



Chairman's Message



Dear Members

I have cast my vote on August 1st in the IEEE Annual Election to elect our representative and leaders for the next one year. This year we are electing the Region 10 Director-Elect in addition to IEEE President-Elect. The Region 10 Director Elect candidates are Jose (Joe) B. Cruz Jr. (Philippines Section), Toshio Fukuda (Japan Council) and Ramakrishna Kappagantu (India Council).

You can access your ballot through the IEEE Elections web site (www.ieee.org/elections) or directly at <https://www.directvote.net/ieee/>. Alternatively, you can vote using the printed ballot you will receive in early August, I have received mine today (5th August).

Last year, only 14.6% of the Region 10 members voted, which was lower than the world average. 15.3%. The high voting rate makes it easy to pass our regional beneficial proposals in IEEE. The Region will offer bonuses again in 2010, namely \$500, \$300 and \$200 to Sections with the highest voting percentage.

I request all the Higher Grade Members and the Graduate Student Members to exercise their vote and elect the most eligible candidate.

A number of activities are coming up in the second half of the year. The preparations for INDICON 2010 under the aegis of Calcutta Section and All India Student Congress under Mumbai Section are in full swing. I request members to participate and derive benefits out of them. Best wishes to both the teams.

XII IEEE International Vacuum Electronics Conference IVEC-2011 will be held during 21-24 February 2011 at Bangalore organized by the IEEE Electron Devices Society, IEEE Bangalore Section and Vacuum Electronics Devices and Applications Society (VEDAS), Bangalore. This is a rare opportunity for researchers, academics, and students to come together and meet experts in this area from abroad and within the country. More details can be seen at website - <http://ewh.ieee.org/conf/ivec/2011>.

IEEE Presidents' Change the World Competition 10 finalists and their work can be seen at <http://www.ieeechangetheworld.org/submission/finalists.html>. There are three finalists from India among the 10 finalists. Mr. Gurpreet Singh Walia, Thapar University, Patiala, Punjab-Design & Fabrication of 3 Blade Vertical Axis Wind Turbine and Mr. Shantanu Pal, University of Calcutta, West Bengal-Digital agriculture and precision farming, modernized methods to improve an ancient lifestyle for the betterment of mankind and the land he inhabits, and Karthikeyan Ramasamy (lead); and Japaprakash, BANNARI AMMAN INSTITUTE OF TECHNOLOGY, AFFILIATED TO ANNA UNIVERSITY, Chennai-HIGH SPEED BIO-GAS ENGINE GENERATOR SET FOR RURALAREAS. Congratulations to all of them for participating and reaching the top ten finalist.

IEEE Sections congress will be held in August 19-20, 2011 at San Francisco, CA, USA exactly one year from now. As members, it is an opportunity for all of us to convey to the IEEE what are our priorities, vision and goals. Our members should convey to the section chairs what is the pulse of students, academicians, professionals and industry in the country who in turn should carry it to Section Congress as our recommendations. I request all the members and volunteers to give sufficient thought to our priorities and requirements and prepare a IEEE India document which can be conveyed to Section Congress and IEEE HQ.

With warm regards
Kasi Rajgopal
kasi.rajgopal@ieee.org

Message from India Council Secretary



Dear IEEE Members,

IEEE India is keeping its commitment of organizing several member beneficial events through out the country. Almost all Sections are actively organizing various IEEE activities through out the year. India Council is putting all efforts to spread messages regarding these happenings to all its members. I wish and hope that the information shared about these Sections' events (whose communication is otherwise limited to Section level) is being utilized to a broader extent by all the members in order to encourage good participation and successful completion.

Information regarding the completion of various activities from the Sections, Society Chapters, Council Society Chapters is also required to be filed with HQ through L31 (on line reporting) in IEEE website. All the concerned Treasurers are also required to file the L50 financial reports at the end of each calendar year. Such good practices not only bring awareness about the various activities happening in India to IEEE Headquarters, but also timely reporting will fetch us good financial benefits. In view of this, I request all the concerned volunteers to respond positively on this issue under the guidance of the respective Chairs.

