


IEEE SB MESCE

NEWSLETTER

MES College of Engineering, Kuttippuram

Introduction to IEEE

Dr. Anzar S. M. (Associate Professor AEI & IEEE SB Counselor) IEEE#92907988


*"Bestow on the youth my warmth of feeling,
My unbound love and my vision.
My only prayer to you my Lord, is that
The Light of my vision be diffused amongst all"*

Dr. Sir. Muhammad Iqbal

IEEE, pronounced "Eye-triple-E," stands for the Institute of Electrical and Electronics Engineers. IEEE is the world's largest professional society dedicated to advancing technology, for the benefit of humanity. IEEE was formed in 1963 from the amalgamation of the American Institute of Electrical Engineers. Today, IEEE is the largest professional society in the world, with more than 4 million members, and student branches in nearly seven thousand colleges and universities all over the world. The IEEE

MESSAGES



I am very happy to know that IEEE student chapter at MES College of Engineering, Kuttippuram is bringing out a Newsletter in Feb. 2015. Let me congratulate all the members of the chapter for taking up such a commendable initiative. I am sure all the students will make use of this opportunity to contribute technical articles as well as other interesting essays they wish to share with the academic community. This could be a stepping stone to excel in your profession by making original contributions to science and technology. I wish you all success in all your efforts.

Prof. (Dr.) K P Mohammed

Director, MESCE



I congratulate the IEEE SB team of MESCE for their initiative to publish a newsletter. I see this as a part of our rejuvenated efforts for becoming the front runner of SB activities in Kerala section. Being an IEEE member gives us a feel of being a part of a global community and it open new avenues of professional life before its members.

Along with doing things making it visible is also important in the emerging world. I think this kind of a newsletter will serve that purpose. I hope that this new venture will act as a forum for the dissemination of ideas and wish it all the success

Prof. (Dr.) Mohamed Bedeuzzaman

*Vice Principal, MESCE, IEEE#91243493
IEEE Malabar Section Exe-com Member*



IEEE stands for quality and its mission is fostering technical innovation and excellence for the benefit of humanity. I wish all success to the endeavours of the IEEE.

Prof. (Dr.) V H Abdul Salam

Principal, MESCE

On behalf of the Editorial Board, IEEE SB, MES College of Engineering, Kuttippuram, may I wish you and your family very good fortune and health in this New year. I would like to take this great opportunity to thank all the editorial members and contributors for their unfailing support to this first edition of the Newsletter from IEEE SB. The aim of this is to serve as a platform for students to share their knowledge and thoughts in science and technology so that new fellows are encouraged to apply for IEEE membership. We are so pleased to receive the warm and encouraging messages from our respected Principal, Director and Heads of various departments for the release of our first issue of the newsletter. I think in this kind of a literary work, you are welcome any time and there is no 'too late'. We look forward in this technical event to share and to learn the most updated ideas and knowledge of technical fields. Further comments and submissions are always welcome.



Mrs. Sabira C

*Chief Editor, Newsletter 2015
M.Tech. EEE IEEE#93276045*

Board of Directors is the governing body of IEEE and is responsible for all assets of IEEE.

Mission Statement: IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity.

Vision Statement: IEEE will be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions. Its objectives are the educational and technical advancement of electrical and electronic engineering, telecommunications, computer engineering and allied disciplines.

❖ In pursuing these goals, the IEEE serves as a major publisher of highly cited scientific journals and organizer of conferences, workshops, and symposia.

❖ It is also a leading standards development organization for the development of industrial standards in a broad range of disciplines

including electrical, electronics, computers, and information sciences.

❖ Moreover, IEEE and its members inspire the global community through its professional and educational activities.

IEEE Quick Facts: IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities.

IEEE has:

- More than 430,000 members in 160 countries;
- More than 120,000 Student members;
- 333 sections in ten geographic regions worldwide;
- 2,231 chapters that unite local members with similar technical interests;
- 2,516 student branches in 80 countries;
- 790 student branch chapters of IEEE technical societies;
- 432 affinity groups –Young Professionals

(YP), Women in Engineering (WIE), and Life Members (LM).

- 38 Societies and ten technical Councils;
- More than 3.5 million documents in the IEEE Xplore Digital Library, with more than 8 million downloads each month;
- More than 1,500 standards and projects under development;
- Publishes approximately 170 transactions, journals, and magazines;
- Sponsors more than 1,300 conferences in 92 countries while;
- ❖ partnering with more than 1,000 non-IEEE entities globally;
- ❖ attracting more than 419,000 conference attendees;
- ❖ publishing more than 1,200 conference proceedings via IEEE Xplore.

Organizational Structure: IEEE has a dual complementary regional and technical structure – with organizational units based on geography and technical focus.

MESSAGES



"The secret to creativity knows how to hide your sources"-Albert Einstein

Although we hail from varied backgrounds, being creative we all seem to have one thing in common; We love what we are doing. Being professionals, we don't have to be a special kind of person to be creative. It is not about who we are, it is about what we do.

We can edit the script of our life for Peace, Happiness, Love and Wisdom. Always remember that

"One is the author of one's choices".

Shahad B V

*Editor and Publisher, S4 AEI
IEEE #92937786*



I am happy that the first issue of the IEEE newsletter has come out very well. As you all are aware the newsletter is the media to communicate the activities of the IEEE student branch of this college.

I am sure you might be planning your activities for the year 2015. It is also time to tap various resources and services of IEEE to plan activities at our student branch and this will also help in penetrating the awareness of IEEE in the young minds of future professionals.

I wish all the best to the student branch to achieve the goals and objectives of IEEE. Having said this I would like to emphasize that team spirit and unity are essential to fulfil the vision and mission of IEEE. With best wishes

Prof. Mredhula L

*HOD, Dept. of CSE, MESCE
IEEE # 41544701*



It gives me immense pleasure to learn that IEEE students chapter of MES College of Engineering, Kuttippuram is bringing out a "Newsletter" on the occasion of "MESTECH 15". It is a matter of pride to the institution as many students can come up with innovative ideas and thoughts in Technology and Science. This institution has contributed significantly to the growth of technical education in the country. I wish this Newsletter will serve as a good media for our young minds to excel. I congratulate all students and staff who deviated their precious time for the marvelous piece of literary works.

I am sure that contents of this literary work will reflect the talents of our students who are also practically creative in profession. I hope that this piece of work will reflect the subtle sensation of our students in the field of education, art, literature and culture.

My special regards to team of students and faculty members who have taken keen interest in bringing out this issue. May GOD, the Almighty bless our young engineers. I wish all success to this venture of our students.

Prof. (Dr.) K M Moideen Kutty

HOD, Dept. of EEE, MESCE



I am happy that a Newsletter is being published by IEEE Student branch of our college on the occasion of MESTECH -2015. I am sure that this will give students and faculty an ample opportunity to publish their articles. I take this opportunity to congratulate all the members of IEEE SB of our college and wish all success in their future activities."

