ELECTRO SYNERGY

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DEPARTMENTAL MISSON

M1: To transform young minds into productive Electrical engineers using technical knowledge and professional skills through contemporary curriculum and effective learning system with continuous evaluation.

M2: To provide student exposure to modern engineering tools and innovative projects to become globally competent Electrical engineers embedded with ethical values and leadership capabilities.

M3: To serve the people off state and nation by providing a broad and high quality education with co-curricular and extracurricular activities to students for all round development.

DEPARTMENTAL VISION

To create an institute of Global repute for providing technical ability and professional skills in the field of Electrical & Electronics Engineering

INSIDE THIS ISSUE:

XILINX FPGA

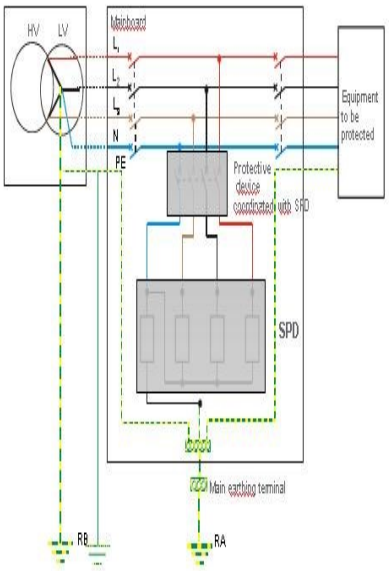
Xilinx is an American technology company, primarily a supplier of programmable logic device. It is known for inventing the field programmable array (FPGA) and as the first semiconductor company with a fables manufacturing model

Founded in Silicon Valley in 1984, the company is headquartered in San Jose, USA, with additional offices in Longmon, USA; Dublin Ireland; Singapore Hyderabad, India; Beijing China; Shangai China; Brisbane, Australia and Tokyo, Japan

Major FPGA product families include Virtex (high-performance), Kintex (mid-range) and Artix (low-cost), and the retired Spartan (low-cost) series. Major computer software Xilinx ISE and Vivado Design suite.

LIGHTNING AND SURGE PROTECTION

Protection against the destructive lightning effects should be considered globally.
To avoid the fire of a building we will use the “external” lightning protection system such as lightning conductor or meshed cage.
In the same way, we will install Surge Arrester or surge protector (also called SPD, Surge Protective Device) in the Electrical main board to protect sensitive electrical equipment against surges generated by lightning strokes fell close or directly on the building.
15 years of experience in the field of surge protection lead me to write that the technology and understanding of phenomena has evolved. However, further issues have to be clarified …
One of the main issues to clarify in my opinion is the behavior of the surge arrester, “**surge protector**“ (SPD) implemented in an electrical panel. Today many designers think it is enough to connect a **surge protector** (SPD) on the grid so that it provides protection against surges caused by **lightning** effects. Of course, this role is the main function of the surge protector (SPD). Nevertheless we have to consider its integrity in operation, outside a period of storm, mainly during the permanent fault on the electrical power network.