We are all aware that IEEE is bringing Industry and Academia together to build the right technology for the benefit of humanity. University of Hyderabad has been selected as the recipient of 2010 supporting friend IEEE Member and Geographic Activities Award. Hearty congratulations to University of Hyderabad for the excellent support and contributions to IEEE. On the other side with rich experience in IEEE, our past Chair of India Council Dr.A.K.Agarwal has been appointed as first Vice Chancellor of Gujarat Technical University (GTU), Ahmedabad, India. Hearty congratulations to Dr.A.K.Agarwal as well for this great elevation.

Friends, I am sure that many more such achievements in IEEE will happen in years to come. I only request all the members to strengthen IEEE India through active participation with high membership growth and good volunteer contribution.

With best wishes,

Yours Sincerely,
(Ramakrishna Kappagantu)
Secretary, IEEE India Council
Email: kramakrishna@ieee.org

IEEE Presidents' Change the World Competition Finalists from India

Design & Fabrication of 3 Blade Vertical Axis Wind Turbine

Thapar University, Patiala, Punjab

Team Members : Gurpreet Singh Walia

Major problem with Wind Turbines lie with the available wind speeds in a particular region. Low wind speed areas are not left with choices except solar panels which are quite expensive.

Another problem is yaw mechanisms which are needed to align conventional wind turbines with wind flow to tap maximum energy. So I've developed wind turbine which is capable of tapping low wind speeds, doesn't need any yaw mechanisms plus lot many other technical advantages mentioned in the solution part.

Digital agriculture and precision farming, modernized methods to improve an ancient lifestyle for the betterment of mankind and the land he inhabits.

University of Calcutta, India

Team Members : Shantanu Pal

Precision farming is an integrated agricultural management system incorporating several technologies which collect data, such as nitrogen, phosphorus, insect counts, and disease presence at precise locations in fields to optimize inputs, reduce waste, and generate higher yields. The technology often involves the use of GPS and remote sensing for data collection, GIS for data processing and analysis, and variable rate technology for implementing ideal models. In other words it is "Digital Agriculture" involving large scale farm level mapping, comprehensive data base creation on required resources generated through space based inputs and field observations as well as making a detailed plan for maximizing yield and reducing costs on inputs using the decision support system. The concept of precision farming is increasing in developed countries due to large farm holdings and fully mechanized agricultural operations. With the present technological developments and availability of higher resolution multi spectral sensor data, there is scope for adopting precision farming for cultivation of high value, commercial produce and flowers, etc., in developing countries including India. The "site-specific" information entered into the computer becomes a "spatial map". Using this map, farmers, growers, and researchers can draw links between soil characteristics, fertilizer application, plant health, and yield. Accurate spatial maps provide guidance for precise 'variable rate' application of pesticides and other agricultural chemicals. This decreases the amount of chemical inputs used. High resolution Digital Elevation Models (DEM) also forms a component of the database, which provides the appropriate description of the topography .

High Speed Bio-Gas Engine Generator Set For Rural Areas Bannari Amman Institute Of Technology, Affiliated To Anna University

Team Members : Karthikeyan Ramasamy (lead); Japaprakash

In remote rural areas where the electricity board cannot give electricity due to high transmission cost. But there are lot of decomposable solid and liquid wastes available that can be decomposed into Bio-gas that contain about 50-75% of Methane (depending on the type of waste). Methane has high heating value of 44-50Mj/Kg and it has a high Octane number of 107. Now it is used only for cooking and producing steam in boilers. This can be used as a fuel for IC engines but when it is used at atmospheric pressure the power generated is low and the speed of the engine is low. When the Bio-gas is compressed and ignited in an IC engine the output power is equal to a petrol engine.

But a separate compressor is not available in rural areas where electricity is not available and also it makes the system costly. When a latest IC engine is started in petrol the normal piston speed (without any acceleration) is about 2500-3000 rpm. When an axial flow compressor is connected to the crank shaft and rotates at this high speed it will compress the bio-gas to about 1.7-1.85 bar. Then the petrol can be turned OFF and Bio-gas is turned ON then the Bio-gas is ignited by spark plug and power is generated. Then a part of the power is used by the compressor to compress the Bio-gas and the rest is used by the generator to generate electricity.