Prof. (Dr.) Gopakumar A

*HOD, Dept. of ECE, MESCE
IEEE Malabar Section Vice Chair
IEEE # 41592030*

Regions: The IEEE is divided into ten geographic regions worldwide: We belong to IEEE Region 10 Asia Pacific. Each IEEE Region has a Regional Student Activities Chair (RSAC) and a Regional Student Representative (RSR). These are the primary contacts for information and assistance on regional student activities. Regional student activities may include conferences, student paper or design contests and other events.

IEEE Sections: An "IEEE Section" is an IEEE entity which caters to the needs of a specified geographical area. IEEE has more than 300 local Sections. At present, there are 10 IEEE Sections in India. Each section is divided into subsections also. In Kerala we have three subsections. Trivandrum, Cochin and Malabar.

Student Branches: Student Branches are the backbone of the IEEE student program. The "IEEE Student Branch" helps the students to involve in the IEEE student activities in an educational institution. These student branches are located in all major Universities and Engineering Colleges all over the world. Each Student Branch is attached to the nearest IEEE Section. There are nearly 2,000 student branches in 80 countries, at various educational institutions. The office bearers are elected from student members, Chairperson, Vice Chairperson, Secretary, Treasurer and Exe Com members. Student Branches provide an opportunity for student members to begin networking in their areas of interest, and future profession.

Benefits of IEEE Membership: IEEE opens the door to opportunities that will help you develop your professional identity in Sciences, Technology, Engineering, and Mathematics (STEM).

● **IEEE keeps you Technically Current:** IEEE members can get access to IEEE online resources such as its cutting-edge journals, conference proceedings, standards and other online educational courses.

● **Professional Networking:** Communication and collaboration are cornerstones to a valuable career. IEEE is a conduit for these discussions. You can connect with IEEE professionals locally and globally who can help you for building your professional career.

● **Accelerate your plan:** As a member, you'll be presented with new resources, valuable opportunities and many discounts that will help you advance your career in the right direction.

● IEEE offers career development and continuing education programs to its members.

● Provide grants to new and innovative projects.

● Offers many annual awards for outstanding contributions to technology, society, and the engineering profession.

● Members can access information on local events and activities by signing in to my IEEE.

● In addition, members can also:

✓ access individual Society memberships and subscriptions;

✓ connect with local IEEE sections and volunteer leadership;

✓ find upcoming conferences;

✓ learn more about individual benefits;

✓ Read the latest news from IEEE, IEEE Spectrum, and IEEE Standards News.

● **Discounts for IEEE Members!:**

Members enjoy reduced rates on many proprietary products and services, including IEEE books and eBooks, journals and articles,



conferences and proceedings, standards, society memberships, and continuing education courses. In addition members have access to a variety of affinity programs that offer savings. Some of the most popular student benefits are:

- GoogleApps@IEEE
- Microsoft Software
- IEEE ResumeLab
- Humanitarian Program
- Rosetta Stone discount (IEEE account login required)
- Professional Networking - IEEE member NET
- Potentials Magazine
- Student Travel Grants

GoogleApps@IEEE: is available to members at no additional cost. IEEE, in partnership with Microsoft, is pleased to offer a wide selection of development software to IEEE Student members and Graduate Student

members. One software license per student membership is allowed each year of active IEEE Student or Graduate Student membership. Students can obtain this software, including updates to the latest versions, as long as they are active IEEE Student members or Graduate Student members.

IEEE ResumeLab: is an online service that allows IEEE members to develop a resume or curriculum vitae using a wide array of resume templates. Members can also perform mock interviews using over 900 potential interview questions or develop letters, portfolios, and skills assessments to use during the interview process. IEEE is pleased to offer a number of Student Travel Grants to assist Student Members in attending conferences and presenting papers. The IEEE Foundation supports various Education Funds to support the brightest and most capable young minds. To view each grants requirements or to apply, you will need to visit the Education Funds Web page for further details.

IEEE Potential Magazine: is the publication dedicated to undergraduate and graduate students and young professionals. IEEE Potentials explores career strategies, the latest in research, and important technical developments. Through its articles, it also relates theories to practical applications, highlights technology's global impact, and generates international forums that foster the sharing of diverse ideas about the profession.

These are some of the benefits that students could gain by joining in IEEE.

IEEE Membership: IEEE members are engineers, scientists and allied professionals whose technical interests are rooted in electrical and computer sciences, engineering and related disciplines. The highest grade of membership – IEEE Fellow – is attained through nomination by peers and approval by the IEEE Board of Directors for distinction in the profession. Students studying at least part time in a technology or engineering field at an accredited institution can become an IEEE member. Becoming a student member of IEEE is a simple process. First create an IEEE online account. Please provide your contact, professional, and education information in the application below. Then remit payment worth 26 dollars to any nationalized bank through 'challan' payment option.

Professional Ethics

Prof. (Dr.) K P Mohandas Dean Academic MESCE, (Former Dean, N I T Calicut)



Ethics: It is nothing but a set of moral principles. The motivation is based on ideas of right and wrong. It is a branch of philosophy which seeks to address questions about morality.

Profession and Occupation.

Often, many confuse between the two. There are professionals and amateurs in sports. Those who play for money alone are called professionals. Those who play for the country are called amateurs. There was a time when Olympics were open only to amateurs. In general, profession is an occupation requiring special education whereas the occupation is the principal activity in your life that you do to earn money. Professionals are those who are dedicated to a profession e.g. doctors, engineers, lawyers, managers etc. They are different from nonprofessionals as they can practice their profession as they have been trained for practicing the profession, even without an institutional help. However many professional are required to get a formal registration. For example, Doctors have to register in Indian Medical Council, lawyers have to enroll as lawyers, and architects have to register in the Council of Architects, etc. This registration is an agreement between the individual and the society to practice the profession according to a code of conduct. If one violates this code, the registration is likely to be revoked preventing the individual from practice.

Behaviour of Professionals

HONESTY AND INTEGRITY: Be honest and honourable in the deeds, honour will be the prime result of your deeds. Integrity is an unreduced or completeness or totality or moral soundness in the behaviour.

RESPONSIBILITY AND ACCOUNTABILITY: A professional is responsible for his actions. He should be glad to take up responsibility irrespective of the outcome. He should be accountable to: the institution to which he / she is attached, to the public at large, and to himself or his conscience.

RESPECT: Respect others if you want others to respect you, not simply based on their position or power only, more based on their ability and behaviour. Respect your elders even if they are lower in your professional cadre

LEADERSHIP: "Lead, Follow or Get out of the way". Leaders are not born, they become leaders by constant efforts. It is easier to follow than lead, but you will enjoy being a leader rather than be a follower, at least, don't be, "neither a leader nor a follower", such persons will be a nuisance to society.

