



PRIYADARSHINI ENGINEERING COLLEGE VANIYAMBADI

**(Approved by AICTE, New Delhi and Permanently Affiliated to Anna University, Chennai)
Listed in 2(f) & 12(B) Sections of UGC**

Department of Electronics & Communication Engineering

TECHNICAL MAGAZINE

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(2018-2019)**



Perseverance Endurance Commitment

PREFACE

“Technical Magazine” is the magazine of the Department of Electronics & Communication Engineering at Priyadarshini Engineering College, Vaniyambadi. It provides a great opportunity to the students and faculty of the department to share their Knowledge, Literature, Talents, Achievements, Motivations and News related to technology etc. at one common platform.

This Technical Magazine is an important means to enable the students to express their inner feelings. It also helps them in developing the positive and desirable qualities. This magazine contains four segments viz. Electro-Pages, Electro-Craft, Impulse and News Point.

A magazine such as this can never be comprehensive. It is by its very nature selective and reflects our perception of the "essence" of the college life. To that extent, any errors and omissions are ours and we unreservedly apologize for these.

We have acted in good faith at all times.

We hope that you enjoy the reading.

Editorial Committee

Arunkumar.P

Punith.L

Musfira Ambreen

ABOUT THE COLLEGE

Moved by the sad plight of affairs which was prevailing among the rural based population of Vaniyambadi and nearby Village who were quite unaware of the technological explosion that was taking place in India, the philanthropist of Vaniyambadi and nearby villages came together and established Jai Barath Charitable Trust in the year 1994 and started Priyadarshini Engineering College in the year 1995 under its banner with their sumptuous contributions.

With the sole aim that the accomplishment of the Vision and Mission of the Trust does not get shattered, the matter was referred to the Honorable High Court of Madras for scheming. The Honorable High Court of Madras appointed Retired Justice V.Rengasamy as the Receiver of the Trust in the year 2004 which appointment was confirmed by the Honorable Supreme Court of India, New Delhi. Right from that time Honorable Justice V.Rengasamy with his efficient leadership, guidance and impeccable integrity is administering Priyadarshini Engineering College faithfully following the Vision and Mission of Jai Barath Charitable Trust in letter and spirit and has raised the college to greater heights. He took initiative to establish palatial buildings and labs in the college. He continues to administer the institution with full zeal and zest till date.

VISION OF THE COLLEGE

To Inculcate In the Young Rural Minds the Aptitude to Compete With the Quality Technocrats

MISSION OF THE COLLEGE

1. To Instill Technical Skills to Compete In the Sustainable World.
2. To Impart Holistic Value Based Technical Education.
3. To Intensify Research And Development (R&D) Activities In Technological Development.
4. To imbibe core values of love for motherland, performance of duty, compassion, tolerance, honesty and integrity.

ABOUT THE DEPARTMENT

Department of Electronics and Communication Engineering was started in PEC in the year 1995 with the intake of 60 students with the objective of imparting quality education in the field of Electronics and Communication and the intake was increased to 120 in the year 2013. The department started M.E.Communication System in the year 2014 with an intake of 24 students. At present, the department is offering an undergraduate course in Electronics and Communication Engineering and one post graduate course in Communication Systems. The department has well-equipped laboratories with the facility of working in various areas like Integrated circuits, Microprocessor and Microcontrollers with interfaces, Microwave and optical communication, Digital signal processing and VLSI etc.

The department has dynamic and committed faculty members who have published and presented papers in various Journals, National and international conferences in the area of speech processing, image processing, wireless communication networks and neural networks. Original MATLAB 7.0 with signal processing tool box, ORCAD PSPICE 16.0 version, XILINX 9.1 version is added to the department to bring multi faceted knowledge among students in the ECE discipline. The department in association with student professional bodies like ISTE, ICTACT has organized several workshops, conferences and other technical events.

The ultimate aim of the department is to foster the technical skills in the field of Electronics and Communication that will help the students to practically express their findings as products conducive to the society.

VISION OF THE DEPARTMENT

To develop high quality, technically competent and socially responsible Engineers in the field of communication from rural background.

