AAR MAHAVEER NEWSLETTER

A quarterly publication of AAR Mahaveeer Engineering College, Hyderabad
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From the Principal's Desk

The academic year 2012-13 has ended and the new academic year has started. A new chapter has begun in the history of this college. The name has changed to *AAR Mahaveer Engineering College*. The newsletter has been renamed AAR Mahaveer Newsletter.

In some classes, the result has been 100% pass. Our wonderful students are back with us after their summer vacation. What can we, the teachers, do for them? We all believe that the best use of available time is the key to success and prosperity. Hence we all talk to our students about time management, especially for their examinations and for their placement interviews. But the question is whether we the teachers are managing our own time efficiently and effectively. In other words, do we practice before we preach? Every one of us must ask, "Did I begin the day at the college with work or breakfast in the canteen? How much time was spent in personal talk on the cell phone? In my spare time today, did I read the text book or prepare my lecture notes or did I relax or gossip? Did I say some thing useful to some one today or was it mere blah-blah? Have I exerted to the fullest extent of my capacity today or lost some time in gossip and rest? Every day, before I leave the college, do I list to myself what all jobs I could do during the day? Do I also estimate how much time was spent in useful work and how much went useless? What is my individual efficiency? Am I following my road map, whether I am ahead or lagging behind in syllabus coverage? I may feel satisfied that I have done the teaching for the day. I may also feel that we have done whatever was told to us by higher authority. But is this really enough? Can the college develop if I just follow the routine? Am I an independent and individual contributor? Have I contributed to an improvement in the place of my work? Can I do a better job this academic year compared to that in the previous year? Have I exerted to the fullest of my capacity? Do I frown at my students or do I smile? Are my students happy to see me or are they scared of me? Have I given them only subject knowledge or have I passed on values? Will my students remember me as their best teacher long after they leave the college?" Some teachers stop working when they are ready to go home. They will restart the work again after reaching the college the next day. Fortunately for the college and for the country, there are people who contribute to college work even after going home, be it setting a question paper or browsing the net and You Tube for NPTEL and other lectures and for collecting power point presentations or animations. These add value to their teaching and enrich the learning environment of the student. We are all experts in determining what some one else should do. But why not determine and implement what you can do? Barack Obama said, "Change will not come if we wait for some other person or some other time. We are the ones we have been waiting for. We are the change that we seek". Imagine with your entire mind, believe with all your heart and achieve with all your might.

– Dr. Palanki Balakrishna

In this issue .....

In this issue, we list toppers. There are photographs of students who participated in seminar on favourite teacher at school. The new teachers are interviewed by students. Then we talk about a lady of distinction, Dr. M Lakshmi Kantham. The last but not the least item is *From Far and near*. Indian Railways have come up with bio toilets. Indian scientists have developed a low cost vaccine. A cup of coffee a day keeps the doctor away. Not only fluffy animals, bacteria too have quorum sensing to be able to coordinate their attack. A lot of steel has been saved by copying planktons in structural engineering. What is a googloon? The earth is called a blue planet due to presence of water. But another blue planet has been found that has no water. The space craft Voyager 1, launched in 1977 is still going strong and is about to leave the solar system. You can twist light to boost data rates.

Toppers in III B.Tech II Semester JNTUH Examinations (May/June 2013)

ECE: **I** Fehmida Bano, **II** Hashmath Sultana **III** K Vineela

CSE: **I** P Pratyusha, **II** Y Uma, **III** Minu Mohan

EEE: **I** B Soundarya, **II** N Jamuna, **III** N Manjula

Toppers in II B.Tech II Semester JNTUH Examinations (May/June 2013)

ECE: **I** Syeda Fatima Zohra, **II** R Jayasree, **III** P Prasanna Kumari

CSE: **I** Preethi Lal, **II D Vaishnavi** Goud, **III** Wajiha Neha

EEE: **I** P Akhila, **II** B Spandana, **III** S Sushmitha

Junior Participants in seminar "My favourite teacher at school"

From left: N R Raveena, V Pavani, V Soundarya, G Pallavi, Ch. Mounica, Anu P Suresh, G Revathi, P Manasa (II B.Tech CSE)

