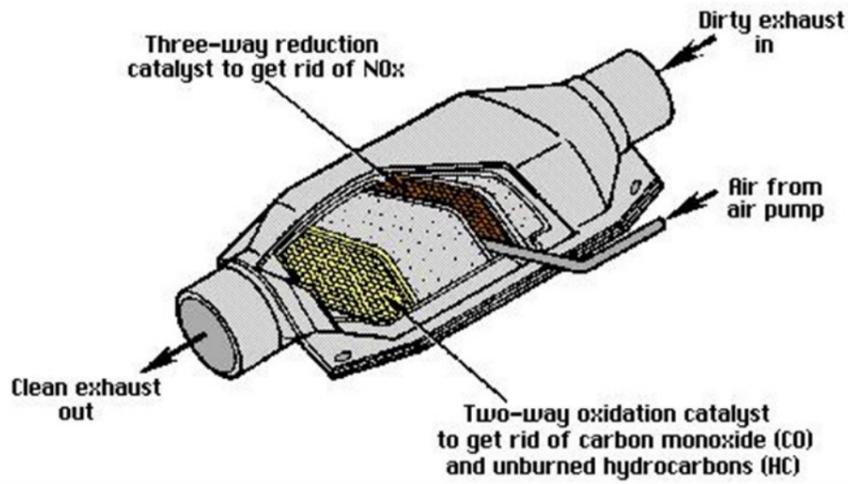




## CATALYTIC CONVERTER



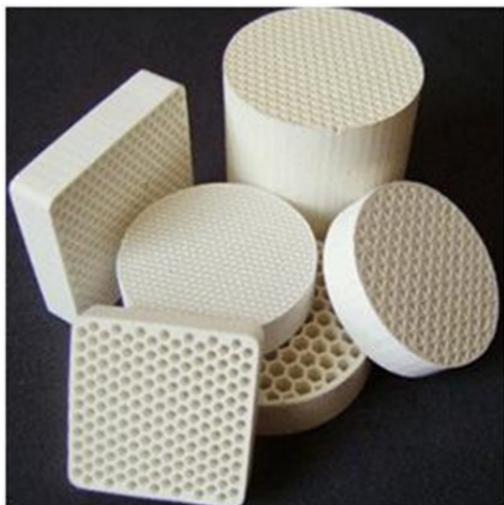
Millions of cars on the road means only one thing, an excellent source for air pollution. The amount of pollution that all cars produce together can create big problems. The amount of pollution that all cars produce together can cause big problems. Government created laws that restrict the amount of pollution that cars produce to solve it. Auto makers have made many improvements to car engines and fuel systems to keep up with these laws. In 1975, an interesting device called catalytic converter was created.

- ◆ The device, converts harmful pollutants into less harmful emissions before they ever leave the car's exhaust system.
- ◆ The exhaust from the combustion in a car engine is comprised of six main ingredients:
- ◆ Nitrogen gas, Carbon dioxide and water vapor are the three of the main emissions. These gases do not cause damage to the atmosphere.
- ◆ Carbon Monoxide, other hydrocarbons and Nitrogen Oxides result in a majority of the pollution caused by cars.
- ◆ Carbon monoxide is a colorless and odorless gas that can kill you if too much is inhaled
- ◆ Hydrocarbons are produced during incomplete combustion and these hydrocarbons can be broken down by the sun, creating ground level Ozone, also known as smog.
- ◆ Nitrogen Oxides can cause acid rains.

Catalytic converters are designed to reduce these last three emissions.

### Construction:

- ◆ The core is often a ceramic/stainless steel foil honeycomb.
- ◆ increases the amount of surface area
- ◆ Support the catalyst. Also called "catalyst support".
- ◆ A wash coat is used to make converters more efficient because a mixture of silica and alumina will form a rough and irregular surface which leads to more surface area.
- ◆ Therefore, more places for active precious metal sites. The catalyst is added to the wash coat before applied to the core.
- ◆ Platinum is the most active catalyst and is widely used. Other materials such as palladium and rhodium have also been used.