MISSION OF THE DEPARTMENT

- * To imbibe technical skills among graduates relevant to the area of electronics and communication engineering field.
- * Making our students technologically superior and ethically strong.
- * To instill skills among students to meet the industrial requirement

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

Program Educational Objectives (PEOs) are Broad Statements that describe what Graduates are expected to attain within a few years of Graduation. Program Educational Objectives are based on the needs of the program's Constituencies.

OBJECTIVES OF THE PROGRAM

PEO1: *Core Competence*

Graduates Excel In analyzing, designing, simulating and testing of all Electronics and Communication Engineering.

PEO2: *Breadth*

Graduates exhibit their multidisciplinary skills to integrate Contemporary knowledge.

PEO3: *Life Long Learning*

Graduates can adapt to lifelong learning to enhance their technical skills.

PEO4: *Professionalism*

Graduates excel in their professional careers as Engineers, consultants and entrepreneurs.

PROGRAMME OUTCOMES (PO'S)

Programme outcomes are narrower statements that describe what students are expected to know and be able to do upon the graduation. They are formed in line with the graduate attributes of NBA. These relate to the skills, knowledge, attitudes, values and behavior outcomes that students acquire through the programme. Graduates will have ability to:

Programme Outcome 1 (Engineering Knowledge):

Understand and apply basic concepts of Mathematics, Physics, Chemistry and Engineering.

Programme Outcome 2 (Problem Analysis):

Understand and analyze circuit theory, electromagnetic theory, control theory, communication theory and apply them to electronics and communication engineering applications.

Programme Outcome 3 (Design & Development of Solutions):

Analyze and design the electronic components and to apply in analog and digital communication systems.

Programme Outcome 4 (Investigation of Complex Problem):

Analyze and design the electronic components and to apply in analog and digital communication systems.

Programme Outcome 5 (Modern Tools Usage):

Use contemporary computing tools and techniques in electronics and communication Engineering applications.

Programme Outcome 6 (Engineer and Society):

Handle engineering aspects of modern electronics and communication technology, utilization and the impact of engineering solutions to the Societal needs.

Programme Outcome 7 (Environment & Sustainability):

Acquire knowledge of contemporary issues to sustain the ever changing environment.

Programme Outcome 8 (Ethics):

Apply the ethical principles to their profession and social issues.

Programme Outcome 9 (Individual & Team work):

Perform individually and in a group to accomplish a common goal.

Programme Outcome 10 (Communication):

Effectively communicate and present technological developments.

Programme Outcome 11 (Lifelong Learning):

Gain self-confidence to engage in lifelong learning.

Programme Outcome 12 (Project management & Finance):

Plan and manage a project in a cost effective manner.

ADMINISTRATOR'S MESSAGE



India has the world's largest population. It is not enough to only foster cognitive intelligence among the youth. The youth requires a mutual faculty endowed with multi dimensional intelligence. What are the objectives that the youth should work towards? These cannot be purely materialistic, materialistic Programme alone does not guarantee national security. What is essential is the character or integrity of the country's citizens. A national policy for integrating spiritual values and organization leadership can be achieved through measures by which we can create a modern Mindset among the youth. This will not only motivate them to acquire technical cognitive competence but also develop their emotional,, moral , social, spiritual, environmental and innovational intelligence. This will make them more patriotic self-reliant individuals of high character, possessing a social conscience. Such an army of evolved youth will be the asset of the nation

PRINCIPAL'S MESSAGE



I am happy to meet all of you through this technical magazine and I thank all the staff who strived to give professional education in a new perspective manner and achieve perfection in all the fields. The main reason for our tremendous performance in various activities is the involvement of the faculty members who motivated students whole heartedly to participate in the seminars, industrial visit, inter activity session and other extracurricular activities to inculcate in them sound moral values, strong personality and eagerness to work in the society. Because of these efforts we have been successful in moulding the personality of our students and imbibe in them moral values and the spirit to team work.I wish this

solidarity continues for successive years and we would be proud to release many more magazines like this, highlighting our achievements. I have no doubts in near future PEC will be termed as one of the leading technical institutions in our district.

