

# METRON

A MEASURE OF YOUR HEART BEATS

Volume 2, Issue 2

DEPARTMENT OF E&I

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## “History of Valve”

Nature is the pedagogue of every construction. Every Engineering theorems/ Instruments/ Machines are derived from Nature. So when we think about the history of a Valve, early man may be inspired by an animal beaver and might have studied the regulation of the flow of streams and rivers by blocking them with a fallen tree or the use of large stones.

The origin of the valve traces back to the era after 43 AD. The early Egyptian and Greek civilizations devised several types of primitive valves to divert water for public consumption or for irrigation purposes.

The source of natural, consumable water is very low in Greece. The water was reserved in many ways. From natural pools of water, which acted as a reservoir and cisterns were constructed to store the rainwater. The scarcity of water was compensated using aqueducts, which tapped into wells and underground streams. From this source of water many cities and towns

were able to get enough water to function and use as a decoration. The scarcity of water motivated Acropolis to contrive a secret staircase that descended in a deep reservoir that held water piped from other springs. This reservoir was constructed to ensure that there would be enough water if the city were bombarded.

It is the Romans, however, who are credited as the creators of highly developed water systems, but Rome had absorbed engineering techniques from the previous generations of every country that it had conquered, in particular from the Greeks.

Roman plumbing was sophisticated enough to deliver water into individual buildings, for which they developed the plug valve, or stopcock, and there is also evidence that the Romans used check valves to prevent backflow. The word "plumbing" comes from the Latin term "plumbus" which means, "lead," early pipe and conduit was made from wood or earthenware.

The roman plug valves were made of bronze and three pieces compound it, body, plug, and bottom plus a lever to turn the plug.

The figure given repre-

sents a large valve which is housed in the Ostia museum of ancient Rome It is one of the largest known valves. It is still attached to large pipelines by heavy welds, which the Roman workmen so expertly accomplished.

There were no great advances in valve design until the rise of the Industrial Revolution although we do have sketches from the 15th Century by Leonardo da Vinci when he was designing a system of canals and locks.

In 1698 Thomas Savery patented the first crude steam engine, he later worked with Thomas Newcomen on the atmospheric steam engine. James Watt filed his first engine patent in 1769. The first Watt engines put out only about 6 horsepower. But, in less than 20 years, he'd built engines that delivered as much as 190 horsepower.

Steam was picking up those specialized tasks that were absolutely essential for the Industrial Revolution to take place - like pumping water out of mines. Steam was positioning itself to power the really heavy industries that would so change 19th-century life. The pressures built up by steam had

to be contained and regulated so valves acquired an important new role. And as James Watt and other inventors improved upon Newcomen's steam engine, designers and manufacturers also improved upon the valves used for these steam engines.

In 1829 At the Rainhill Trials to find a steam locomotive for the Liverpool to Manchester railway, George Stephenson's 'Rocket' was a clear winner, this was in part due to improvements made to the valves that enabled more accurate control of the amount of steam entering the cylinders. In later years rather than being designed as a specialized product to suit a particular project we would see valves manufactured on a large scale available as an off the shelf item for today's very diverse market.

Now vivid type of valves are available in the market now a days. Whose installation includes the consideration of factors like operation, principle and above all its size.

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Gallery View Block VJEC

**Coming Soon...**

**Yokogawa PLC & DCS: 5 day Hands on Session.**

**Signing of MoU with Yokogawa India Ltd.**

**Robo Vision (Advanced Level):** Two day workshop by Technophilia, Bombay.

**Hands on Training on "PCB Designing & Manufacturing" for Semester 3 AEI Students.**

**Inauguration of i- Zone (Department Association)**

**Seminar on "Scope of Instrumentation"**

**"SCIENTISTS INVESTIGATE THAT WHICH ALREADY IS; ENGINEERS CREATE THAT WHICH HAS NEVER BEEN."**



**Industrial Visit to FCRI & ITI**  
Our students had their industrial visit to Fluid Control Research institute and Indian Telephone Industries in Palakkad on 6th August 2011. The visit was truly a good response for our final year students. It gave them a chance to visualize the real

industrial scenario & also to interact with the eminent industrial personalities apart from their text books & Cyber world.

**Microcontroller Training for S5 Students**

**I- Fest '11 National Level Symposium On December '11**

**Industrial Visit for Semester 3 Students**

**Aawega '12 Technical Fest**



**2011 Passed out batch of AEI | Total Students Passed Out: 60**

### ***Congragulation Winners of Inter-state Robotic Events***

**2008– 2012** batch AEI Robotics team became the premium top notch in different competitions held as a part of technical fests conducted at various colleges. The team bagged the 3<sup>rd</sup> prize from IIT Madras and also 1<sup>st</sup> & 2<sup>nd</sup> prizes from GEC Calicut & CET Trivandrum for the event “Transporter”. The proficient team members includes Shone Jose, Jithin M Alias, Sachin Francis, Kiran Hareesh, Arun Jacob, Ben Baby, Justil Jose, Fenil P Cyriac, Nikhin Cyril and Jibin Kuriakose.