Some teachers became lovable and friendly instantly, while we were scared of some others. We respected both types of teachers for their great qualities. We could confide in the friendly teachers for our personal problems. The teachers of whom we were scared of were really concerned of our progress in studies as well as in life and automatically earned our respect. We learned several things from our teachers. Give respect and take respect. Do not run away from a problem – face it with courage and find a way to solve. Speak with courtesy irrespective of the status of the listener. We received guidance for competitions at other places and we were escorted by the teachers. A student who came from another state had difficulty in learning Telugu and fared very badly in the first examination. Then the teacher spent a lot of time to help learn and the student got over 90% in the final examination. One teacher noted down birthdays and never missed greeting a student. One teacher had a great sense of humour and laced his teaching with jokes. Some teachers were so gifted that the usual noise makers in the class listened with rapt attention.

Senior Participants in seminar "My favourite teacher at school"

From lower left: Nahid Sadia, Farriya Naaz, Pothnak Mounika, Minu Mohan
From upper left: Rintu Joseph, B Srilakshmi, P Navya Sree (IV B.Tech CSE)

The teacher was new to the place, did not know my language, but she was deeply committed to educating us. The teacher permitted students to visit her house and spared her personal time of upto two hours a day for improving our performance in the examinations. A teacher got angry with students and threw away the books. The next day she felt remorse and distributed sweets. The teacher had excellent vocabulary and conveyed an idea in understandable and interesting manner. We understood so well that it became easy to remember. Teacher considered practicals as being very important. She spent a lot of time and effort to see that all the equipment and instruments are in working order and that every student did the experiment. Our early exposure to lab made us choose engineering education later. The teacher emphasized that learning is from birth to death. She taught how to behave in class room, canteen, at home and outside. A teacher made sessions interactive, with rewards for correct answers, but no scolding or chiding for wrong answers. The teacher was very encouraging, brought out our inner strength and strengthened our will power. Accompanied us and made us participate in debate, essay writing competitions and sports events held in other institutions. The subjects in which the teaching was great became our favourite subjects.

It is the supreme art of the teacher to awaken joy in creative expression and knowledge – Albert Einstein (1879-1955)

I have learned silence from the talkative, toleration from the intolerant, and kindness from the unkind; yet, strange, I am ungrateful to those teachers – Khalil Gibran (1883-1931)

Shashtiabda Purthi of Sri Samreddy Sudershan Reddy (Chairman, Mahaveer Educational Society) and Smt. Jaya Laxmi on 22.05.2013

Welcome to our new teachers

From left: K Ranjit Reddy, T Naresh, Vedavyas Gurla, G Ramesh, Dr. C K Rani, Y Madhurima, K Shirisha

Mrs. Y Madhurima rejoined us after being in the USA for one year. The new teachers were interviewed by our students, excerpts of which are given below.

Professor C K Rani, Vice Principal (interviewed by Shaheena Tanveer)

I served for 25 years at the Central Water and Power Research Station, Pune. It was set up in 1916 by the Bombay Presidency and taken over by the Government of India in 1936. CWPRS became the principal central agency to cater to the R&D needs of projects in the fields of water and energy resources development and water-borne transport. I had fully enjoyed working in that organization, but called it a day when my family conditions forced me to relocate here. My message: Instead of taking up a hundred jobs at one time, we must learn to queue up our tasks and complete one by one. This way we can ensure quality in the job done. We must aim high towards perfection, in whatever we choose to do or in whatever is assigned to us to be done. Punctuality has its importance as, for example, all invigilators should be in place for the examination to start at 10 am, but this alone is not enough. We must have an urge to perform, to achieve and to excel.

