrush current may be as high as several times of transformer rated current. The magnitude of inrush current depends upon leakage reactance, source strength, impendence of winding, residual flux. Inrush current causes huge mechanical and thermal stress on transformer in addition to inadvertent operation of the protective relay systems. The conventional method like pre-insertion of resistor, point on wave is used to minimize the inrush current. Inrush current in transformer can be reduced by selecting appropriate switching angle with respect to the remnant flux. In this paper dynamic modeling of transformer is used for detailed analysis of the inrush current and the effect of switching angle on the magnitude of inrush current is observed.

Keywords: Dynamic modeling, switching transient.

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13.

Authors: **Vaishnavi Deokar, Sayali Deshpande, Radhika Devkar**

Paper Title: **Password Generation Techniques For Accessing Cloud Services**

Abstract: Cloud computing is emerging field because of its performance, high availability, least cost and many others. Besides this companies are binding there business from cloud computing because the fear of data leakage. Due to lack of proper security control policy and weakness in safeguard which lead to many vulnerability in cloud computing.When organizations utilize cloud services, authenticating users in a trustworthy and manageable manner is a vital requirement. Organizations must address authentication related challenges such as credential management, strong authentication, delegated authentication, and managing trust across all types of cloud services. Users tend to choose memorable passwords that are easy for attackers to guess, but strong system assigned passwords are difficult for users to remember. Thus depending on the file parameters(C- Confidentiality, I- Integrity, A- Availability), we use textual password for lower privilege files, CCP passwords(Cued Clickpoint) for medium privilege files and PCCP password(Persuasive cued Clickpoint) for high privilege files. In this paper we focus on the integrated evaluation of the Persuasive Cued-Click Points graphical password authentication system, including usability and security. An important usability goal for authentication systems is to support users in selecting better passwords, thus increasing security by expanding the effective password space.

Keywords: Authentication, cued-click points, Graphical passwords, guessing attacks, persuasive technology.

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Authors: **Mame Faty Mbaye, Martial Zoungrana, Ndeye Thiam, Amadou Diao,Gokhan Sahin, Mor Ndiaye, Moustapha Dieng, Grégoire Sissoko**

Paper Title: **Study of the Photo Thermal Response of a Mono Facial Solar Cell in Dynamic Regime under a Multispectral Illumination and Under Magnetic Field**

Abstract: In this article, we present the study of the photo thermal response of a monofacial silicon solar cell illuminate by a multispectral light for a constant modulated frequency and under magnetic field. After the resolution of the equation of continuity of the minority carriers of loads, we establish with the help of some justified approximations, the equations of heat in the presence of an optical source of heat and the new boundary conditions allowing to solve those.The density of minority carriers in excess, the amplitude of the variation of temperature and the heat fluxdensity were studied and analyzed for different angular pulses and for different values of the magnetic field and rates of recombination at thejunction. Representations of Nyquistand Bodeplots of the thermal dynamic

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impedance resulted in an equivalent electrical circuit of the photo cell.

Keywords: Solar cell- frequency modulation- magnetic field - Capacitive effect, inductive effect, photo thermal.

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15.

Authors:	**Swarnalatha Eluri, Hemalatha Rallapalli**
Paper Title:	**Design of Fault Tolerant Memory System with Difference Set Cyclic Codes**

Abstract: The problem of single event upset (SEU) due to higher integration, smaller dimensions and lower voltages is very common and need to be addressed. The effect of SEU is not only present at the terrestrial environments but also at the ground level. The SEUs also result in silent data corruption which results in the further corruption of data, especially in memories. A special class of LDPC codes called Difference Set Cyclic Codes (DSCC) is used to design a fault tolerant memory system that detects the silent data corruption. The DSCC is simple and easy to implement.

Keywords: Difference Set Cyclic Codes (DSCC), LDPC, Majority Logic Fault Detector (MLDD), Single Event Upsets (SEU).

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