ALTRUISM OR SELFLESSNESS: The quality of unselfish concern for the welfare of others acting with less concern for the self is called altruism. Imagine a world where people give of themselves simply because they want to. Not out of a sense of debt, nor because they want something in return. "No ulterior motives. No guilt feelings, just a desire to give for the sake of giving. Now

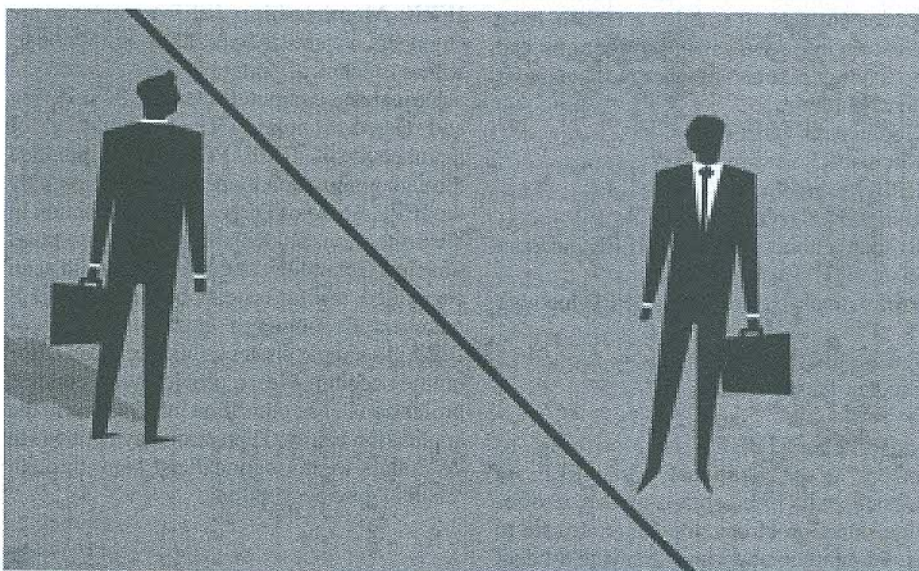
instead of imagining this kind of world, does your part in making it happen? Volunteer your time to improve your community. Give back to the world that has given you so much to you. 'Feeling good is the one ulterior motive that's acceptable.'" (Bill Daniels)

CARING AND COMPASSION: The three C's. Caring for others, Compassion for others. Communicate your compassion and care in a suitable way.

IEEE Code of Ethics

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to accept responsibility in making decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology; its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.



Massive Online Open Courses (MOOCs)

Prof. (Dr.) C K Raju, HOD, Dept. of IT, MESCE



Internet has radically transformed many traditional activities, especially over the past couple of decades. The progress has reached such a stage that it has become imperative to adapt to the new environment. Data and voice communication, banking, travel-related services, to name a few, no longer resemble their traditional style of planning and operations. The new changes and the accompanying turmoil has indeed opened up new opportunities, often, at the cost of closing some existing ones.

Education-based services of the twenty-first century, however, do not tend to portray a large transformation. One still gets to see kids being transported to school and back, and teenagers going to colleges. The mode of engaging classes, assigning home works, conducting exams, planning holidays and issuing of certificates – nothing much has changed. Internet has indeed become a resource for reference. Does it mean, then, that education is immune to the challenges that internet poses? Does it mean that even after a few more decades, things would continue as we see those services today? What kind of challenges to education are lurking in the background?

By the turn of the new century, a few Professors in MIT in US, were alarmed at what they observed was a pattern. There was a steep rise in cost for education, especially in the higher and tertiary sectors. Students who

could afford such education weren't those who were really passionate about learning. The interest of students in certain stream of education that were not guaranteed by return on investment, started to fade. Courses were getting slowly tied up with their promise of success in markets. Additionally, teachers were largely unsatisfied with the nature of work that their dispassionate students would do, which had a bearing on their professional career. The professors chalked a way out and by the dawn of the new century, they decided to record their classes and make the video sessions available online for needy students to pursue the professions of their choice.

The offering from MIT was christened OpenCourseWare (MIT OCW), which has now been claimed to be pursued by over 125 million people so far and the numbers are growing. MIT claims that the new offering, currently provided under a brand name of edX, guarantees (a) real classes in art, science or technology, (b) an amazing experience with latest tools and virtual laboratory environments, (c) freedom of doing it on one's own schedule and (d) meeting friends who are equally passionate on the topic scattered across the globe. This new mission of imparting education to anyone who has access to internet has now come to be known as the era of MOOCs – the Massive Open Online Courses.

Coursera and Udacity are two other major service providers who have made MOOCs more richer. Coursera claims to have partnership with over 118 universities and has over a million online students (course rians) on its rolls, prominent among which are premier Universities from over 25 countries. Many Universities have started adapting their curriculum in order to take advantage of this online education, by preferring a mix of online and regular courses, which has

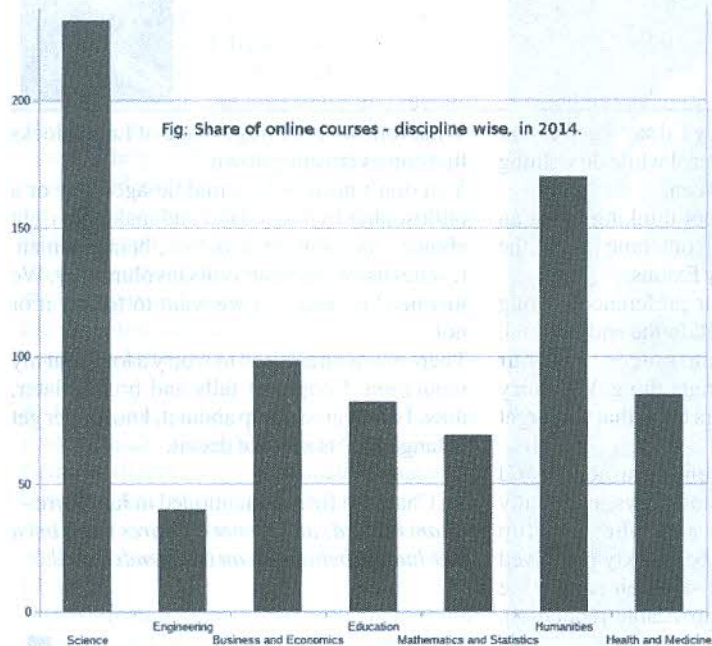
now been christened as 'blended-mode of learning'. The Governor of Kerala, who is also the Chancellor for most of the public Universities, has recently gone on record, instructing Vice Chancellors to ensure availability of such a 'blended-mode' across all major programmes.