HOD MESSAGE



The Department of Electronics & Communication Engineering has consistently maintained an exemplary academic record. The greatest asset of the department is its highly motivated and learned faculty. The available diversity of expertise of the faculty with the support of the other staff prepares the students to work in global multicultural environment. The graduates of the Electronics & Communication Stream have been selected by some of the world's leading corporations & as well as by most of the leading Indian counter parts. We hope that we will continue to deliver our best to serve the society and mankind. It is also expected and that our students will continue to pass-on the skills which they have developed during their stay at this department to whole of the world for a better society. We will be happy to receive your suggestions for further improvement and development of our department.

FROM THE EDITOR'S DESK

Dear Students,

We hearty welcome you to the ECE Department's Magazine for the academic year 2018-2019.

I congratulate all my team members for their constant effort in launching this Magazine. We are also thankful to our Management and Principal for their support and encouragement. Finally we are gratified to our reviewers for their frank opinions and constructive suggestions, namely our colleagues and students

ELECTRO-PAGES

CNT Finding Could Lead to Flexible Electronics with Longer Battery Life



University of Wisconsin-Madison engineers have made a significant leap towards creating higher-performance electronics with improved battery life and the ability to flex and stretch. Led by materials science Assoc. Prof. Michael Arnold and Prof. Padma Gopalan, the team has reported the highest-performing carbon nanotube transistors ever demonstrated. In addition to paving the way for improved consumer electronics, this technology could also have specific uses in industrial and military applications.

In a paper published recently in *ACS Nano*, Arnold, Gopalan and their students reported transistors with an on-off ratio that's 1,000 times better and a conductance that's 100 times better than previous state-of-the-art carbon nano tube transistors.

"Carbon nano tubes are very strong and very flexible, so they could also be used to make flexible displays and electronics that can stretch

and bend, allowing you to integrate electronics into new places like clothing," says Arnold. "The advance enables new types of electronics that aren't possible with the more brittle materials manufacturers are currently using."

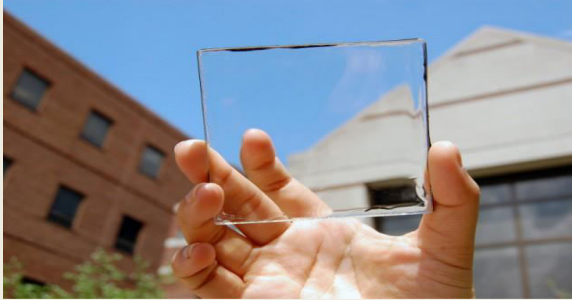
The team's most recent advance also brings the field closer to realizing carbon nanotube transistors as a feasible replacement for silicon transistors in computer chips and in high-frequency communication devices, which are rapidly approaching their physical scaling and performance limits.

"This is not an incremental improvement in performance," Arnold says. "With these results, we've really made a leap in carbon nanotube transistors. Our carbon nanotube transistors are an order of magnitude better in conductance than the best thin film transistor technologies currently being used commercially while still switching on and off like a transistor is supposed to function."

Punith.L ,IV Year ECE



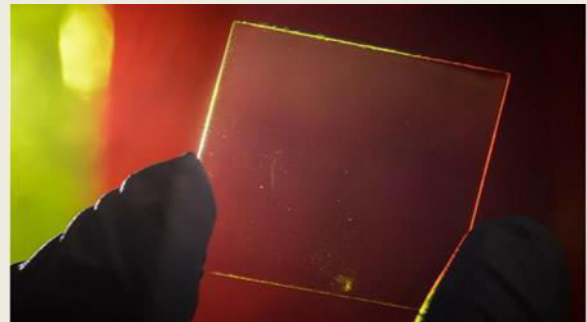
Transparent Solar cells



Researchers at Michigan State University have created a fully transparent solar concentrator, which could turn any window or sheet of glass (like your Smartphone's screen) into a photovoltaic solar cell. Unlike other "transparent" solar cells that we've reported on in the past, this one really is transparent, as you can see in the photos throughout this story. According to Richard Lunt, who led the research, the team is confident that the transparent solar panels can be efficiently deployed in a wide range of settings, from "tall buildings with lots of windows or any kind of mobile device that demands high aesthetic quality like a phone or e-reader."