When Bio-gas is combusted the emission contains only carbon-di-oxide and water in vapour form. The carbonmonoxide is eliminated about 90%. Thus the emission is pollution free and ecofriendly. The remaining products after decomposition is rich in nitrogen contents which can be used as a fertilizers for agriculture. The organic decomposable waste is available throughout the year.

An 100cc IC engine can able to produce 3bhp(2.2Kw) of power while running at a speed of 3000rpm.

That's IT in July 2010

Prof. S. Sadagopan



In the general developments,

- ♦ Spain wins the World Cup on July 11, 2010
- ♦ China overtakes Japan to become the world's No 2 economy next only to USA
- ♦ Indian Rupee INR gets a new symbol (and set to join the league dominated by Pound (UK), Dollar (USA), Euro (EU), Yen (Japan) and Yuan (China))
- ♦ Bengal train accident on July 19, 2010

In the products arena,

- ♦ Amazon launches Kindle 3 e-book reader \$ 139 on July 28, 2010; Borders (the second largest US book store) launched E-Bookstore on July 7, 2010
- ♦ HP launches B 110e web-connected printer (every printer gets an email address and users can print from anywhere by sending email to the printer) on July 28, 2010
- ♦ Solar-powered rickshaw Solecshaw was launched by Minister Sachin Pilot in Delhi on July 9, 2010 to help Postmen in India

In the market-place,

- ♦ NSN (Nokia Siemens Networks) buys Motorola Networks business for \$ 1.2 billion on July 18, 2010
- ♦ Dell buys data center software company Scalent for \$ 32 million in early July 2010
- ♦ Google is planning to buy travel software company ITA Software Inc for \$ 700 million
- ♦ Global IT majors Apple, Intel, IBM and Indian IT majors TCS, Infosys, Wipro, Cognizant post great results for the April - June 2010 quarter

The Indian IT Companies continued to do well

- ♦ Infosys turned 30 on July 2, 2010; networking gear manufacturer MROTek completes 25 years on July 30, 2010
- ♦ TCS to hire 30,000 in 2010-11 and starts operations in Peru, South America
- ♦ Chennai-based Banking software major Polaris starts Bangalore operations
- ♦ Online travel services start-up MakeMyTrip applies for NASDAQ listing on July 27, 2010 and plans to raise \$ 100 million thru IPO

MNC Companies in India continue to grow their India operations

- ♦ European IT services major CapGemini hires 10,000 in India in 2010 and talks of hiring 7,000 more in the year!
- ♦ UK-based XChanging announces its plans to start 2,000-seat rural BPO Shimoga in Karnataka, in the presence of British Prime Minister David Cameron on July 26, 2010
- ♦ As per Zinnov Consulting, R & D Centers in India have saved \$ 40 billion over the past 3 years for the global corporations

In telecom

- ♦ Telecom majors are finalizing their strategies to roll out 3G and Wireless Broadband (for which licenses will be issued in September)

In the Education & Research front

- ♦ Super computer "Annapurna" from DAE (Department of Atomic Energy) got launched on July 28, 2010

In the people front

- ♦ UK Prime Minister David Cameron visits India during July 28-30, 2010; starts his visit from Bangalore; interestingly, this was his first State visit after taking charge as Prime Minister
- ♦ India-born entrepreneur (founder of Sycamore Networks & Tejas Networks) Desh Deshpande to co-chair President Obama's National Advisory Council on innovation
- ♦ S Y Qureshi is the country's Chief Election Commissioner from July 28, 2010
- ♦ India-born Prof Sunil Kumar to take charge as the Dean of Chicago Business School in January 2011

On the applications front

- ♦ Canara Bank completes CBS (Core banking) across all the 3,000+ branches (it is the last of the large public sector bank to do so) in July 2010