Industries and academic institutions have started to observe very keenly any mention about online courses completed by prospective candidates. At IIIT Hyderabad, a senior professor mentioned that the institution do not offer research seats to students who haven't done any serious online courses. This sentiment has also been echoed by many HR specialists who are involved in the recruitment process for prestigious companies. This new trend makes it imperative for serious students to enroll for and successfully complete a few online courses offered by edX, Coursera or Udacity.

A peep into the new set of online students who actually enroll for courses reveal even more exciting results. A survey conducted by Coursera, reveals that the age-group of participants fall in the 18-75 range, while a majority of serious students who successfully complete the course, belong to the 21-31 age. The survey, further, finds that a majority of women are not employed and are housewives. Furthermore, in countries where civil disturbances are on the rise, the survey reveals a very high enrolment of students for online courses. Schools and other educational institutions are often the first set of institutions which are closed during the event of hostile acts or riots.

Udacity has gone a step further by partnering with Georgia Institute of Technology, US to offer a complete "Massive Online Open Degree" in Computer Science, last year. This program, however, comes at a cost which Georgia Institute of Technology claims is just about one-fifth of the fee required for its on-campus program. Here, the emerging pattern and the new challenges for traditional mode of education, become more visible. MOOCs, therefore, cannot be treated as passive players in imparting education. They are active partners in promoting education on a global stage, and since they are largely invincible, their activities resemble subterranean tectonic plate movement, capable of bringing in large scale changes in the geography of educational services, in the not-so-distant future.

Fig: Share of online courses - discipline wise, in 2014.



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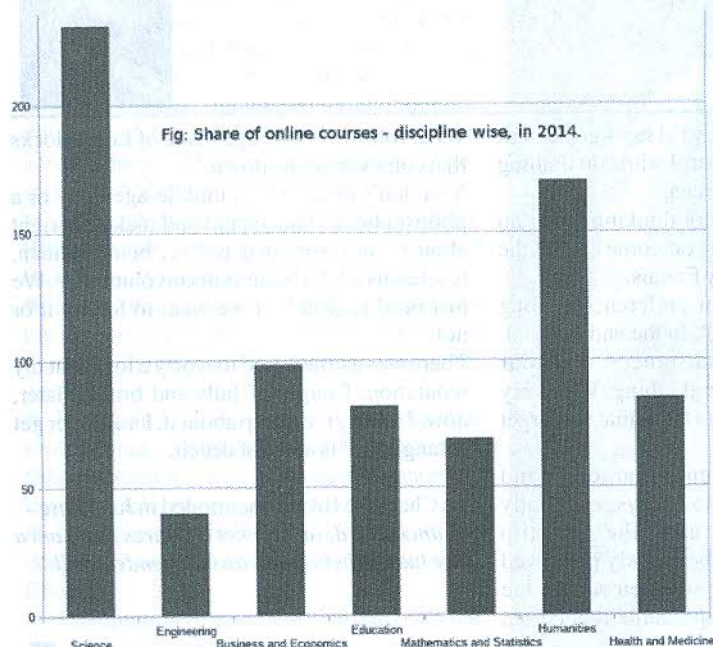
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PLANT ASSISTED AIR CONDITIONING SYSTEMS FOR A BETTER TOMORROW

Liyana shirin, S1 S2 EC (IEEE#93182112)



Biofiltration to remove contaminants from the air has a long history, dating to early research about how to safely maintain deep space flight. Recently, several research teams have used this body of work to apply Biofiltration to the Heating, Ventilating and Air Conditioning (HVAC) systems of buildings. A plant-based air filtration system called the bio wall has been developed as a method to maintain high levels of indoor air quality (IAQ) without losing energy efficiency. In this design, various plants are integrated into the ventilation system. As a byproduct of plant growth, CO₂ and volatile organic compounds (VOCs) are removed from the air and oxygen is added. This system allows conditioned air to remain in the building and avoids energy losses due to thermal mixing in conventional ventilation systems.

INDOOR AIR QUALITY

Concerns about IAQ were first expressed in 1950s, when correlations were established between polluted indoor air, allergies and other chronic illnesses (Randolph, Theron, and Moss, 1980). In the 1970s, with buildings becoming increasingly airtight and isolated

from the outside environment, the problem of polluted indoor air became an even greater concern. The IAQ problem became more severe as airflow rates were lowered to reduce energy use in buildings.

Poor IAQ has led to a number of health issues for building occupants. The symptoms include headaches, dizziness, nausea, fatigue, irritation of the eyes. These illnesses have been defined as Sick Building Syndrome (SBS) by the World Health Organization (WHO). It was estimated in 2000 that the United States lost US\$ 125 billion annually in decreased productivity due to poor indoor air quality. Estimates indicate that the United States can save US\$ 40–200 billion per year simply by improving its IAQ. Poor IAQ has also been linked to other severe illnesses such as cancer, kidney and liver damage, nerve damage, and loss of coordination.

In urban areas, this problem is further compounded as the outside air is usually highly polluted, and the cost of purifying and conditioning this air further increases the ventilation energy cost. With these

detrimental effects in mind, plants, with their natural ability to purify air and remove pollutants, are increasingly being viewed as a solution to the problem. In addition, there are also the visual and psychological benefits that plants have on humans. The possibility of reducing energy consumption by naturally cleaning indoor air has further attracted interest in this area, which is broadly classified as phytoremediation.

NASA RESEARCH

Over 35 years ago, when high concentrations of pollutants were found in closed space vehicle environments. NASA researchers started investigating the use of plants to improve IAQ in these airtight compartments so as to maintain a healthy breathing zone. With additional research conducted at NASA's National Space Technology Laboratories (NSTL) in Southern Mississippi by NASA scientist Bill Wolverton, phytoremediation proved successful in treating domestic sewage and removing toxic chemicals including radioactive elements from soil and wastewater.

Courtesy: IEEE Potentials

Character, Reputation And Its Maze Of Deceit

Vijay S Paul Vice Chair, Secretary IEEE Kochi Subsection



Homo Sapiens – The entire species is as much a human being as it tries being human. Everyone has the same flaws, same mindset, same character. Only difference arises in being able to modulate each to its own level and preference.

Character and Reputation, probably the two most important words around which a person revolves his whole life about. While some worry about perception of their reputation, the fewer of the lot focus on a strong character – the true inner self. And this is exactly where most of us get our choices wrong.

Reputation is what others perceive about us. Character, is who we genuinely are. Though character is what we truly control and the reins to our reputation lie in the hands of others, many lose a night's sleep over it.

Common human tendency I'd say – go berserk over things you can't control while do nothing about things you actually can.

More heads lose their cool thinking about an Ind-Pak cricket match outcome than the results of their University Exams.