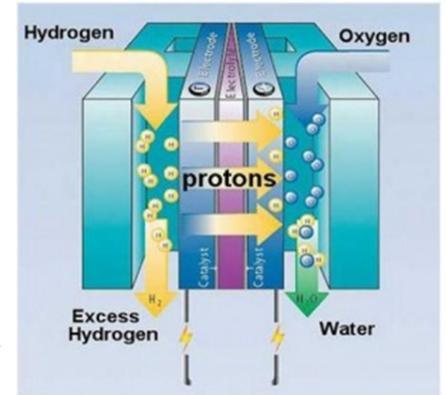
Jimit Vyas

## Hydrogen Powered Car

Technically a device that converts the energy stored in hydrogen into motion can be called a Hydrogen engine. Hydrogen would make a great fuel for the environment since burning Hydrogen produces nothing but water!

Hydrogen Powered car essentially consists of the following

- ◆ Fuel tank: Liquid hydrogen is stored in a tank at the rear of the car and is pumped forward to the fuel cell stack as and when required.
- ◆ Fuel Cell Stack: When Hydrogen is combined with Oxygen in a fuel cell a chemical reaction creates electricity.
- ◆ Battery Pack: The battery pack is periodically recharged by the fuel cell. The power from the battery pack is used to provide rapid acceleration.
- ◆ Electric Motor: The stack provides electricity for the electric motor that powers the vehicle.



Right from the year 1625, when Johann Baptista van Helmont discovered the gas, Hydrogen; people were curious enough to find the uses of the new found gas. It nearly took a mind boggling 181 years to develop an internal combustion engine which runs on a mixture of hydrogen and water by the icon of 18th century who is none other than, Francois Issac de Rivaz. The Swiss inventor, is credited with the development and construction of the world's first IC engine back in 1806. From then onwards, it was always a challenge to develop the best IC engine. This has led to developing different varieties of engines.

A pictorial representation of the Hydrogen powered vehicle is shown below.

Advantages of Hydrogen Fuel Cell:

Zero emissions (pure water is produced)

No dependence on foreign oil

Ability to harvest solar and renewable energy

Not many moving parts in a vehicle (more mileage before things start breaking)

Hydrogen weighs less than gasoline (vehicles would not need as much energy to move)

Comparable Efficiencies

Hydrogen Fuel cells at over 50% efficiency

Fossil fuel powered car at 10% - 20% efficiency

Hybrid powered cars have 30% - 35% efficiency

Companies Getting Involved

- ◆ Ford- P2000
- ◆ Honda- FCX
- ◆ Mazda- Winkle motor
- ◆ BMW (within 2 years)
- ◆ Hydrogen 7



Ukshil Jain



Looking at the market of Apple ios and MAC, Governing Body of the college thought to establish a dedicated Apple Lab for MAC & ios training for the betterment of the students. Recently we launched 3 days workshop on ios training which was 1st time in the state and happened rarely even in entire country. Due to the same, this initiative was appreciated by GTU, IT experts and press media. Due to huge response of students from our college as well as other colleges, we conducted 3 more workshops and registrations for 5th workshop is going on! Apart from this, we are planning to launch a full time course on ios which would be totally industry oriented and beneficial for projects & placement related activities. We have also planned to do one day MAC training workshops, benefit of which can be availed by all the students of various departments including Mechanical, Civil etc. There are many other plans and enhancements discussed with Hon. Chairman of the institute and will be in execution soon.



Date	Total Participants
29/7/13 – 31/7/13	29
1/8/13 – 3/8/13	32
8/8/13 – 10/8/13	33

## IOS Workshop

### Community Services

- ◆ Students visited “Jeevan Sandhya” vradhashram ,Hiramani School on 27/7/13 and celebrated birthday of 3 members of the ashram and also quiz and garba were organized to entertain old age people.
- ◆ Funds were collected by students for blind girls of “Andhkanya Prakash Group” by selling their handmade rachis in college canteen
- ◆ Institute has recently signed a MoU with “Sadvichar Parivar” to bring the awareness about anti-tobacco campaign , hygiene etc. to children of municipal corporation schools and surrounded village schools under the campaign –“Awareness about health among school children”

### Bridge Course(22nd July,13 to 31st Aug,13)

The Bridge Course is aimed to act as a buffer for the new entrants, with an objective to provide adequate time for the transition to hardcore engineering courses. Students were groomed for the foundation subjects. During this interaction of 6 weeks with the faculty and their classmates, the students were equipped with the knowledge and confidence needed to take on bigger challenges as future engineers of this country. The Bridge Course was designed with a mixed set of activities during the class. Hence the teacher-student contact was not classified into number of hours for lecture(theory) class or practical(laboratory) classes. Interactive and Active Learning was weaved into Bridge Course for first time.