On the infrastructure front

- ♦ Delhi Airport terminal T3 was inaugurated on July 3, 2010 (one of the largest terminals in the world with 34 million passengers capacity)
- ♦ A380 jumbo jet lands in Delhi airport on July 15, 2010
- ♦ Ahmedabad airport got a new terminal on July 3, 2010

Some interesting numbers

- ♦ India's Forex reserves on July 31, 2010 stood at \$ 283 billion; Sensex (Bombay Stock Exchange index) rose to 17,868 by July end; 17.98 million mobile subscribers were added to the Indian telecom network in June 2010 (TRAI Press Release of July 23, 2010)
- ♦ Facebook customer base crosses 500 million
- ♦ BSNL suffers the first ever loss of Rs 1,823 crores in April - June 2010

2011 IEEE Students' Technology Symposium (IEEE TechSym 2011)

14 – 16 January 2011

Conference Location: Indian Institute of Technology Kharagpur, Kharagpur, India

Conference Reg. # 18009

Sponsored by: IEEE Kharagpur Section, IEEE Student Branch at IIT Kharagpur, IEEE Engineering in Medicine and Biology Society, IEEE Education Society Student Activities Committee, IEEE Women in Engineering Affinity, IEEE Computer Society, IEEE Signal Processing Society, IEEE Control Systems Society

Full Paper Submission Deadline: 14 September 2010

Tutorials and Workshop Proposal Submission: 14 September 2010

Acceptance Notification: 7 November 2010

Early Registration: 21 November 2010

Camera Ready Submission: 7 December 2010

<http://www.techsym.in>

Theme of IEEE TechSym 2011 is “Advancing Technology for Humanity” The second version of the event includes technical tracks on Communication Systems; Image and Multidimensional Signal Processing; Micro Electro-Mechanical Systems, Electron Devices and Sensors; Pattern Analysis and Machine Intelligence; Power and Control Systems; VLSI Design and Automation; Web, Multimedia, Computers and Embedded Systems. Awards categories broadly include Engineering in Medicine and Biology; Women in Engineering; Human Computer Interaction; Technology in Education. The bouquet also includes exciting learning opportunities from some of the technological giants. Be here as part of the symposium to know about your peers in technological advancement, and learn the trade from veterans.

A remote triggered laboratory at IIT Bombay

Kannan M. Moudgalya

kannan@iitb.ac.in, 19 August 2010



The National Mission on Education through ICT (<http://spoken-tutorial.org/NMEICT-Intro>) was launched one year ago by the Ministry of Human Resource Development to improve college education in India. Virtual Labs (<http://vlab.co.in>) is a national level project supported by this Mission. Prof. Surendra Prasad, Director of IIT Delhi, and Prof. Ranjan Bose of the Dept. of Electrical Engineering, at IIT Delhi, are the coordinators of this project, in which, about 25 institutions from different parts of the country are participating. IIT Bombay is one of the partner institutions of this Virtual Labs project. The coordinators for this project at IIT Bombay are Prof. Anil Kulkarni of Electrical Engineering and Prof. Santosh Noronha of Chemical Engineering

This article is devoted to one of the remote triggered virtual labs, called the single board heater system (SBHS). SBHS consists of a plant, whose temperature can be controlled by manipulating a heater current and a fan speed. The plant is a blade of size 5cm x 2cm. The temperature is sensed by AD590. ATmega16L microcontroller is used to implement the control circuit and to read the temperature. The unit uses a computer SMPS that works on 110/220V. It has a serial port and an USB port for external communication. A picture of this device is shown in Fig. 1.

The bill of material for this device is Rs. 1,500. The design has been re-leased as open source. It is available from Nex Robotics (<http://nex-robotics.com>) at a cost of about Rs. 2,500. We are on the lookout for other vendors who can also supply this item. All the experiments that are required for a first control lab course can be done using this device. We have carried out experiments, such as step, ramp and sine responses, P, PI and PID controller tuning, auto tune, gain scheduling, pole

placement, internal model, model predictive and adaptive controllers. In fact, the efficacy of any new control algorithm can also be examined using this device. This device is also amenable to advanced level topics, such as PRBS and closed loop identification. This lab in a box is useful also for students of instrumentation, embedded systems and real time control.