This is where we get our preferences wrong and our choices off-target. In the end as usual, we blame the circumstances for our incompetency to do the right thing. We worry so much about what others think that we forget to live a life of our own.

This juggling between Character and Reputation, I see a lot nowadays, especially within the Student and the Startup Community. In order to be quickly perceived as the best, many sort of sell their soul to the devil in return for an impeccable reputation.

What follows is a bridge made of Lego blocks that comes crashing down.

You don't need to be a middle-aged guy or a philosopher to understand and make the right choice. As mentioned before, being human, teaches us all the basic skills involuntarily. We just need to decide if we want to follow it or not.

There was a time I used to worry a lot about my reputation. Couple of falls and bruises later, now, I don't give a crap about it. I no longer get entangled in its maze of deceit.

As Charlotte Bronte mentioned in Jane Eyre – *"I am no bird; and no net ensnares me: I am a free human being with an independent will."*

Real Robots Against Ebola

Devi P Krishnan, M.Tech. EEE (IEEE#93276284)



A few Fridays ago, we took a little bit of a dig at all of the media coverage of an "Ebola-fighting robot" that turned out to be essentially just a UV light on a wheeled cart hooked up to a timer. It's clever marketing, but not clever robotics. Even one of the fanciest UV disinfecting "robots" have instructions that begin, "after a hospital staff member cleans the room using traditional methods..." This is not what real robots are all about. Real robots use autonomy (or at least teleportation) to keep humans as far away from dangerous situations as possible. You'd think that real robots would have a lot to offer when it comes to assisting with the control of a highly infectious disease, just like you'd think that robots would have a lot to offer when it comes to assisting with the control of a highly radioactive nuclear power plant. You'd be right to think that, but the problem that we're having now with Ebola is the same as the problem that we had with Fukushima: there simply aren't any robots that are prepared and ready, right now, to tackle an immediate crisis, even though robots would be immensely valuable in this situation.

To attempt to rectify this, the Center for Robot-Assisted Search and Rescue (CRASAR) at the Texas A&M University is partnering with the White House Office of Science and Technology and other groups to hold a policy workshop on Safety Robotics for Ebola Workers. The goal of the workshop will be to not just figure out what kind of robots would be valuable to have on-hand for future epidemics, but also to try and identify things that the robots we have now can actually help with. And they've already got some good ideas.

In a recent blog post, CRASAR director Robin Murphy lists some possibilities that her team has come up within their discussions:

- Mortuary robots to respectfully transport the deceased, as Ebola is most virulent at the time of death and immediately following death
- Reducing the number of health professionals within the Biosafety labs and field hospitals (e.g., automated materials handling, telerobotics patient care)
- Detection of contamination (e.g., does this hospital room, ambulance or house have Ebola)
- Disinfection (e.g., robots that can open the drawers and doors for the commercially

available "little Moe" disinfectant robot)

- Telepresence robots for experts to consult/advise on medical issues, train and supervise the worker decontamination to catch accidental self-contamination, and serve as "rolling interpreters" for the different languages and dialects.

- Physical security for the workers (e.g., the food riots in Sierra Leone)

- Waste handling (e.g., where are all the bio waste from patients and worker suits going and how is it getting there?)

- Humanitarian relief (e.g., autonomous food trucks, UAVs that can drop off food, water, medicine, but also "regular" medicine for diabetes, etc., for people who are healthy but cutoff)

- Reconnaissance (e.g., what's happening in this village? Any signs of illness? Are people fleeing?)

She also explains some of the challenges:

"In order to be successful in any one of the tasks, robots have to meet a lot of hidden requirements and sometimes the least exciting or glamorous job can be of the most help to the workers. Example hidden requirements: Can an isolated field hospital handles a heavy robot in the muddy rainy season? How will the robots be transported there? Is it easy enough for the locals to use so that they can be engaged and earn a living

wage? What kind of network communication is available? What if it needs repairs? That's what I am working on, applying the lessons learned in robotics for meteorological and geological disasters."

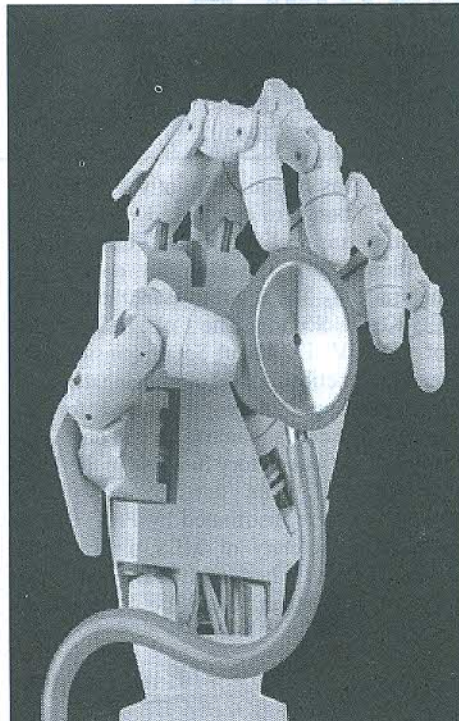
Some of these tasks would be achievable with existing systems, or with relatively minor modifications to existing systems, assuming that the infrastructure requirements are met. For example, Telepresence robots would allow Ebola experts anywhere in the world to consult with patients (and with local doctors) while undertaking zero risk, and at low expense and a much more reasonable investment of time.

The picture at the bottom of this article is a more specific example: it's a Husky that's been outfitted with an arm and a spray system that can decontaminate anything you (remotely) point it at. Taskin Padir, a professor at Worcester Polytechnic Institute who put this system together, explained to Computer world why hacking something together like this is the only way to go in the short term:

"We are not trying to come up with a brand new design because I don't think we have time for that," Padir said. "I'm trying to repurpose some of the standard designs we have. We want to be able to deploy something within three months. I can't design brand new robots that would take a year to figure out."

Another idea includes using a remotely operated Bobcat to somehow respectfully manage and bury deceased Ebola victims. But this is where you have to consider all kinds of non-technical issues, which is why CRASAR is holding this workshop in the first place. You can't just make a robot that will functionally deal with burying people—you have to make one that does so in a way that's culturally appropriate, and to figure out how to do that, you need to talk to the people who are going to use this robot, and establish guidelines for use in a wider social context.

This seems like a very sensible and considerate approach to deploying robots to help fight Ebola. And realistically, it's about as fast as we could possibly expect to get any sort of robotic system from not existing to doing something practical out in the field. Even so, we have to wonder what the Ebola epidemic will be like three months from now, and how much of a difference it would have made to have robots ready for something like this earlier.