Scientifically, a transparent solar panel is something of an *oxymoron*. Solar cells, specifically the photovoltaic kind, make energy by absorbing photons (sunlight) and converting them into electrons (electricity). If a material is transparent, however, by definition it means that all of the light passes *through* the medium to strike the back of your eye. This is why previous

transparent solar cells have actually only been partially transparent — and, to add insult to injury, they usually they cast a colorful shadow too.



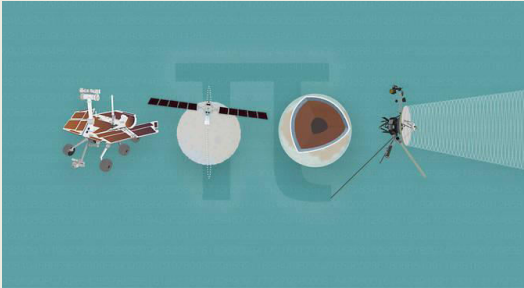
To get around this limitation, the Michigan State researchers use a slightly different technique for gathering sunlight. Instead of trying to create a transparent photovoltaic cell (which is nigh impossible), they use a *transparent luminescent solar concentrator* (TLSC). The TLSC consists of organic salts that absorb specific non-visible wavelengths of ultraviolet and infrared light, which they then luminesce (glow) as another wavelength of infrared light (also non-visible). This emitted infrared light is guided to the edge of plastic, where thin strips of conventional photovoltaic solar cell convert it into electricity. [Research paper: "Near-Infrared Harvesting Transparent Luminescent Solar Concentrators"]

By

B.SARITHA

IV Year ECE

On Pi Day, How Scientists Use This Number



Source: NASA/JPL-Caltech

If you like numbers, you will love **March 14, 2015**. When written as a numerical date, its **3/14/15**, corresponding to the first five digits of pi (3.1415) -- a once-in-a-century coincidence! **Pi Day**, which would have been the 136th birthday of **Albert Einstein**, is a great excuse to eat pie, and to appreciate how important the number pi is to math and science. Pi is the ratio of circumference to diameter of a circle. Any time you want to find out the distance around a circle when you have the distance across it, you will need this formula.

Despite its frequent appearance in math and science, you can't write pi as a simple fraction or calculate it by dividing two integers (...3, -2, -1, 0, 1, 2, 3...). For this reason, pi is said to be "irrational." Pi's digits extend infinitely and without any pattern, adding to its intrigue and mystery.

Pi is useful for all kinds of calculations involving the volume and surface area of spheres, as well as for determining the rotations

of circular objects such as wheels. That's why pi is important for scientists who work with planetary bodies and the spacecraft that visit them.

At NASA's Jet Propulsion Laboratory, Pasadena, California, pi makes a frequent appearance. It's a staple for Marc Rayman, chief engineer and mission director for NASA's Dawn spacecraft. Dawn went into orbit around dwarf planet Ceres on March 6. Rayman uses a formula involving pi to calculate the length of time it takes the spacecraft to orbit Ceres at any given altitude. You can also use pi to think about Earth's rotation.

"On Pi Day, I will think about the nature of a day, as Earth's rotation on its axis carries me on a circle 21,000 miles (34,000 kilometers) in circumference, which I calculated using pi and my latitude," Rayman said. "To calculate the hydrogen produced in a given unit area, we divide by Europa's surface area, which is the area of a sphere with a radius of 970 miles (1,561 kilometers)," Vance said.

Make sure to note when the date and time spell out the first 10 digits of pi: 3.141592653. On 3/14/15 at 9:26:53 a.m., it is literally the most perfectly "pi" time of the century -- so grab a slice of your favorite pie, and celebrate math!!

Reference: ww.nasa.gov/jpl

ELECTRO-CRAFT

How to make Shake-A-Can Generator...!!!