The SBHS can be made to work with Scilab, Python, LabView and Matlab. At IIT Bombay, we provide Scilab support for SBHS through http://co-learn.in/web_sbhs and <http://fossee.in/moodle>.



Figure 1: Single Board Heater System

Anyone, anywhere in the world, can access this device remotely through Internet and to carry out remote experimentation. The procedure for this is available at the first website (web sbhs). This involves booking a one hour slot ahead of time and carrying out the experiment at the designated time.

In the second website mentioned above (moodle), we have a forum for discussions on this laboratory. In this site, we also have the latest information and the manuals required to study this device.

We invite all enthusiasts to try out this remote triggered virtual laboratory. We will be glad to provide all required help so that you can consider including this lab as a part of your curriculum.

Prof. Kannan M. Moudgalya received a B.Tech degree in chemical engineering from IIT Madras, a Master of Electrical Engineering from Rice University and a Ph.D (Chemical Engineering) degree, also from Rice University. He has been a professor at IIT Bombay for 22 years. He spent one year at the University of Alberta as a visiting professor.

Prof. Moudgalya works in the areas of control, simulation, mathematical modelling and education technologies. He has a large number of publications in international journals and conferences. He has written two books: (1) Optimization: theory and practice, with Prof. M. C. Joshi, published by Narosa (2) Digital Control, published by John Wiley & Sons. Prof. Moudgalya held the posts of Associate Dean (R&D), Head of Office Automation and Head of Distance Education, at IIT Bombay. He is currently a Member of the Standing Committee of the National Mission on Education through ICT. He contributes to this Mission through projects in the areas of spoken tutorials (<http://spoken-tutorial.org>), open source software (<http://scilab.in>) and talk to a teacher (<http://co-learn.in>).

Impact of Engineering on Indian Society: A Grandma's version

Long Live Grandma

P.G. Poonacha

"I have to write an essay on impact of engineering on society. Please help me with this essay Grandma." pleaded 14 year old Ram with his 100 year old grand mother. While Ram's mother used to scold him for making such requests, Grandma used to wait for such requests. She enjoyed such requests and was ready to help any one. She was quite up to date with TV discovery channels and internet, now available at the village where she lived with her son and daughter-in-law, who looked after her well. She was a popular high school teacher and had great interest in science and technology and kept up that interest through all channels available. For interested villagers she was the best technology entertainer in the evenings. Ram was very proud of her for his school life was more fun with lot of profit because of her. He was the favorite student of his mathematics teacher for solving all the math homework problems! Physics teacher was proud of him for knowing so much in Physics!! Everyday during evening prayer his first demand to God was to give good health to Grandma.

Air Conditioned Earth

"So listen to me," started his Grandma. "Our Mohan's story will give you a fair idea of the impact of engineering on society. I will not be surprised if people like him soon build Earth climate conditioning system with a network of satellites around the globe for monitoring and control purposes."

"So our earth will be air conditioned! Who is Mohan Grandma? Did he benefit a lot from engineering and technology? Is Earth climate conditioning possible like air conditioning of a room?" Ram asked with very little hopes of completing the essay. Wondered why Grandma is telling him a story instead of dictating the essay right away. "Will I complete the essay today Grandma?"

"You will be able to write a nice essay after this story. Don't worry" said Grandma.

Why Bright People End Up in US?

She continued. "Our Mohan studied in the same school where you are studying. He was the brightest boy in the school during his time and now he is one of the best brains in technology in the world. He is working in US. Don't know why you don't like engineering. I have told you about his contributions to internet, digital TV etc... As usual your memory is very weak or just enough to pass the exams!"

"Oh. Sorry Grandma. I remember now. Are you giving him as an example of how engineering motivates people to study well and reach US and contribute to the growth of the US society?" Ram was getting mischievous.