Seatbelt Sensors to Fight Drowsy Driving

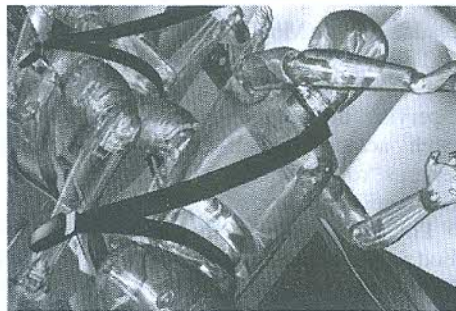
Mrs. Sabira C., M.Tech. EEE (IEEE#93276045)



You can't kick back and enjoy a nap while cruising in a self-driving car just yet. But a new generation of smarter cars may be able to watch out for signs of a nap attack by measuring your heartbeat and breathing patterns.

A European project called HARKEN has created a sensor system built into the safety belt and the seat cover of cars that can detect fatigue or drowsiness, even before the appearance of the more obvious symptoms such as yawning or bad driving patterns. The system could potentially lead to a driver warning system capable of helping to chip away at the annual death toll from road accidents—33,561 fatalities in the United States and 28,100 fatalities in the European Union in 2012. Driving accidents may represent the third most common cause of death and disability worldwide by 2020.

"The variation in heart and respiratory rate are good indicators of the state of the driver as they are related to fatigue," said Jose Solaz, director of innovation in automobile markets and mass transportation at the Biomechanics Institute of Valencia in Spain, in a press release. "So when people go into a state of



fatigue or drowsiness, modifications appear in their breathing and heart rate; HARKEN can monitor those variables and therefore warn the driver before the symptoms appear."

The HARKEN system consists of a seat cover sensor, a seat belt sensor and a signal-processing unit to crunch the sensor data in real-time. Such a system can also filter out background noise such as vehicle vibrations and other driver body movements, allowing it to focus on detecting the heartbeat and breathing rate. Drivers have begun trying out the HARKEN system during closed-track tests.

Car manufacturers have already started deploying sensor systems to detect driver

fatigue in higher-end cars. Some Lexus models use cameras to watch for drowsiness. Mercedes-Benz has vehicles that use steering sensors to detect erratic driving behaviour. (Engineers at the University of Washington recently showed that subtle signals from the steering wheel can predict approaching drowsiness.) BMW has even considered the idea of incorporating information from blood-sugar monitors or possibly developing a smart car capable of stopping if it detects the driver having a heart attack. (HARKEN technology might possibly come in handy in the latter case.)

European researchers hope Project HARKEN's focus on a short time-to-market scope will soon lead to street testing under real traffic conditions. Any technology that allows for improved warnings for drowsy drivers may go a long way toward saving lives—driver fatigue accounts for about 8.3 percent of all vehicle crashes, according to the European Union's iMobility Forum. That rises to somewhere between 20 to 35 percent of all serious road accidents.

IEEE STUDENT BRANCH ACTIVITIES REPORT 2014

Ms. Basila M Sali, S8 ECE, IEEE SB Chair Person 2014 (IEEE# 92262048)



IEEE activates for the year 2014 was a memorable experience under the guidance of our SB Counselor. Since we had no prevailing model for the SB activities we started from the scratch. Six months back we started with 3 student members. Our major focus was there on Membership Development Programmes. With pleasure I am here by presenting the IEEE activities report for the year 2014.

2nd April 2014:

A session was held on "Benefits of being an IEEEian" By the Dean, Academic of our Institution, Prof. (Dr.) K.P. Mohandas who is as well a lifelong member of IEEE.

IEEE ECFDP: 9th to 13th June 2014

The "Early Career Faculty Development

Program" was organized jointly by MESCE and IEEE Young Professionals, Kerala Section with the support of IEEE Educational Activities Board. The Five day course was inaugurated by Mr. R. Srinivasan, the Chair of IEEE Kerala Section. The College Principal, Prof. (Dr.) V. H. Abdul Salam presided the Inaugural function. A total of 58 delegates from 18 engineering colleges registered for the program. The course came to an end on 13-09-2014 with the valedictory function in the Main Seminar Hall. The certificates of the participants were distributed by Prof. P.O. J. Lebbra, the Secretary of MES, Prof. V. K. Damodaran, the Chair of ECFDP and Prof. (Dr.) M. B. Zaman, the Vice Principal of MESCE.

12th June 2014:

The IEEE SB counselor has arranged a session for the interaction of leaders of IEEE Young Professionals Affinity group with the students of MESCE Kuttippuram. Prof. V. K. Damodaran, the Chair of ECFDP, talked with the students regarding his experiences with IEEE. Mr. Vijay S Paul (Young Professionals member and IEEE SB MESCE Mentor) held a session, sharing his experiences having been a part of IEEE SB, MESCE. Mr. Renjith R. Menon also graced the session with a few words on "Why students should join IEEE".

18th June 2014:

A meeting was held under the agenda of Students Branch formulation. The executive committee was formed. Ms. Basila M Sali (S8,

ECE) was chosen as the IEEE SB Chairperson while Ms. Amrutha Murali (S8 AEI) became the WIE chairperson. Mr. Mohammed Ashfaq P.V. (S4 IT) was appointed the Vice Chair, Mr. Muhasin Ashref (S6 EEE) was appointed the secretary and Mr. Abdulla Amar (S8 AEI), the treasurer of the SB.

25th June 2014:

IEEE SB MESCE 'Spectrum Talk' was conducted by one of the student members, Mr Shahad B.V. (S3 AEI). The topic discussed was 'Mind Reader and Neurological System'.

2nd July 2014:

IEEE SB MESCE was back with another 'Spectrum Talk'. The talk was taken by Ms. Amrita Murali (S7 AEI and WIE Chairperson). Her topic was, 'Robotic Fingers'. The discussion included the development of sensor operated robotic fingers by MIT scientists.

9th July 2014:

This week IEEE SB MESCE conducted yet again another 'Spectrum Talk'. The members were given a talk on 'Automatic Braking System' by Mr. Ajmal Sha P.M. of S8 AEI.

16th July 2014:

The meeting was held in regard with membership campaigning for IEEE. A program committee and membership committee was formed under the executive committee and their respective jobs were allocated.

17th July 2014:

A quiz competition was held in the college auditorium as a part of the membership development program. The quiz master was Ms. Nisheena (M.Tech Student from EEE). The quiz had questions spanning from all areas of general knowledge.

19th July 2014:

Event: Malabar Hub FACE-2-FACE
IEEE EVENT Organizer(s): Ms. Basila M Sali (IEEE SB MESCE chair), Mr. Fawad Rasheed (IEEE Malabar Hub Student Representative) Brief description of event: The Malabar Hub FACE-2-FACE Meet was named PINNACLE-14. The morning session included a talk on industrial planning by Mr. Sandeep (KERALA IEEE Industrial Chair) and an office training session by Mr. Mithun Mathew (IEEE Young Professionals Member).