Make a simple generator that will help show how electricity is produced. A generator works because the magnets are exciting the electrons in the coil. The magnet moving back and forth creates alternating current (AC). That is the electrons are moving back and forth through the coils and the LED (light emitting diode). The excited electrons passing through the LED lights the LED.

Step 1: Materials

Material Required:-

- 35 mm film canister
- Thin insulated copper wire*
- Magnets that just fit in canister**
- Scissors or wire cutters
- Sandpaper
- Red LED
- Tape

*30 gauge magnet wire is used

**Neodymium magnets work best but we were able to get the light to turn on with ceramic magnets (much cheaper).

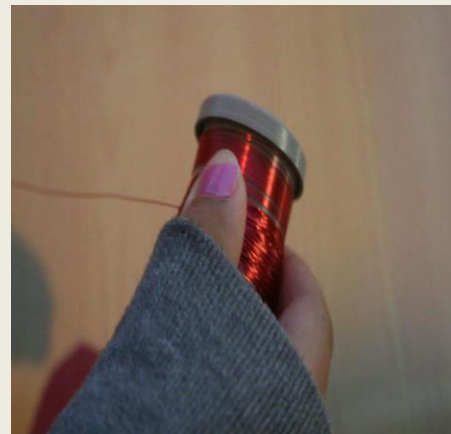
Step 2: Put Wire into Can

Take 35 mm film can and remove the lid. Place about (it's not rocket science here) 3 inches of the wire into the can and close the lid.



Step 3: Wind Wire

Wind on 500 to 1000 turns of thin, insulated copper wire. We recommend 1000 turns. Cut from spool of wire. 1000 times wrapped around looks like this.



Step 4: Tape Wire Down

Add a layer of tape to keep the wire from unwinding. Remember to leave about 3 inches of wire free at each end. Carefully take out the 3 inches of wire from inside the canister.



the two ends of the can with thumb or forefinger on the lid to stop it coming off!

Shake it. The LED will light!!



Step 5: Attach LED

Scrape off 1/2 inch of insulation from the ends of the wire (using sandpaper) and connect to the LED (it does not matter which leg of the LED goes with which side of wire). Solder the connections if possible or wrap the exposed wire to the legs of LED. Use some tape to secure the wire and LED to the bottom, top, or side of the can.

Step 6: Shake

Put magnet into the can and snap the lid back on. Hold the can between thumb and forefinger at