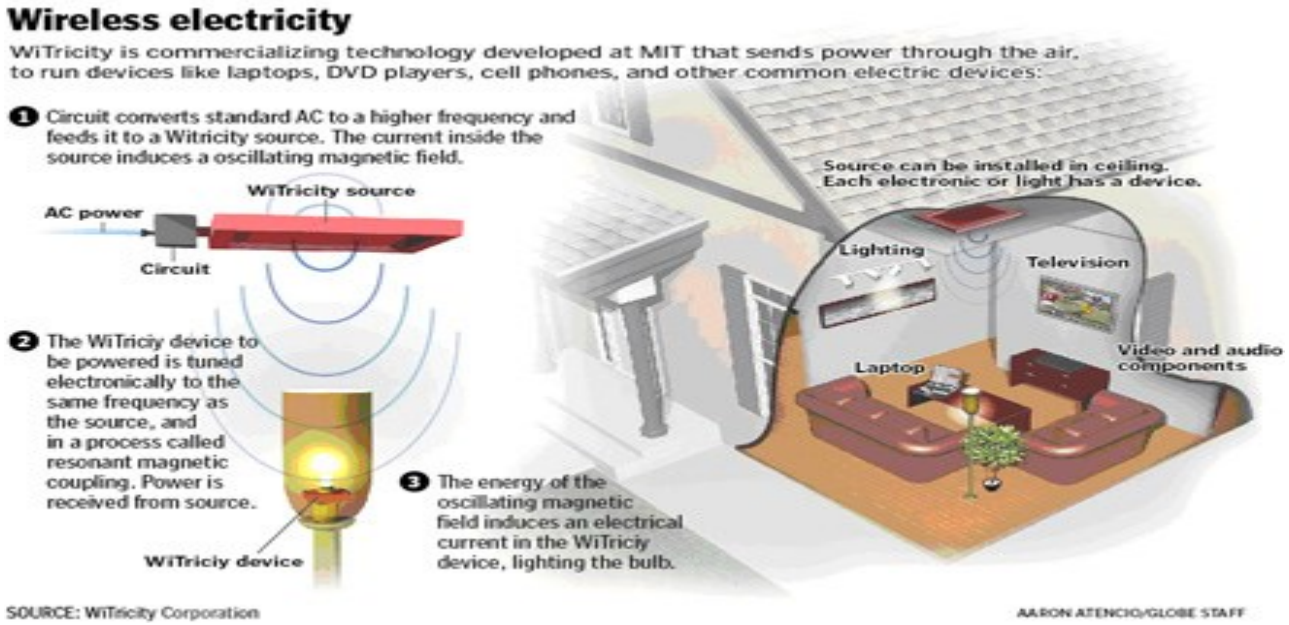


PREPAID ENERGY METER USING SMART CARDS

Prepaid energy meter using smart cards is an efficient scheme of electricity billing. It is beneficial to consumers and power plant in terms of revenue and power sector reforms. Prepayment metering system had improved operation efficiencies, reduced financial risks and provides better customer behavior , initial investment , rapid technology changes, uncertainty over success. Recently many countries had introduced prepaid energy meter using smart cards like South Africa, India and England. In India Tata Power(Delhi and Jamshedpur) and Mumbai BEST service is following this scheme.

WIRELESS POWER TRANSFER

Wireless power transfer (**WPT**), **wireless power transmission**, **wireless energy transmission**, or electromagnetic power transfer is the transmission of electrical energy from a power source to an electrical load, such as an electrical power grid or appliance, without the use of conductors like wires or cables. Wireless power is a generic term that refers to a number of different power transmission technologies that use time-varying electric, magnetic or electromagnetic field. In wireless power transfer, a wireless transmitter connected to a power source transmits field energy across an intervening space to one or more receivers, where it is converted back to an electric current and then used. Wireless transmission is useful to power electrical devices in cases where interconnecting wires are inconvenient, hazardous, or are not possible. Wireless power techniques mainly fall into two categories, non-radioactive and radioactive. In near field or *non-radioactive* techniques, power is transferred by magnetic fields using inductive coupling between coils of wire, or by electric fields using capacative coupling between metal electrodes. Inductive coupling is the most widely used wireless technology; its applications include electric toothbrush chargers, RFID tags, smartcards, and chargers for implantable medical devices like artificial cardiac pacemaker, and inductive powering or charging of electric vechile like trains or buses. A current focus is to develop wireless systems to charge mobile and handheld computing devices such celphones, digital music player and portable computers without being tethered to a wall plug. In far-field or *radioactive* techniques, also called *power beaming*, power is transferred by beams of electromagnetic radiation, like microwaves or laser beams. These techniques can transport energy longer distances but must be aimed at the receiver. Proposed applications for this type are solar power satellites, and wireless powered drone aircraft.



NANO TECHNOLOGY

Nanotechnology is manipulation of matter on an atomic, molecular, and supramolecular scale. The earliest, widespread description of nanotechnology referred to the particular technological goal of precisely manipulating atoms and molecules for fabrication of macroscale products, also now referred to as molecular nanotechnology. A more generalized description of nanotechnology was subsequently established by the National Nanotechnology Initiative whih defines nanotechnology as the manipulation of matter with at least one dimension sized from 1 to 100 nanometers. This definition reflects the fact that quantum mechanical effects are important at this quantum-realm scale, and so the definition shifted from a particular technological goal to a research category inclusive of all types of research and technologies that deal with the special properties of matter which occur below the given size threshold. It is therefore common to see the plural form "nanotechnologies" as well as "nanoscale technologies" to refer to the broad range of research and applications whose common trait is size. Because of the variety of potential applications (including industrial and military), governments have invested billions of dollars in nanotechnology research. Until 2012, through its National Nanotechnology Initiative, the USA has invested 3.7 billion dollars, the European Union has invested 1.2 billion and Japan 750 million dollars.

TEACHERS DAY CELEBRATION

Teachers day in CCCT was celebrated with high spirits, students solely organized the whole event. There were numerous cultural dance, songs and other events which was thoroughly enjoyed by all the staff.

Community College Students body surprised us all with a separate program list which included heart-melting songs, dances, etc. There were impromptu acts, teachers actively participated sharing thoughts and acting on stage. The program was followed by self cooked delicious food.

COLLEGE MISSION

TO ATTAIN THE STATUS OF "GLOBALLY RECOGNIZED EDUCATION AND TRAINING INSTITUTION" WITH MULTI-DIMENTIONAL GROWTH , BY ENLARGING AND DELIVERING TRAINEE AND INDUSTRY FOCUSED PROGRAMMES AND PREPARE THE "MOST SOUGHT - AFTER TRAINEES" WITH ENHANCED CORE AND COMPETENCIES AS REQUIRED BY COSTUMER AND SOCIETY.

COLLEGE VISION

" TECHNO EDUCATION FOR GLOBAL COMPETENCE "

UPCOMING EVENTS

1. **GANDHI JYANTI (02-10-2016)**
2. **DURGA PUJA (8-10-2012 TO 16-10-2016)**
3. **3rd ARM (22-10-2016)**
4. **SAFETY WEEK (26-10 -2016 TO 28-10-2016)**

EDITORIAL TEAM

- COURSE IN CHARGE DEE: MR.MUKESH SHARMA
- LECTURER : MR. THARMENDRA CHETTRI

STUDENT BODY

- PRAVESH ADHIKARI
- LIZA PINTSO BHUTIA