

ELECTRON ATOM

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"When dealing with people remember you are not dealing with creatures of logic, but creatures of emotion."

From HOD'S Desk

It gives me immense pride and pleasure to lead the electrical and electronics engineering department of this esteemed institution.

The department encourages students to participate in cultural and co-curricular activities, sports, seminars, paper presentation etc. keeping in mind overall growth of the students.

To fill the gap between industry and the academics providing industrial visits and internships to the students are regular practice of the department, which assist the student in smooth transition from academic life to work life.

I wish the students make best use of the facilities provided by the department and work towards achieving excellence in the chosen field.

Rahima. I V SEM

Introduction to numerical relays

The distinction between digital and numerical relays is particular to **Protection**. Numerical relays are natural developments of digital relays due to advances in technology. They use one or more digital signal processors (DSP) optimized for real time signal processing, running the mathematical algorithms for the protection functions.

The continuing reduction in the cost and size of microprocessors, memory and I/O circuitry leads to a single item of hardware for a range of functions. For faster real time processing and more detailed analysis of waveforms, several DSPs can be run in parallel.

Many functions previously implemented in separate items of hardware can then be included in a single item.

Protective control and monitoring

The purpose of a capacitor bank's protective control is to remove the bank from service before any units or any of the elements that make up a capacitor unit are exposed to more than 110% of their voltage rating.

When capacitor units in a capacitor bank fail, the amount of increase in voltage across the remaining units depends on the connection of the bank, the number of series groups of capacitors per phase, the number of units in each series group, and the number of units removed from one series group. A similar effect occurs on the internal elements that make up a capacitor unit.

Such monitoring is desirable for both externally and internally fused units to prevent a cascade failure of the remaining units and their associated fuses.

Welcome party “NOVOTO-2K17” on 12TH Oct 2017 to the freshers



Triplen Harmonics

Sunil R Nayak 5th sem

Triplen harmonics are the odd multiples of the third harmonic ($h = 3, 9, 15, 21, \dots$). They deserve special consideration because the system response is often considerably different for triplens than for the rest of the harmonics.

Two typical problems are overloading the neutral and telephone interference. One also hears occasionally of devices that misoperate because the line-to-neutral voltage is badly distorted by the **triplen harmonic voltage drop in the neutral conductor**.

For the system with perfectly balanced single-phase loads illustrated in Figure 1, an assumption is made that fundamental and third harmonic components are present. Summing the currents at **node N**, the fundamental current components in the neutral are found to be zero, but the third harmonic components are three times the phase currents because they naturally coincide in phase and time.

The delta winding provides ampere-turn balance so that they can flow, but they remain trapped in the delta and do not show up in the line currents on the delta side. When the currents are balanced, the triplen harmonic currents behave exactly as zero-sequence currents, which is precisely what they are.

This type of transformer connection is the most common employed in utility distribution substations with the delta winding connected to the transmission feed.

These rules about triplen harmonic current flow in transformers apply **only to balanced loading conditions**. When the phases are not balanced, currents of normal triplen harmonic frequencies may **very well show up where they are not expected**.

The normal mode for triplen harmonics is to be zero sequence. During imbalances, triplen harmonics may have positive or negative sequence components too.

Deepa.T 3rd sem

Jeans Could Someday Power Your Phone

The Soon you may never have to fret about your smartphone running out of juice. Your clothing will simply power it back up for you. That's the word from scientists at China's Chongqing and Jinan Universities in a study just published in the journal ACS Nano.

Researchers have been hard at work during the last few years trying to create wearable energy, or clothes that can charge things. The premise is simple. People today rely heavily upon devices such as smartphones and tablets. And they're looking for ways to recharge these devices on the go. So if you could devise clothing fabric that could harness solar power —one of the most widely available and inexhaustible renewable energy sources — you'd be able to charge your various gadgets with ease.

Scientists have had some past success creating energy-harvesting fibers. But there was always one problem when they tried to fashion these threads into self-powered smart garments: The fibers they devised got wrecked during the clothing manufacturing process, namely during the weaving and cutting. The Chongqing and Jinan University scientists say they've solved this problem because the energy-collecting and energy-storing threads they created are highly flexible — each individual thread is easily bendable, and not simply the fabric as a whole.

The researchers created a fiber containing titanium or a manganese-coated polymer, zinc oxide, a dye and an electrolyte, laced with copper-coated polymer wires to make the solar cell part of the textile. To store the power, they developed a second fiber which contained titanium, titanium nitride, a thin shell to prevent oxidation and an electrolyte. These two fibers were woven with cotton yarn. The team's sample textile can be fully charged to 1.2 volts in 17 seconds by exposure to sunlight — enough voltage that your future smart T or smart dress might be able to power small electronics. It's sturdy, too; their research showed there was no degradation in the fabric after 60 days. But don't worry that this means the fabric is akin to sackcloth. The scientists note their textile can be fashioned into numerous different patterns, and tailored into any designed shape, without affecting performance.



Uzma.M 7th sem

Super Mom

Mom, you're a wonderful mother,
So gentle, yet so strong.
The many ways you show you care
Always make me feel I belong.

You're patient when I'm foolish;
You give guidance when I ask;
It seems you can do most anything;
You're the master of every task.

You're a dependable source of comfort;
You're my cushion when I fall.
You help in times of trouble;
You support me whenever I call.

I love you more than you know;
You have my total respect.
If I had my choice of mothers,
You'd be the one I'd select!

"You cannot shake
hands with a clenched
fist.."

I'm Happy You're My Dad

I feel safe when you are with me;
You show me fun things to do;
You make my life much better;
The best father I know is you.

I'm happy you're my Dad
And so I want to say
I love you, Dad, and wish you
A Happy Father's Day!



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