### 15th August,2013

67th Independence Day was celebrated in presence of about 700 students and all staff members of SO CET. The students of SO CET have performed on various aspects of “Saptdhara” patriotic philosophy. The celebration also included exhibition on “Career opportunity for Engineers in Indian Defense services. It was followed by high tea sponsored by management.

### Student Achievements

Five students of Mechanical Dept. represented college at BAJA-2014 for national level competition under guidance of Mr.Aniruddh Kyada & Mr.Ripen Shah

Sr.	Date	Time	Topic	Speaker	Dept-Sem	Type
1.	12 <sup>th</sup> July	2 pm to 3:30pm	Moon Mission	Dr.Y.B.Acharya (Scientist-Enginner from Physical Research Laboratory (PRL))	EC-V	Expert Lectures
2.	30 <sup>th</sup> July	11:am to 1:30pm	Building Information Modelling Software	Mr.Shivang Rajveer & Mr. D.I. Ganguly (Dimension Plus Company)	Civil-VII	
3.	5 <sup>th</sup> August	2pm to 3pm	Space Technology	Dr.Rishi Gadawala (Expert in Space Industry)	EC- VII & V	
1.	16 <sup>th</sup> July	11am to 1pm	IDP & UDP	Mr. Jatin Choudhary (GTU) Mr. Shard Parekh(Strut Renewable Source Industry)	ME-VII	Seminars
2.	17 <sup>th</sup> July	10 am to 12 noon	SAE Design	Miss Kajal Prajapati (ME-VII sem student SO CET)	ME-III & V	
3.	20 <sup>th</sup> July 26 <sup>th</sup> July 31 <sup>st</sup> July	1:30 pm to 3:30 pm	TCES (Tech Civil Engineering Sessions)	SOCET students	Civil-III , V & VII	
4.	22 <sup>nd</sup> Aug	10 am to 3:30pm	GEDA-energy conservation programme	Mr R.N.Pandya (Senior Project Executive from GEDA) Mr Alpesh Pandya Mr. Kapil Jani Mr.Piyush Kakadiya (Energy Auditor-Total Energy Consultant)	ME-VII	
1.	5 <sup>th</sup> July to 4 <sup>th</sup> August	3:30pm to 5:00 pm	Robotics & Embedded C	Manal Sankhla	EC-VII	Workshop

“Losing is a part of winning ” Dick Munro

## SOCET Robotics participated Events and won 33+ Ranks across Ahmedabad Zone in various robotics competitions

During this techfest season teams participated in all colleges of Ahmedabad zone and performed very well in events like war, soccer, Race and aqua robotics



### Faculty Development Programme

Date	Topic	Speaker
9/7/13 to 11/7/13	Bridge Course Workshop at GTU (Basic Subjects, Lifeskills, SCC)	Dr. Jayanti Ravi M.N. Patel (Principal, LD) M.R. Patel (Principal, VGEC)
13/7/13	Self Management	Swami Shyam Charan Dasji
10/8/13	Objective of the Program "Teacher as facilitator in learning" "Developing culture of continuous improvement" "Effective classroom teaching"	Dr. Saurin Shah Dr. Dawoodbhai Ganchi Dr. H.V. Trivedi Shri H.V. Doshi

### USB Dummy Protector

**Protect Your USB Drive from virus by this simple Program** this software protect your USB drives from viruses. Copy it to USB drive and execute from there. It creates dummy. File which takes all free space and these is no more space for viruses. To unprotect drive execute utility again or manually remove dummy. File.

It is not antivirus. You could execute it in virus free environment (at your computer for example). Then when you put your USB drive into computer with viruses most of viruses cannot infect your drive, because there is no room for virus there. Of course it would not protect from everything, but should help in most cases. Also it useful only if you need to read files from your drive. If you need to write something to it you need free space on USB drive and viruses could use this space too. And Interesting Things That this program is only 4 KB Size :)

Download Link :

<https://usb-dummy-protector.googlecode.com/files/UsbProtector.zip>

**Dashrath Goswami**  
4th sem  
Computer Engineering



## Steve Jobs (February 24, 1955 – October 5, 2011)

was an American entrepreneur, marketer, and inventor who was the co-founder, chairman, and CEO of Apple Inc. Through Apple, he is widely recognized as a charismatic pioneer of the personal computer revolution and for his influential career in the computer and consumer electronics fields, transforming "one industry after another, from computers and smart phones to music and movies. Jobs also co-founded and served as chief executive of Pixar Animation Studios; he became a member of the board of directors of The Walt Disney Company in 2006, when Disney acquired Pixar.