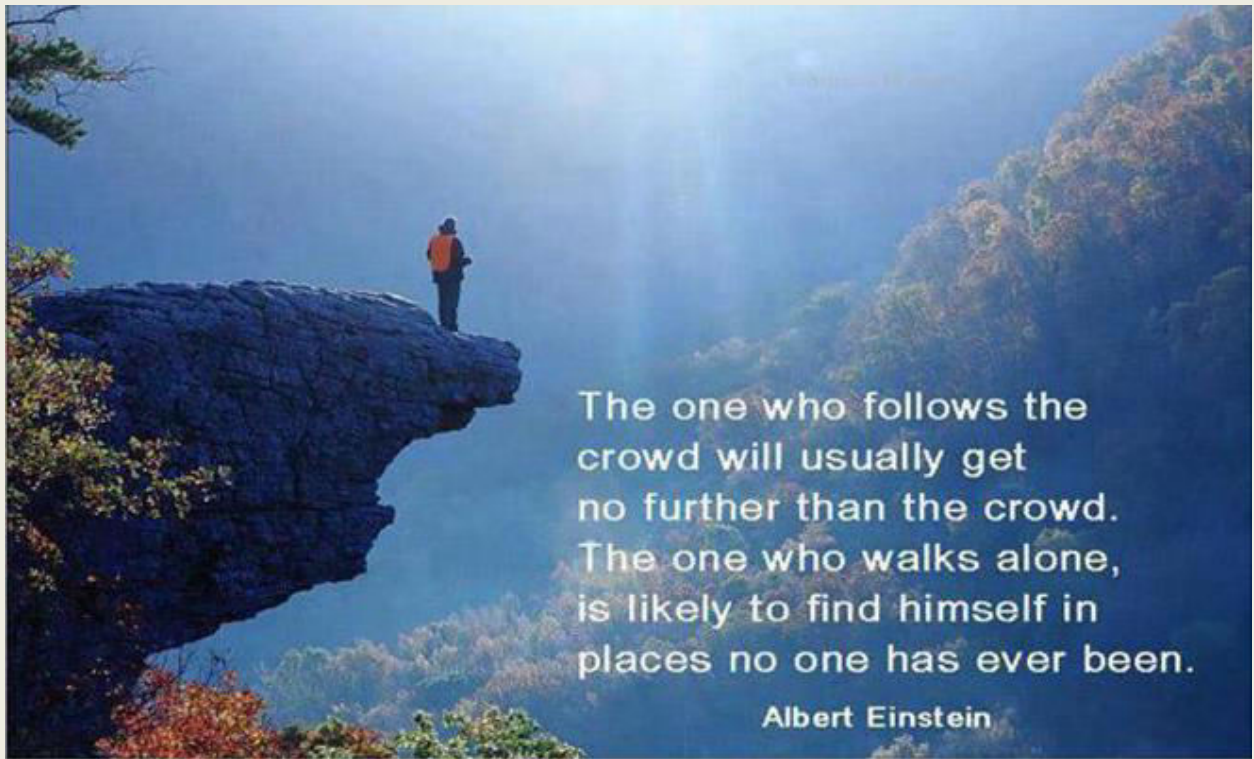


Reference:

<http://www.instructables.com/id/Shake-A-Can-Generator/>

IMPULSE





The one who follows the crowd will usually get no further than the crowd. The one who walks alone, is likely to find himself in places no one has ever been.

Albert Einstein



Success is focusing the full power of all you are on what you have a burning desire to achieve.

- Wilfred Peterson.

NEWS POINT

8 crazy new solar research breakthroughs

As the solar industry booms, so does R&D. Here are 8 exciting new research developments in solar energy research.



Researchers created solar powered leaves on 3D printed tree trunks, making a mini electric forest.

The research behind solar energy is booming, too. Scientists are discovering new ways to decrease costs and increase efficiency of solar panels and coming up with creative, impressive ways to generate power. Here are eight examples.

1. Bionic leaf

Scientists at Harvard recently created a bionic leaf, which uses a catalyst to make sunlight split water into hydrogen and oxygen, and then bacteria engineered to convert carbon dioxide and hydrogen into a liquid fuel called isopropanol. They're almost at a 1% efficiency rate of turning the sunlight into the fuel -- in other words, they've found a way to recreate the efficiency of photosynthesis.

2. 3D printed solar powered trees

Researchers at the VTT Technical Research Centre of Finland created a solar powered electric forest with 3D printed trees. That's quite a bit of buzzworthy tech in one project. The trunk of the trees is made from 3D printed wood biomaterials, and the leaves are the solar "panels". They are much less efficient than traditional PV panels, but the research they're doing for solar cells is promising as well.

3. Perovskites

Perovskites are materials with a specific crystalline structure. Stanford University researchers found that using lead, ammonia, and iodine, they could make a lot of it for cheap. Perovskites are more efficient than silicon in some ways, so the idea is using them to supplement rather than replace silicon may be a way to increase the efficiency of solar cells. At Stanford, a silicon solar cell with an efficiency of 11.4% increased to 17% with perovskite.

4. Thin film solar

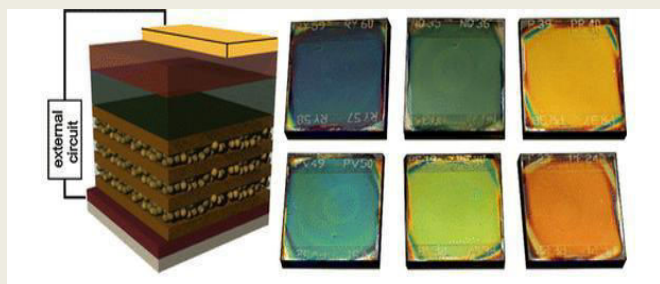
New research from Cornell, published in Nature in January, showed that scientists are reporting better solar cells by changing the chemistry of the materials. Thin film solar, which is a photovoltaic material onto a substrate like

silicon. The ones made by these researchers at Cornell are organic-inorganic metal halide perovskites, which the team has been studying for a while. The new solar cells use a liquid source and a simple coating, which can make it appealing for more commercial uses.