Mr. Vedavyas Gurla, Associate Professor CSE (interviewed by Ankita Arora IV CSE)

I am a B.E M.Tech, I have been teaching for the past 11 years. It is my view that education is not just teaching a subject, but motivating students towards achievements in all walks of life. I do not have too much faith in

regulatory authorities. If I had the power, I would make every college autonomous and allow it to develop without any form of constraints. After all there will be demand for quality education. My favourite person is Mahatma Gandhi. We must realize our mistakes and correct them with honesty, truth and non-violence. I read some articles of Kushwant Singh and R K Narayan. We have with us intelligent but silent students, intelligent and visible students and finally, intelligent and mischievous students. We must have concern for the well being of all our students, setting aside our preferences. For success, students need to have good character in addition to good marks and good communication skills. Students must chalk out a plan of their life and work as per the plan. Drifting where life takes has to be stopped and goal oriented movement should take over. Sir Mokshagundam Visvesvaraya once told of his experience. He was invited to give a lecture in a school. He was unprepared but he gave the lecture. But he was unhappy at not having done a good job. He then prepared well and delivered the lecture again at the school the next day. However talented one may be, planning and preparation is a must.

Mr. K Ranjith Reddy (interviewed by Rintu Joseph IV CSE)

The day I felt most happy was when I came to know that my Class X marks was 92.33%, though I secured a higher percentage in Intermediate. I have immense faith in my father's judgment. It was he who wanted me to become an engineer. I did B.Tech at MVSR Engineering College, Hyderabad and M.Tech at Moulana Azad National Institute of Technology, Bhopal. Of the four places of my education - school, junior college, B.Tech college and M.Tech college, I liked the last – the place was beautiful, the labs and workshops well furnished and the campus full of people from all over India. My folks encourage me to try for a government job, but the competition is so stiff. My message: We may not get the branch we want in B.Tech; we may not get the job we want, but if we are motivated, we can work wonders in whatever profession we happen to be. To be a teacher is certainly a rewarding experience; we learn as we teach and we come across a new batch of students every year with new talents and aspirations.

Mr. G Ramesh (interviewed by B Srilakshmi, IV CSE)

I cherish the moment when I came to know that I was third topper in my school in class X. I did my B.Tech from Srichaitanya and M.Tech from TKR. Of course, the security, status and benefits of a government job are so great that one would keep trying, I am fond of presentations and public speaking and teaching provides me ample opportunities. In look at my students as future architects of India. Learning through contemplation and self discovery are more fruitful than being spoon-fed. My hobbies include composing lyrics, singing and photo-editing. I like the peacocks moving around freely in the greenery of our college. I hope future buildings will not take away their habitat. My message: *Reduce, Reuse and Recycle*. I always carry my own cloth bag and refuse to accept plastic bags from vendors.

Ms. K Shirisha, Asst. Professor ECE (interviewed by Anu P Suresh, II ECE)

My sister gave me all my inspiration. She holds an M.Sc degree and well settled in a job. She is my friend, philosopher and guide. Sensing my bent of mind, she prevailed on me to take up engineering. I will be getting my M.Tech degree soon. I feel that our students should put in more effort in practicals as that would make them better engineers in practice. Among eminent persons, Mother Teresa and Abdul Kalam had a profound effect on my thinking by virtue of their servitude and simplicity. I like to associate with people with a friendly disposition coupled with a sense of humour. I dislike forcing or being forced to go against Will. The recent calamity in Kedarnath has moved me very much as several devotees lost their lives and other faced severe hardship while on pilgrimage. My favourite book is Geetanjali, the string of poems by Tagore. My favourite state is *God's Own Country* Kerala as it continues to be green.

Mr. T Naresh, Asst. Professor EEE (interviewed by Ch. Mounica, II ECE)

I hail from Karimnagar. I passed B.Tech from Mahaveer Institute of Science and Technology. Telugu and Chemistry were my favourite subjects in school and intermediate, as the teachers were able to explain very well. I have maintained the habit of learning one new English word every day. In B.Tech, my favourite teachers were Mr. Mandeswara Rao and Dr. Kamaraju who were always helpful and understanding. During my intermediate, I enjoyed travelling to my college and back. The travel gave me an opportunity to read and recollect. I have a very good friend who is sensitive and considerate. I like his way of thinking that was positive. Regarding the present generation of engineering students, some of them seem to be there because of pressure from parents or because of the availability of scholarship. I am striving to inspire a greater commitment from the average student. My own inspiration is from Swami Vivekananda, who said: "If you are born poor, it is not your problem. But if you die poor, it is your problem. Your destiny is in your hands."