"No. Unlike other countries, which depend mostly on its own human resources to shape the nation, US has managed to invest heavily in the past to create the best infrastructure for creative people to come together and innovate for helping US to lead the world. India on the other hand has never thought seriously about such investments due to various reasons. In our country we have not been able to do consciously and seriously anything to drive technology growth and benefit from it. We buy technology whenever we need by paying a huge price. Don't you see those main page articles on submarine and airplane deals? Have you not seen Volvo buses by which we can go to Bangalore?"

"What is your problem Grandma? Government has enough money and they want to buy to serve and protect our people. By running Volvo buses and airplanes we make good money. Why waste time on doing research and developing technology?" Ram did not want to give up.

What is Impact?

"We will talk about it another day. Now let us focus on the topic of your interest. One day Mohan got up in a hurry to attend to a mobile call at 3am in the morning. Call was from his sister from India. He could see her sad and frustrated face on the video phone.

She wanted Mohan to talk to her son and advise him to study hard than spend time on the internet or in front of a TV. According to her, her son had become an internet addict as well as a TV addict. He was not interested in school at all. Mohan could not sleep. It was too late.

Mohan's sister was married to a rich businessman in Bangalore and they lived in a posh house with best facilities and

every possible latest gadget in the house. Money was not a problem at all. Both his sister and her husband were busy earning money to support such a lavish lifestyle and to keep up with their friends in society by being the first to buy the latest cars and other gadgets in the market. Their house was like a 5 star hotel managed by many servants round the clock. “

“I want to live in a house like that Grandma. Why did not you build one or tell your son to build one?”

Small is Beautiful

“I did everything possible to convince my son about engineering and used to force him to go and find a good job in Bangalore or abroad. But he always wanted to manage our fields and look after me well when I get old. He does not think chasing money will bring happiness. His wife also thinks engineering has done more damage to society than helping people live a better life. So they both listen to my science stories as though they are watching an interesting movie and leave it at that. Mohan was quite different.

Mohan was the one of the two children of his parents who lived in a small house in the village with his grandparents. In the house there was a small hall where in one corner a radio set was kept and another corner was a prayer corner. A study table and a chair occupied another corner. Remaining corner was empty for people to sit and talk. There was a small room for the grandparents, one room for his parents and him and his sister and a kitchen and a common toilet plus bathroom. His father was a teacher in the school and he had a small piece of land for growing vegetables. Before going to school Mohan used to water the plants and help his father carry the vegetable bags to the market.

Mohan’s father used to entertain the family in the evenings with his flute. Mohan also learnt playing on the flute from his father. According to Mohan those were the happiest days of his life. Come back from school, eat nice food prepared by mother, argue with father on all aspects of life and get good support from grandparents when parents get angry.

Though there was limited income there was no shortage of food or happiness. They were content with what they could earn and focused on living happily without even thinking of cheating or exploiting others for their advantage. Even workers loved working in their house for they were treated with respect and concern. It was a great house to live for he always felt very happy to go home.

Is Science or Engineering Addictive?

He used to visit our place and I used to tell him many interesting things about science and technology to which I was a sort of addicted. But he became a bigger addict and used to ask very difficult questions. In fact I used to study more about science, technology so that I could have good conversation with him. He was a great fan of science and its ability to provide rational explanations for so many doubts he had in his mind. He used to tell me that he wanted to do very well in engineering and help the school and people in the village when he grows up. I feel very proud of him and his achievements Mohan as well as his sister studied well and Mohan went on to study engineering and his sister chose medicine. There was no pressure on their parents as they secured scholarships and money for study was never an issue. Due to unknown laws of gravitation Mohan ended up in America and was a very successful engineer who contributed to the development of internet and many other projects which were supposed to help “mankind do more by doing less”. His parents as well the whole village was very proud of their son and his achievements which they never understood well. They saw him only on the TV giving a lecture about technologies for the future.