5. Carbon-based solar cells

Another cheap alternative to silicon that has emerged is printed carbon-based, or organic, solar cells. The efficiency is still relatively low compared to other materials, and the research surrounding it peaked about a decade ago. But, as perovskites gain popularity in reducing the cost and increasing efficiency of cells, carbon-based options are looking like contenders, too.

6. Colored solar panels



New colored solar panels.
Image: University of Oxford

Scientists have found a way to make solar panels a little more aesthetically pleasing. They layered silicon dioxide, often used to make glass optical fibers, and titanium dioxide, used to absorb UV rays, to make a photonic crystal structure that can absorb sunlight. Colors appear when light is

reflected and absorbed, and the colors change depending on the thickness of the materials.

7. Polymer solar cells

Polymer solar cells, called P1D2, may increase solar cell efficiency. The research comes from the University of Chicago's chemistry department, the Institute for Molecular Engineering, and Argonne National Laboratory. The polymer breaks down easier and allows more electrons to travel faster. The researchers said in a test, it increased solar cell efficiency by 15%.

8. Solar concentration technology

Concentrating photovoltaic (CPV) systems are giant and have to be angled very accurately to get the right amount of sun during the day. They work great, but they're not ideal for roofs. Now a team of researchers is working on using that high-efficiency technology for rooftop PV systems by building them with miniaturized, gallium arsenide photovoltaic cells and 3D printed plastic lens arrays. The systems weigh less, cost less, and are much smaller than CPV systems, though, and can be optimized for rooftops.

Reference:

<http://www.techrepublic.com>

10 Common Misconceptions about Mobile Device Batteries

1. Batteries have "memory"

Not at all. People used to think that you had to "train" your battery to make sure it would take the most charge. To do that, people would drain it regularly and charge it -- and they'd never plug it in when it was over 50%. The thought was that over time, the battery would develop a memory and allow for just a percentage of the charge. This is not true. If your battery is at 80%, top that baby off. Frequent charges will do no damage to your battery.

2. Off-brand chargers will damage your battery

Although some off-brand chargers aren't optimal (and some even take longer to charge the battery), they will not harm it, as long as the charger is working properly. This means it's perfectly okay to run to Target and buy that cheap charger to replace the factory charger that came with your phone. The one exception to this is the charger that shipped with your Droid Turbo. Make sure, when looking for a replacement, you find one made specifically for that device; otherwise, you won't enjoy the 15-minute charge time that delivers eight hours of usage.

3. Charging your phone overnight will damage your battery

False. Most smart phones are now "smart" enough to know when a battery is at capacity and will stop charging. However, there is one thing you can do to extend the life of your battery. Instead of charging your phone all night, every night, try keeping it charged between 40% and 80% most of the time. This will ensure the longest possible life from that battery. If you can leave it unplugged overnight (every so often), do so.

4. Don't use your phone while it charges

People seem to think that using a phone while it charges will have a negative impact on the quality of charge the battery gets. But unless you're using a low-quality knock-off charger, this is not remotely true. Your battery will charge as expected whether or not you use the device. Think about it this way. With smart phones, chances are the only way there is no syncing of data (in one way or another) is if the phone is off. So even when you aren't literally using your phone, your phone is using your phone and data is being synced. So go ahead and use that phone while it charges.

5. Turning off your phone can damage your battery

Nope. There isn't even the slightest truth to this. Of course, if you leave your phone off for an extended period of time, the battery will drain (that's the nature of batteries). But it is perfectly fine to shut that device off every once in a while.