The Interviewers

Anu P Suresh, Ch. Mounica (II ECE)

Ankita Arora, B Srilakshmi, Shaheena Tanveer, Rintu Joseph (IV CSE)

Dr. Mannepalli Lakshmikantam (b.1955) is the Director, Indian Institute of Chemical Technology, Hyderabad. She is the first woman heading any of the 37 laboratories in the Council of Scientific and Industrial Research in its seven decade old history. She has over 260 research papers and 43 US patents. 27 candidates obtained Ph.D under her guidance and 15 more are in the process. She has several scientific contributions including catalysts for chemical reactions. The Institute had its origin in 1944 as the Central Laboratories for Scientific & Industrial Research (CLSIR), established by the then Government of Hyderabad State. The institution came under CSIR in 1956 and expanded its activities. Major areas of research at IICT are: Natural Products Chemistry, Agrochemicals, Drugs & Intermediates, Specialty and Fine Chemicals, Fluor organics, Inorganic & Physical Chemistry (Catalysis & Material Science), Lipid Sciences & Technology, Coal, Gas & Energy.

The spirit of freedom - World's greatest democracies	
15.08.1947 India	*04.07.1776 USA*
 *from the world wide web*	 *my own art*

- Sent by Hiranmayi Palanki, Tampa, USA

Where The Mind Is Without Fear

Where the mind is without fear and the head is held high

Where knowledge is free

Where the world has not been broken up into fragments

by narrow domestic walls

Where words come out from the depth of truth

Where tireless striving stretches its arms towards perfection

Where the clear stream of reason has not lost its way

Into the dreary desert sand of dead habit

Where the mind is led forward by thee

Into ever-widening thought and action

Into that heaven of freedom, my Father, let my country awake.

Thy gifts

Thy gifts to us mortals fulfill all our needs and yet run back to thee undiminished.
The river has its everyday work to do and hastens through fields and hamlets; yet its incessant stream winds towards the washing of thy feet.
The flower sweetens the air with its perfume; yet its last service is to offer itself to thee.
Thy worship does not impoverish the world.
From the words of the poet men take what meanings please them; yet their last meaning points to thee.

- Rabindranath Tagore (1861-1941)

From Far and Near

Biotoilets in trains!

The conventional toilets in the trains allow night soil to fall on the track. This causes unhygienic conditions and corrosion to track and coach fittings endangering the safety. Maintaining the cleanliness at railway stations, especially the tracks at stations, is found to be a challenging task for railways in the face of ban on the use of Safaiwalas. Track maintenance staff also has to face difficult situation while on duty. But, with the advent of Bio-Toilet, Indian Railways has found an answer. With simple design, less maintenance and easier RETRO fitment on existing coaches, the environmental friendly Bio-Toilet will ensure zero discharge of night soil on the ground. The Bio-Toilet, which has six compartments, uses Inoculums (Bacteria) to decompose the night soil. The night soil from commode enters in to the Bio-Tank, where the inoculums are stored, get decomposed by the bacteria and the decomposed human soil will next enter into Chlorine Tank and to get purified. Finally the out put will be just water and gas.

Low cost vaccine from India!

Scientists in India have unveiled a new low-cost vaccine against a deadly virus that kills about half a million children around the world each year. Rotavirus causes dehydration and severe diarrhea and spreads through contaminated hands and surfaces and is rampant in Asia and Africa. The new vaccine, Rotavac, can save the lives of thousands of children annually. The vaccine would cost 54 rupees a dose. International pharmaceutical companies produce similar vaccines but each dose costs around 1,000 rupees. If licensed, Rotavac will be made by Hyderabad-based Bharat Biotech.

A cup of coffee please!

Caffeine is a bitter substance found in coffee, tea, soft drinks, chocolate and some medicines. It has many effects on the body, including helping to activate the central nervous system. America's National Institute of Health says drinking 3 ± 1 cups of coffee a day is not harmful for most people. The American Cancer Society found that people who drank about four cups of coffee a day reduced their risk of oral / pharyngeal cancer by 49% compared to those who had little or no coffee. Coffee could be a victim of rising temperatures in Earth's atmosphere. Few people have Type 2 diabetes in countries where people drink a lot of tea, especially black tea. Would you like a drink of coffee or tea?