After a power struggle with the board of directors in 1985, Jobs left Apple and founded NeXT, a computer platform development company specializing in the higher-education and business markets.

In 1996, after Apple had failed to deliver its operating system the NeXTSTEP platform became the foundation for the Mac OS X. Jobs returned to Apple as an advisor, and took control of the company as an interim CEO. Jobs brought Apple from near bankruptcy to profitability by 1998

As the new CEO of the company, Jobs oversaw the development of the iMac, iTunes, iPod, iPhone, and iPad, and on the services side, the company's Apple Retail Stores, iTunes Store and the App Store. The success of these products and services provided several years of stable financial returns, and propelled Apple to become the world's most valuable publicly traded company in 2011

In 2003, Jobs was diagnosed with a pancreas neuroendocrine tumor. On medical leave for most of 2011, Jobs resigned in August that year, and was elected Chairman of the Board. He died of respiratory arrest related to his tumor on October 5, 2011.

Jobs received a number of honors and public recognition for his influence in the technology and music industries.



**Yash Lalchandani**  
Computer 3rd sem

**"Father of the Digital Revolution" "A Master of Innovation" "The master evangelist of the Digital Age" "A Design Perfectionist"**

Macintosh	NeXT	iMac	iPod	iPhone	iPad
Macintosh was introduced in January 1984. The computer had no "Mac" name on the front, but rather just the Apple logo. [151] Apple co-founder and former Apple engineer, Steve Wozniak, has said that the Macintosh failed under Steve Jobs, and that it wasn't until Jobs left that it became a success.	After Jobs was forced out of Apple in 1985, he started a company that built workstation computers. The NeXT Computer was introduced in 1989. Tim Berners-Lee created the world's first web browser on the NeXT Computer. The NeXT Computer was the basis for today's Macintosh OS X and iPhone operating system (iOS)	Apple iMac was introduced in 1998 and its innovative design was directly the result of Jobs's return to Apple. In 1999, Apple introduced the Graphite gray Apple iMac and since has varied the shape, colour and size considerably while maintaining the all-in-one design. Design ideas were intended to create a connection with the user such as the handle and a breathing light effect when the computer went to sleep. There were some technical revolutions for iMac too. The USB ports being the only device inputs on the iMac. So the iMac's success helped popularize the interface among third party peripheral makers, which is evidenced by the fact that many early USB peripherals were made of translucent plastic to match the iMac design.	The first generation of iPod was released October 23, 2001. The major innovation of the iPod was its small size achieved by using a 1.8" hard drive compared to the 2.5" drives common to players at that time. The capacity of the first generation iPod ranged from 5G to 10 Gigabytes. More than 100,000 iPods were sold before the end of 2001. The introduction of the iPod resulted in Apple becoming a major player in the music industry. After the 1st generation of iPod, Apple released the hard drive-based iPod classic, the touch screen iPod Touch, video-capable iPod Nano, screen less iPod Shuffle in the following years.	Apple began work on the first iPhone in 2005 and the first iPhone was released on June 29, 2007. The iPhone created such a sensation that a survey indicated six out of ten Americans were aware of its release. Time magazine declared it "Invention of the Year" for 2007. A year later, the iPhone 3G was released in July 2008 with three key features: support for GPS, 3G data and tri-band UMTS/HSDPA. In June 2009, the iPhone 3GS, added voice control, a better camera, and a faster processor was introduced by Phil Schiller.	iPad, a line of tablet computers was the last product by Steve, designed and marketed by Apple Inc. The first iPad was released on April 3, 2010. An iPad can shoot video, take photos, play music, and perform Internet functions such as web-browsing and emailing. Other functions—games, reference, GPS navigation, social networking, etc.—can be enabled by downloading and installing apps; as of 2013, the App Store offered more than 900,000 apps by Apple and third parties

**"My great concern is not whether you have failed, but whether you are content with your failure."**