### ***Second Edition of PCB Workshop Organized on 6<sup>th</sup> March 2011***

The Second Edition of “Hands on Training in PCB Designing” was organized by the technical chapter of AEI Department “ISDC” on 6<sup>th</sup> of March 2011 by Mr. Sunil Paul ( Asst. Prof., ME), Mr. Rahul Antony (Asst. Prof., AEI) and Mr. Sreeraj P. V (Lr., AEI) took over the innovative domination of the session. For the benefit of the students, the sessions were conducted in two phases. The first session deals with the software designing part and the next session comprised the Hardware implementation of the PCB.

### ***Adieu to 2007– 11 AEI Batch***

An awe– inspiring Adieu was given to 2007 AEI batch by the students & Staffs of AEI Department. They are the 3<sup>rd</sup> pass outs of our department & we are really spirited about each one of them. Some of them are already successfully placed as a part of campus requirements, The farewell party was so indelible for them and us & is sure to be cherished as the most blissful days of their life.

### ***Various Competitions***

Department of AEI organized various events at the Inter college Level Tech Fest, AAWEGA 2k11 conducted on March 10<sup>th</sup> & 11<sup>th</sup>. Robotic Competition was one of the most enthralling events that was held. Transporter, Line follower, Robowar and Obstacle avoider were the sub events held under the robotics event. Each event was well organized & was well appended by the competitors and audience. Another event organized was the TREASURE HUNT which not only aroused the curiosity of the competitors, but also was a podium to portray the adventurous as well techatronic ability of them.

Treasure Hunt included, electronics and electrical circuit solving problems, funny games & computer level programs. The winner has to overcome all the obstacles within the specified time to reach the target. Another event was PCB designing competition, in which the competitors were asked to design a circuit using software & to print the circuit on a PCB board. The most well presented circuit won the prize. All the events was a portrayal of the confidence aroused among the students.

JOIN US... BE WITH US... GROW WITH US...

AND MAKE NEW CAREER WITH YOUR IMPROVED TALENTS...

### ***INSTRUMENT SOCIETY OF INDIA VJEC STUDENT BRANCH***

Students those who are interested in instrumentation, from any department can join in this Professional Society.



For more details contact: Mr. Rahul Antony, Asst. Prof., AEI

***If I've seen farther than others, it is because I was standing on the shoulders of Giants.***

***For Instrumentation News & Engineering Colleges Ratings  
Visit: [www.yourinstrumentation.blogspot.com](http://www.yourinstrumentation.blogspot.com)***

***“I am thankful to all those who said NO, It's because of them I did it myself”- Einstein***

***Coming Soon  
10th Year Celebrations  
of VJEC***

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ELECTRONICS &  
INSTRUMENTATION**



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**“Good work doesn't happen with inspiration. It comes with constant, often tedious & deliberate effort. Rise & Rise again until lamps be- comes Lions”**

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**“If you can't cre- ate your own answers in Ex- amination, then Engineering is not for you”- M. Visweswarayya**

**JOKE BOX**



A typical engineering student grabbed a coin, flipped it in the air and said  
”For heads i go 2 sleep, tails i watch a movie, If it stands on the edge I'll study .

**“Interaction with Industrial Expert”**

As a part of the indus- trial interaction and moti- vation for the students, Department of E & I or- ganized a programme “ Interaction with Indus- trial Expert” on 26th July 2011 at 9.15 AM. Mr. Madhu S., Instrumenta- tion Manager, Reliance Industries Ltd, Baroda, Gujarat was handled the session. He is working in the field of “petrochemical Instru- mentation”.

In this session the chances of “ Instrumen- tation Engineer in Indus- tries” was discussed and students got a chance to clear their doubts about the instrumentation jobs in petrochemical indus- tries and its working environment.

**What is reduce, reuse, recycle (R3)?**

Reduce, reuse and recycle (R3) are the three essential components of environmentally- responsible consumer behavior. R3 is sometimes called the waste hierarchy. Here's how that hier- archy might apply to computers:



- The concept behind the first R, reduce, is that you should limit the number of purchases that you make in the first place. So, for example, you might limit your household to a single computer.
- The concept behind the second R, reuse, is that you should reuse items as much as possible before replac- ing them. For example, it generally makes more envi- ronmental sense to update your computer rather than get rid of it and buy a new one. However, if you do replace your computer, you should ensure that it, or its components, are reused. Many charitable organiza- tions welcome donations of second-hand computers.
- The concept behind the third R, recycle, is that you should ensure that items or their components are put to some new purpose as much as possible. If your computer is not fit for reuse as is, you can donate it to one of several organizations, which will refurbish it or recycle its components.

Sometimes a fourth R is added to the three basic ones, generally standing for either "rethink" or "recover." Rethink is sometimes added to the front of the hierarchy, meaning that we should con- sider our options and think about their impact on the environment. Recover, which is the last R, refers to the practice of putting waste products to use. For example, decomposing garbage produces methane gas (one of the greenhouse gases), which some landfill sites recover and burn for energy rather than letting it dissipate.