Fighting drug resistant bacteria

Bacteria evolve much faster than larger animals and a good number have become multidrug resistant. No new antibiotics have been discovered in recent times. How then do we fight the infections? In the last issue of the newsletter, we talked about phage therapy - viruses being used to kill bacteria. There are three more approaches. Plasma, a form of ionized gas helps to heal chronic wounds by killing off multi-drug resistant bacteria and stimulating tissue growth. Researchers at the Max Planck Institute for Extraterrestrial Physics in Garching are developing new applications for plasmas while doctors at Munich's Schwabing Hospital are testing plasma therapies on patients. Meanwhile, US researchers found that Vitamin C can kill (lab cultured) drug resistant TB bacteria. Papaya, oranges, guava, pine apple and bell peppers, amla are excellent source of vitamin C. Do you know that the single cell organisms bacteria that keep multiplying communicate with each other? They have a quorum sensing capability, so when their number is large enough, they attack the host united. When there is no quorum, the bacteria would be annihilated by the immune system. One way the bacteria communicate is by secretion of a chemical. Another way is to sprout needles. Researchers at Princeton are trying to understand the 'bacteria speak' so that they can breakdown the communication between bacteria to make them ineffective.

Nature is the best guide!

X200 m tall offshore wind turbine will soon be installed in deep waters far from the coast. Their 50 m tall foundations have to be extremely stable, but light weight. Marine scientists from Bremerhaven have developed construction plans based on single celled plankton organisms. The results are delicate looking steel structures that save two thirds of the construction material compared to current models. In nanotechnology, scientists are imitating nature to make materials with properties unheard of or unthinkable before.

Googloon network!

Google + balloon → Googloon. Google is launching plastic balloons that provide internet connectivity to areas where net is not normally accessible. The network is not affected by disturbances in the weather and by natural disasters such as floods and earth quakes. While geostationary satellites have long been used for networking, they are expensive to launch and the available slots in space are getting exhausted.

Blue, yet no water!

A blue coloured planet has been detected 63 light-years away from the Earth. It orbits too close to its star and so has a temperature of over 1000 ℃. The winds blow at 7000 km/hr and the rain is made of molten glass showers. Using the Hubble space telescope, scientists are able to arrive at the colour from the changes in the light that occur when the planet disappears behind its star.

End of the solar road!

Voyager 1 was launched in 1977. The latest data from Voyager 1 suggests it is surfing right on the very edge of our solar system. The particles streaming away from our star have reduced to a trickle at its present location, 18.5 billion km from Earth. Particles flying towards it from interstellar space, by contrast, have jumped markedly in the past year. This would make Voyager the first man-made object to cross into the space between the stars.

Twist and boost!

A novel way of boosting data rates in optical communication using "twisted light" has been shown to work in optical fibres. Photons, the most basic units of light, carry two kinds of momentum. *Spin* angular momentum is better known as polarisation. But they also carry what is called *orbital* angular momentum. This is best explained in analogy to the Earth-Sun system: our planet spinning around its axis manifests spin angular momentum, while the orbital angular momentum is seen in our revolution around the Sun. "Twisted light" approaches use this orbital angular momentum, essentially encoding more data in varying degrees of twist. Dr. Siddarth Ramachandran of Boston University collaborated with a fibre company to produce a kind of fibres-within-fibres design. These novel fibres effectively provide different paths for different beam twists. The team demonstrated rates of 400 Gb/s using a single colour of light with four levels of twist, and 1.6Tb using 10 colours, each with two levels of twist. Newer types of fibres might find a place where you need terabits between servers for, say, a Google data centre.

- compiled by Dr. Palanki Balakrishna

If the rate of change inside is less than the rate of change outside, the end is in sight – Jack Welch (b. 1935)

Mahaveer Educational Society

Chairman: Sri. S. Sudershan Reddy garu, Secretary: Sri. S Surender Reddy garu.

AAR Mahaveer Engineering College

Vyasapuri, Bandlaguda, Keshavgiri PO., Hyderabad 500005.

EAMCET Code: AARW, JNTUH Code: 8P

Phone: (91) (40) 65810046, 9866934343, 8978380686 www.anjamma.ac.in

Principal and Newsletter Editor: Dr. Palanki Balakrishna, principal.8p@gmail.com

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