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Address:
22, First Floor, ShivLoke Phase-IV,
Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India
Website: www.blueeyesintelligence.org
Email: director@blueeyesintelligence.org, blueeyes@gmail.com
Cell #: +91-9669981618, **WhatsApp #:** +91-9669981618, **Viber #:** +91-9669981618
Skype #: beiesp, **Twitter #:** beiesp

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1.

Authors: Himani Goyal

Paper Title: Wireless Display using RF-Module

Abstract: Exchange of information has always been important. Without this it is impossible to express one's thoughts and ideas. A study in the various modes of communication has bridged this gap enabling an easy and free flow of information among the people. There has always been an effort to develop various ways and methods to make the transfer of information and data, even more efficient. One such study is in the transfer of serial data over a limited distance i.e., within a particular range. To meet the present day technology needs, data transfer at higher speeds is to be achieved which is possible by RF Communication. This project uses an RF Module to transfer serial data in a better way reducing the cost overhead and limiting the drastic effects of noise. In this project we have two sections, one is transmitter section and the other is receiver section. The transmitter section mainly consists of ATMEL8 and an RF Transmitter. The same is also used in the receiver section. It also involves a wireless LCD Display to display the information transferred. Arduino is used as an ISP (In-System-Programmer). This allows us to use the board to burn the boot loader onto an ATMEL. An antenna is also used at both the transmitter and receiver sections. In this method of serial communication, the maximum baud rate is 8000 bits per second. It can be used within a range of 150metre radius (with obstacles). It also has an error checking feature by which the noise is reduced. For the transfer of information within a short range, this method can be employed as it is more efficient when compared to the prevalent methods of data transfer.

Keywords: ATMEL, LCD, RF, ISP, Transmitter, Communication.

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2.

Authors: Himani Goyal

Paper Title: Understanding of IC555 Timer and IC 555 Timer Tester

Abstract: As 555 timer is robust, stable and most commonly used IC in the area of electronics and also use in many electronic circuits. IC 555 is a square wave generator and its duty cycle range from 50% to 100%. The time delay in the circuit is provided by an oscillator. 555 timer IC got its name from the three 5 kilo-ohm resistor attached as a pattern of voltage divider as shown in the below figure. While in the full circuit 555 timer IC consists of many other components via 16 resistors, 20 transistors and 2 diodes also included flip-flop.

Keywords: Ic technology, ic555 timer, ic555 timer tester.

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Authors: Majid S. M. Al-Hafidh, Muthana S. Salih

Paper Title: Hybrid Renewable Energy for Residential Loads using HOMER Software & Neuro-Fuzzy Network

3.

Abstract: Electric load consists of multiple components, residential, commercial, industrial, agricultural. . . Etc. The residential load is the largest component of the electrical load in the Iraqi power system nowadays. The study of residential load connected to the grid with the ability to energy change (buy and sale) has been carried in a previous research. Optimal hybrid renewable energy system has been found using HOMER software.The current research aims to implement HOMER software for different residential load with extent scale of change and to find the optimal hybrid renewable energy system for each load. In this way a database is to be obtained. This database is to be used in the formation of Neuro-Fuzzy system, which can be used to find the optimal hybrid renewable energy system for residential loads in the city of Mosul.

Keywords: Hybrid renewable power system ; grid connecting lods; Residential load; HOMER; Neuro-Fuzzy.

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4.

Authors:	**Ali Al-Helal**
Paper Title:	**Solar Energy as an Alternative Energy than the Conventional Means of Electricity Generation in Iraq**

Abstract: This study aims to show the feasibility of using solar power in Iraq as an alternative source of power generation. This research investigated the profits of using solar power economically and environmentally. Also, it addressed a set of important charts such as generated power, oil production, the amount of gas that used in the power plant, the average of delivered electricity hours, and CO2 emissions. Ten locations are chosen as the best places according to their total annual solar radiation and each location is assumed to have a 10 MW solar park. The results showed saving about 676,000 USD daily (based on 52 USD per barrel) from petrol can be used to generate electricity from the conventional means, offsetting over 200,000 metric tons of carbon dioxide equivalent emissions annually, and around 111 job will be created during the construction stage of each 10 MW.

Keywords: Solar energy, CO2 emissions, solar radiation.

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Authors:	**Vijendra V**
Paper Title:	**Fabrication of a PLDC Cell using Near Infrared OLED**

Abstract: The fabrication of a single-layer NIR OLED by a new luminescent material. Demonstrate vertically stacked device consisting of organic photovoltaic device (OPV) and organic light-emitting diode (OLED) inside a polymer dispersed liquid crystal (PDLC) cell. In such a device, OLED and PDLC acted as transmissive (T-) and reflective (R-) mode respectively, of a transflective display without the tradeoff of aperture ratio between R- and T- modes in a conventional transflective LC display. The characteristics of this diode is considered and investigated with different thicknesses. Electroluminescence is observed with the peak at 800 nm. Storage lifetime of OLED increased in the stacked device because LC material helped to prevent the water and oxygen attack. Driving voltage of PDLC increased due to the insertion of passivation layer upon the electrode which was used protect the OLED and OPV underneath.

Keywords: DVS, HOMO, low power design, LUMO, OPV, OLED, PLDC.

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5. **15-22**

Authors:	**Priti V. Jasud, A. S. Dhone, S. C. Sakure**
Paper Title:	**Secure Smart Grid Network**

Abstract: The Smart Grid is formed by many sub-networks such as the Home Area Network (HAN), t which are at risk and can be attacked remotely. A Smart grid designing a mutual authentication scheme and a key management protocol. This paper proposes an efficient scheme that mutually authenticates a smart grid. In this paper we analyzed three cases first we show the normal execution then execution along with attackers. Using mutual authentication we overcome attacks. A number of anonymous routing schemes have been proposed for grid networks in recent years, and they provide different level of privacy protection at different cost. First, an anonymous key establishment process is performed to construct secret session keys. By using NS-2 the performance analysis such as energy, bandwidth etc., are simulated. Here we find the attacks.

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