13th August 2014:

The branch counselor Dr. Anzar S. M. took a session for the SB students on "Mind power". He explained various strategies of the mind in taking decisions and the process involved in it.

20th August 2014:

Coming back with another 'Spectrum Talk', IEEE SB MESCE discussed about 'Energy Chakras with Modern Technology'. The class was taken by Mr. Aqib Karim, (IEEE student member, S1-S2 CSE). It was a panel discussion that stressed on Energy Chakras.

27th August 2014:

A debate was held on the topic "Does poverty lead to crime?" which was the 26th in the series of SOLD(speak out loud debate).

18th September 2014:

The IEEE SB MESCE held a special session, 'BOOT IT UP' camp to introduce IEEE to the first year students. The Chief Guest for the day, Prof. (Dr.) V.H Abdul Salam, Principal of MESCE, congratulated the new members on their decision to join the largest technical community. Principal also officially inaugurated the IEEE activities for the year 2014-15. Mr. Vijay S Paul (Young Professionals member and IEEE SB MESCE Mentor) along with Mr. Shahim Backar (Young Professionals member) gave details on the 'IEEE Community' along with a presentation of how IEEE has helped many of the professionals today.

24th September 2014:

An episode of SOLD (speak out loud debate) was held with the topic "Does Google make you dumb?". The debate mediator was Mr. Mohammed Jasim of S1-S2 AEI and the debate concluded in favor of the team speaking against the topic.

8th October 2014:

Another edition of IEEE SB MESCE 'Spectrum Talk' was conducted; The topic being 'Brain Mapping'. The class was led by Mr. Mohammed Jasim, IEEE student member of S1-S2 AEI.

10th October 2014:

The quiz held all around the colleges in Kerala as a part of the IEEE day celebrations for the first year students was held at the college also. The questions and their set of answers were sent from the IEEE Kerala section.

18th October 2014:

The WIE affinity group of MESCE held a "MIND DIETING CAMP" for the students of the college. The session was inaugurated by the Vice Principal of our institution Prof. (Dr.) Mohd. Bedeuzzaman. The class was taken by Dr. C. H. Ashraf (MA, Ph.d, Philosophy).

5th November 2014:

The IEEE SB MESCE in association with EEE department Association of MESCE has

organized a one day workshop on "Technical writings using LATEX" for the PG students. The hands on training program was led by Mr. Hari C.V., (the former student of AEI department, MESCE) Research Scholar from NIT Calicut.

12th November 2014:

The IEEE SB MESCE was back again with yet another meeting. The meeting was primarily based on the 'Biometric Technology Today'. Dr. Anzar S. M. took class on the steps and process involved in Biometrics.

19th November 2014:

The regular IEEE SB MESCE meeting, conducted every Wednesday, introduced its members to the world of Arduino. The class was taken by Mr. K.M.I. Yasar Arrafath, Assistant Professor of AEI Department, MESCE. He gave details on the basics and functions of the various Arduino boards.

26th November 2014:

Another edition of the IEEE SB MESCE 'Spectrum talk' was conducted. The topic discussed was 'Finger Print Recognition Technology' with a presentation by one the members, Mr. Shahad B.V. (S3 AEI). Dr. Anzar S. M., Branch counselor, then talked about the same from a research perspective. This was followed by a debate, 'Biometrics: A boon or a curse?'. The members actively participated in the event and gave strong points supporting their ideas.

3rd December 2014:

This week IEEE SB MESCE discussed about VHDL. The class was taken by Ms. Shibi Fathima A., Assistant Professor of AEI Department, MESCE. She elaborated on the basics of VHDL. With the help of a presentation, the Professor gave details on the functions and its programming.

10th December 2014:

In this edition of the IEEE SB MESCE, the SB counselor stressed the importance of technical reporting. Strategies were also planned for making the student branch activities more visible in the social media including in the college web site.

7th January 2015:

This week's MESCE IEEE SB had yet another 'Spectrum Talk'. It was conducted by Mr. Zahran Mohammed; S6 student member from AEI Dept. The topic discussed was 'LI-FI gets ready with WI-FI'. He further briefed about a project carried out by Universities of Cambridge, Oxford, St. Andrews and Strathclyde. The meeting was dispersed with Ms. Basila, Chairperson giving a rough outline of 2015 Agenda of MESCE IEEE SB.

IEEE MESCE Student Branch

Ms. Vidya S., M.Tech. EEE (IEEE#93275258) & **Mr. Sreehari S.,** S6 EEE (IEEE#93171927)



IEEE SB MESCE is officially formed in the year 2006. Our MESCE Student Branch had a vibrant history. The various historical highlights of our Student Branch includes:

- All Kerala Student Congress (AKSC) 2006 held in MESCE.
- Mr. Nithinsha of MESCE is awarded "Larry K Wilson" Award for R10 (2008), for his exemplary Student Volunteering activities.
- **Jashn** : IEEE Kerala Section Silver Jubilee Celebrations was held in MESCE (2008) to wide acclaim.
- MESCE was awarded the IEEE Kerala Section's Award for Best Management Support (2009).
- Two teams from MESCE were selected (out of top 20 teams in India) in IEEE All India Student Awareness Contest (2009).
- A team of 12 Student members attended R10-WIECON(2009).
- MESCE SB hosted GENESIS - Hub 4-Hub 5 WIE Congress (2010).
- MESCE was the Champion in LINK Camp 2010 held at CET Trivandrum (2010).
- MESCE wins first place in LINK SB Website Contest. Automatically enters for R10 SB Website Contest. (Webmaster -Mr. Vijay S Paul)
- Mr. Namith Najeeb (Assistant Professor, ECE) won IEEE Outstanding Student Branch Counselor Award (Global)(2010).
- Mr. Ahamed Unni of MESCE won the IEEE LINK All Kerala Young Scientist Contest (2010).
- Mr. Vijay S Paul (MESCE) won first place in paper presentation at Hub 5 WIE

Forum at KMCT Engineering College, Calicut (2010).

- MESCE SB hosted the LINK Camp in 2011.
- Mr. Edet Bijoy (Assistant Professor, ECE) is nominated the Malabar Hub VSAC (2013).
- Ms. Jyothis M Thomas (Student of AEI) is nominated the Malabar Hub WIE Rep (2013).
- Ms. Jyothis M Thomas (Student of AEI) attended the R10 Student-WIE-Gold Congress in Hyderabad (2013).
- Dr. Vinod Pottakulam (Associate Professor, EEE) was nominated Malabar Hub VSAC 2013.
- IEEE ECFDP held from 9th to 13th June 2014: The "Early Career Faculty Development Program" was organized jointly by MESCE and IEEE Young Professionals, Kerala Section with the support of IEEE Educational Activities Board.
- The Malabar Hub FACE-2-FACE Meet named PINNACLE-14 was organized in 19th July 2014.
- Conducted a 'Boot It Up' programme for first years to introduce IEEE on 18th September 2014.
- The WIE affinity group of MESCE held a "Mind Dieting Camp" (18th October 2014) for the students of the college. The class was taken by Dr. C.H. Ashraf (MA, Ph.D, Philosophy).
- Organized a one day workshop on "Technical writings using LATEX" for the PG students on 5th November 2014.
- Conducted 'Arduino Workshop' by Mr K.M.I. Yasar Arrafath (Assistant Professor, AEI) on 19th November 2014.
- Conducted a workshop on 'Introduction to

VHDL' by Mrs. Shibi Fathima A (Assistant Professor, AEI) on 3rd December 2014.