Mohan married Shanthi of our village. Shanthi was brainwashed by me to marry Mohan. I used to tell her about Mohan and all the great things he used to do as a student and all the greater things he was doing in US. Mohan’s marriage was a great celebration time for the entire village. Everyone came to bless Mohan and Shanthi. After marriage they left for US. Shanthi also managed to find a good but very hectic job there. His sister had a son. Mohan could not get any children. People attributed it to various things including work pressure and stress. So, all their attention was on his sister’s son. He was given the best of everything in technology as money was not a problem. He could call Mohan anytime on his Blackberry mobile phone.”

Impact on Family

“Wish I also could have one blackberry mobile phone Grandma! Will you tell my parents? I also need an iPod. Many

of my friends have it.” Ram was begging. “You will get all of them Ram. Do you know how Blackberry phone attracted its customers? They said it will help you remain close to your dear ones and still attend to office from home! In reality you end up working for your company 24 hours a day if you are serious about work, promotion and perks. In fact this gadget and many such gadgets have helped in moving people away from each other more and more.”

“What do you mean? I thought it helps to bring people together again. They can stay back with their family and check their emails from home right? Don’t you think it helps bring families together?” Ram did not agree.

“No. As you know industrial revolution pulled people from villages and joint family homes to industrial establishments and started the culture of small nuclear families. Now Blackberry or mobile phones are trying to create a culture of atomic families with very weak bonds. If you are worried about your work 24 hours when will you get time to talk to your wife or your parents? We will always be tuning to email alerts or sms alerts even when we are sleeping!! Since your manager sends emails at odd hours you also do the same to show him that you also work. It is easy to understand how people will behave! So in the name of connecting people Nokia and other companies are disconnecting people more and more. Do you agree?”

“No Grandma. What is wrong in that? I thought mobile phones are a good way to stay connected as Nokia says.” Ram did not want to give up. “True Ram, it is good for business, not for people or society. Do you like the idea of having dinner while your mother is on the phone talking to a customer? Think about it.”

Impact on Parents

“After leaving home, neither Mohan nor his sister could take care of their parents due to work pressures and other reasons. Work was always more important to them and their organizations. Some villagers wrote letters requesting them to help at least financially.

They did not send any money as they thought it will be misused by the villagers as their parents were quite old. With help from villagers their parents lived a happy life. In the village there are always people who are willing to help each other and such mutual help binds the village and makes happy living possible.

In order to live a happy life you need time to help others as well as yourself. We need time to spend with other people. We need time to think about life.

So what is going wrong?

Are there better ways to educate people like Mohan? Why business becomes the only important task in our life till we die or we are forced to die. Having tasted the advantage of exploiting natural resources; living and nonliving, for agriculture, transportation, medicine and entertainment humans are exploiting humans more and more to meet their business needs. Exploitation is the key mantra of our society. If one does not know how to exploit the human society and rest of the nature they do not have a right to live. We have reached a state where we even exploit ourselves to make more money!

Any Ways Out

Let us think about this madness and its impact and see if there are ways out of this mess or the World Wide Web that we are creating for doing business at the speed of light while fooling ourselves that we are doing this to increase our happiness. Looks like, there is no way out. It is very strange that humans are in a race to destroy their own happiness with a breakneck speed.

Do I sound too harsh Ram? It is very easy to criticize all the good work people are doing and feel great.”

Purpose of Life

“I can understand Grandma. You have told me this before also. All this is because you don’t know why we are born and what we are supposed to do. We are forced to follow some lifestyle based on where we take birth and on the education we can get from teachers like you who don’t know much! If you knew God’s email address we could ask and know what to do and what we should not do. What do you think Grandma? Many of my teachers say that we should have an aim in life and bigger the aim it is better. How did you handle such questions Grandma? You have told

me that saints like Veda Vyasa, Shankara and Buddha knew more about life and its purpose.” Ram sounded very sympathetic.

“Don’t know. I don’t have good answers to your questions. I don’t know of any Math or Physics to understand them. I can only understand Pythagoras theorem or Fermat’s Last theorem and simple things like that. I also know that they are useful tools to keep us busy, challenged and confused. Hope we will discover better tools to find purpose of life some day much before it is too late. Fortunately, we know quite a lot about how to live a good life at least in theory. That is by controlling our senses as best as possible so as to live a life with minimum exploitation of the nature and other living beings. Animals and plants may be fortunate for they have inbuilt control systems in place by which this is achieved. It is interesting that we are given the power to control our senses and also allowed to think. I am sure there is some purpose or intention behind this design. We still don’t know. May be we are still evolving.