6. You should always charge your phone to full before first using it

Many people think that the first thing they should do with a new Smartphone is plug it in and charge it to 100%. This is simply a myth. Remember, Smartphone batteries work best between 40% to 80%, and since most phones ship at half capacity, you should be good to go out of the box. As a side note: If you fire up your new Smartphone for the first time and the battery is below 40%, you might want to consider taking it back because that battery could be very old.

7. Putting your battery in the freezer will extend its life

I remember that back in the 80s, we placed batteries in the freezer for a short period to try to get a bit more life out of them. It didn't work then and it won't work now. In fact, Li-Ion batteries are negatively affected by both heat and cold. Room temperature is always the best temperature for your Smartphone battery. Remember, those devices already get hot, so there's no need to expose them to extra heat -- and cold are an enemy of Li-Ion batteries. Also,

make sure you store your device somewhere with airflow.

8. Using the internet will run down the battery faster than anything else

Not true.* The single most draining thing you can do on your Smartphone is gaming. The graphics engines are massive energy drainers. If you game a lot on your devices, dim the screen as much as you can while playing (if you want to extend your battery life). But if you can play that game while charging, go ahead and keep that screen at full brightness.

9. Turning off Wi-Fi, Bluetooth, and GPS will prolong your battery

In and of itself, this is false. The only time these services actually drain your battery is if they are in use. So having Bluetooth turned on, when you're not using a Bluetooth device, isn't going to drain your battery any more than having Wi-Fi on when you're not accessing the network.

10. Task managers help prolong your battery life

As much as I hate to say it, third-party task managers do nothing for battery life that the built-in system can't handle. Yes, those task managers can whitelist /blacklist tasks. But in the end, they really don't help your battery any more than the built-in system.

Some lesser known facts of APPLE co.



- The very first apple computer ever built cost \$666.66 i.e. around 41500/- INR. Pretty expensive.
- Fake Apple stores in China were so convincing that even their employees thought they were real.
- The top nine Apple executives make more money than 95,000 Apple factory workers in China.
- Microsoft spends way more than Apple does on research.
- Apple cannot market iPhones in Brazil because another company owns the trademark.
- Steve Jobs eliminated all corporate charity programs in 1997.
- Apple had a third co-founder, Ronald Wayne, who sold his shares for \$800 in 1977.
- Smoking near an Apple computer may void its warranty. Condition applies *.
- Apple once had more cash in the bank than the US Treasury had money to spend.
- Apple Corps, a company founded by The Beatles, was engaged in a legal battle with Apple Inc. over trademark rights for 28 years.

AMAZING FACTS!!!

- YOGA has its origins in INDIA and existed for over 5000 years.
- You are born with 300 bones, by the time you are an adult you will have 206.
- One fourth of the bones in your body are in your feet.
- INDIA has the largest number of post offices in the world.
- The average person spends 2 weeks of their lifetime waiting for the light to change from red to green.
- Dead people can get goose bumps.
- Coca-Cola would be green if the food colorant wasn't added.
- "Almost" is the longest word in the English language with all the letters in alphabetical order.
- Earth is the only planet not named after a god.
- To produce a single pound of honey, a single bee would have to visit 2 million flowers.
- There are no naturally occurring blue foods, even blueberries are purple!
- The elephant is the only mammal that can't jump!
- The world largest road network is in INDIA; over 1.9 million miles of road cover the country.
- You cant fold a piece of paper in half more than seven times.
- INDIA has the largest amount of vegetarians in the world.
- Coffee beans aren't beans they're fruit pits.
- The only domestic animal mention in the Bible is cat.
- The infinity sign is called Lemniscates.
- Did you know the average Woman will consume over 2.7kg of lipstick in their lifetime?
- Only female mosquitoes bite.
- Gold is eight times heavier than any other metal on earth.
- The first cell was invented in 1924.
- CHESS was invented in INDIA
- INDIA has second largest pool of scientist and engineer in the world.

7 STEPS TO HAPPINESS

Think Less, Feel More

Frown Less, Smile More

Talk Less, Listen More

Judge Less, Accept More

Watch Less, Do More

Complain Less, Appreciate More

Fear Less, Love More

InspirationBoost.com