- Prof. (Dr.) Gopakumar A. (Professor & Head, Dept. of ECE) is nominated as Vice Chair of IEEE Malabar Subsection 2015.
- Prof. (Dr.) Mohammed Bedeuzzaman (Vice Principal MESCE) is nominated the Exe-com Member of IEEE Malabar Subsection 2015.

Unfortunately for the last two years, our IEEE student branch activities remained dormant. Presently we are in the path of its revival towards the old vibrancy. Six months back we started with 3 student members. Presently it is 102. For the last 6 months our focus was on Membership Development Programmes. It was indeed successful under the leadership of Ms. Basila M Sali, (SB Chair Person). We have officially formed our new SB Exe-com for the year 2015. In the coming days our focus will be on technical and managerial activities for empowering our students to meet the growing needs of the society. In addition to the student branch we have a registered WIE (Women in Engineering) affinity group, Nearly 60 of our student members are attached with WIE. We are also in a state to file petition for registering three new IEEE technical societies in our Institute, viz., signal processing society, communication and biomedical societies. We expect the whole-hearted cooperation and unequivocal support of the management, teaching and non-teaching faculties and the students for the successful conduction of all the IEEE activities at our Institute.

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ALL ABOUT WOMEN EMPOWERMENT

Ashaya Narayanan A L, S4 ECE-A (IEEE#93171931)

Women empowerment in India is a well-known and a burning issue. As we go through newspaper, magazine or news we can see a lot of incidents and accidents with women in India. It is only in India that blatant, vicious and ruthless gang rapes occur frequently in a state. It does not stop here. There are many other incidents such as dowry death, exploitation, harassments, domestic violence which they face in their day to day life. Women are fully manumitted and free to choose their profession, partner and the way of life. But the deep rooted feelings of sexism, domineering attitude of males and the age old evil customs.

"A face veiled from the world
A shadow towered over,
A pearl created to dwell in
fathomless oceans
A voice suppressed, a song unsung,
A diety in ruin
A creation less celebrated
A being of substance
I am known as women!"

This is what I feel as a women whose voice are seldom heard whose being is less celebrated. She is still identified as a daughter, a mother, a daughter-in-law, and a mother-in-law but not as a person. Alas! the world know her

importance.

What is women empowerment?

It can be put in simplest of words where it is the creation of an environment where women can make independent decision, choose her own life style, work for her own personal development as well as shine as equals in society. Women empowerment is a burning issue and mostly discussed topic with no real solution in the country since independence but when it comes for the equality of women and men the gap still exists. While considering the education 82.14% of men are educated while only 65.46% women are known to be literate in India. Eradicating the gap and providing education to women is the key solution to break wall of intolerance and exploitation. Another issue existing in India is health safety of women. Health safety concerns of women at most importance for well-being of a country. However there are alarming concern where maternal health care is concerned. According to 2009 the maternal mortality rate in India stands at 501/1000 which may as 78,000 women dying of childbirth complication in year. The number is multiplied considerably. Poverty, illiteracy adds to these complication as they are interconnected.

Some of the action taken to empower women

Swami Vivekananda once said, the best thermometer to measure the development of a nation is its treatment of its women of that state. We Indians worship goddess like Lakshmi but when it comes to the right of equality of women we always lag. Women are always the pillars of society and they must be protected and cared off. There are some of the actions taken by the govt. and NGO to bring our sisters to forefront. National commission for women is the department for the welfare of women and children development. It was exclusively set up for women to help them by reviewing legal and constitutional safe guards. Program such as 'Swayamsidha' empower women to have increased access to all kind of resources that they are denied. This program will benefit about 9,33,000 women with the setting up of 53,000 self-help groups 26,500 village societies and 650 block societies.

India still has a long way to go and without supporting the pillar of society this would be quite impossible. It's time for men to wake up to a world that is moving towards equity and equality.

In the world of brilliance it doesn't matter you as a women or men break the chain, fly high and spread the colours of equality

Windows 10 will have biometric security

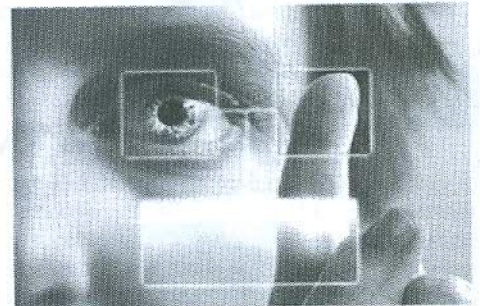
KATIE COLLINS

Microsoft has announced that Windows 10 will support the new version of the Fast Identification Online (Fido) security system. This allows services and devices to work with various forms of biometric authentication -- such as physical and behavioural traits -- to eliminate the need for passwords.

The Fido Alliance is formed from a variety of industry partners, all of whom are working together to ditch passwords and revolutionise the nature of authentication -- all the while keeping it open, scalable and interoperable. Microsoft has contributed design inputs to the Fido Alliance that have been incorporated within the technical specifications of the latest version of Fido, and the technical preview of Windows 10 reflects these inputs. From a business and enterprise point of view,

this is likely to be a huge selling point for Windows 10. An ever-increasing number of high-profile hacks mean there is widespread demand from businesses to implement security solutions that move beyond passwords. Announcing the integration in a blog post, Microsoft's Dustin Ingalls described the company's work in this area as "one of the most important priorities for the upcoming Windows 10 release".

Members of the Windows Insider Program can start to evaluate the new authentication abilities of the upcoming version of the operating system immediately. The current technical build enables a number of enterprise scenarios and showcases integration with major Microsoft products and services including Windows 10 sign-in, Office 365 and Exchange Online.



The new authentication capabilities won't be restricted to business users of Microsoft services, however. Windows 10 will also offer security integration for consumer services such as Outlook.com and OneDrive.

FACULTY CO ORDINATORS 2015 - 16



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VSAC, IEEE Malabar Hub



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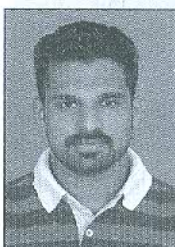
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