Indian Approach

Most of the Indian philosophers tried to understand purpose of life and came up with tools and techniques to live a good and happy life by taking good control of our body and mind while exploiting the natural resources minimally for living a better life. This was perhaps made possible by treating earth, water, wind and fire as gods and finding out techniques for living a better life by worshipping them. Different forms of worshipping were developed to change the mood of the gods. As usual there are plenty of methods for worshipping depending on the philosopher and their beliefs. Don’t know how this worship and control culture dominated over other techniques such as investigate and learn and control which became widely popular in the western world.

Western Approach

In the western world philosophers investigated the nature of earth, water, wind and fire as well as living and non-living things and discovered many laws which were useful in explaining natural events. These curiosities lead them to engineering and its enormous potential which eventually lead to industrial revolution and confidence to control the world and exploit the nature more and more.

Real Impact

Anyone who discovers these laws or has machines built using such laws will feel more powerful. Such people would like to have a better lifestyle, control lives of others and amass wealth using their new knowledge. Moreover, in order to stay ahead of others they would like to earn and invest more and more. This leads to ever increasing economic activity and human beings become just the natural resources. Everything we do will be dictated by the profits to be made than anything else.

This type of economic activity driven research culture dominated by industry and management theories will lead to exploitation of all living and nonliving resources. Time has become a scarcity today for everyone. Universities and research labs today don’t have the right freedom to think freely and develop robust solutions for helping mankind live a real better and happy life with minimum exploitation of nature.

Due to pressure, researchers and developers today try their half baked ideas on society as early as possible. So we are always getting pushed with new gadgets, medicines, unmanageable buildings, faster vehicles and roads which we can never cross and so on.

This way we are creating a stressed, confused and very fragile society with very poor and weak relationships. Everyone is worried more and more about themselves and society is just a concept with no real use.

In this industry centric world order humans are the next vanishing species after trees, animals and other natural resources. Everything is done to make this industry more and more efficient with better cars, better aero planes, better trains, buses, roads and mobile phones. Do you see how human centric society has become an industry centric society?

What next? Are we really searching for happiness or purpose of life? Who knows? May be this is the only way.

Investigate, learn and control is a world culture today. This may be enough to explore the material world. Will it change to worship and control when we start working on understanding mind and its connection to external world is a good question to ask. We today know that rational explanation is very difficult to give for every question we ask.

Therefore, for a complete picture we may have to depend both on rational, irrational as well as imaginary (complex) explanations. Would God emerge again as a result of such investigations?"

"Thanks Grandma. You said too much just now for me to remember or digest. I am only fourteen year old Grandma!! I will now go and write a nice essay. I am sure my teacher will love it. Love you Grandma. Good night. One last question! What can be done to correct the system?"

"Tomorrow we will talk about it. God bless you."

This Article is Contributed by Mr. P.G. Poonacha

Mr Poonacha is with Epigon Media Technologies (www.epigon.in). He is having B.Tech from NITK and M.Tech and Ph. D. in EE from IIT Kanpur. He Worked as a faculty member in EE Dept IIT Bombay from 1986 to 1996. After that he worked with Sasken and TI, before taking up present assignment.

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Tutorial on Adaptive Control & Industrial Applications

The IEEE PES / IAS / PELS Hyderabad chapter is organising a tutorial on "Optimised Adaptive Control for industrial applications" on 21 Sept 2010 at Hyderabad. The instructor is Dr Juan Sanchez, FIEEE, IEEE Distinguished Lecturer from Spain.

This tutorial will discuss real life Industrial Control problems and to present a new advanced control technology, *ADaptive Predictive EXpert (ADEX)*, that overcomes the limitations of conventional control systems currently used in industry. It is very useful to industry professionals working on optimising industrial process control.. For details contact T R

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