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BIOMEDICAL ENGINEERING

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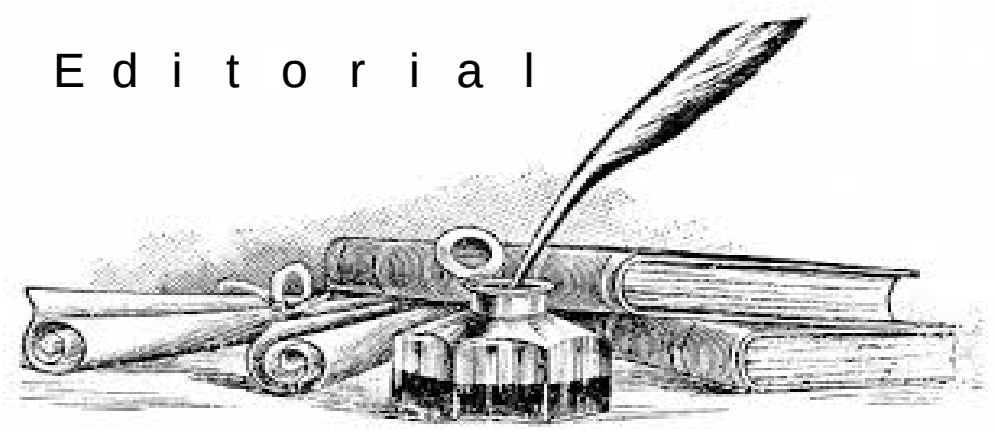
INSIDE THIS ISSUE:

MESSAGE FROM THE EDITORIAL DESK

Editorial



Its that time of the year again where we the Biomedical Department Editorial team bring to the rich collection of hand picked stories that will enthrall you in all aspects. The quarterly journal of the DEPARTMENT OF BIOMEDICAL ENGINEERING for July-August-September 2014 is all about this amazing experience.

Having each of the budding Biomedical Engineers and faculty members works as a single soul towards the bright future of Biomedical Department we , the Editorial Team give you an up-to-date coverage of happenings aggregated from all around the department.

We will be back with the next issue summing up bigger achievements of the department on January,2015.

Best Wishes

-Editorial Team

STAFF CORNER

PUBLICATIONS:

- **Pravin Kumar Subbaraj, Kavitha Anandan, Geethanjali Balasubramanian, Mahesh Veezhinathan** , Analysis Of Cognitive Load For Bilingual Subjects Based On Lexile Measures , International Journal of Cognitive Informatics and Natural Intelligence , Vol 8 and issue 1, 18 - 35 , 2014.
- S.Usha Rani, M.Chitra and **Mallika Jainu.** Hepatoprotective Effect Of Wattkaka Volubilis Extract On Aluminium Sulphate Induced Liver Toxicity. International Journal of Pharmaceutical Sciences and Drug Research. 2014: Volume 6; Issue 2 . (IF: 1.04).
- E. Priya & **Mallika Jainu**, Study of Adverse Effects of Vildagliptin and Insulin Treatment in Diabetes Mellitus Patients. Research journal of Recent Sciences Vol3; 2014: 1-8.
- Sumathi. K, Anandh.K.R, **Mahesh.V** and Ramakrishnan.S Anisotropic Diffusion Filter based Edge Enhancement for the Segmentation of Carotid Intima-Media Layer in Ultrasound Images Using Variational Level Set method without Re-initialization 36th IEEE, EMBS Conference, Chicago, US.
- **Mr.R.Sivaramakrishnan,** AP/BME presented a paper entitled "Performance Evaluation of Bio-Inspired Optimization Algorithms in resolving Chromosomal Occlusions" at the International Conference on Control Instrumentation Communication and Computational Technologies (ICCICCT 2014), organized by the Department of EIE, at Noorul Islam University, Kanyakumari.
- Shree Shyamalee Venmani Ramesh, Vaishali Gupta, Vyshnnavi Parthasarathy, **Mahesh Veezinathan** and Pravin Kumar S. presented a paper titled "Comparison of classifier performance in their ability to classify respiratory sounds" in National Conference on Computational Intelligence for Engineering Quality Software, Coimbatore.

FACULTY ACTIVITIES:

- **Mr. R. Sivaramakrishnan** AP/BME was invited as the Guest of Honor for the ISTE-SRM Sponsored Short Term Training Programme (STTP) on "Soft Computing techniques for Clinical Decision Making", organized by the Department of Biomedical Engineering, PSNA College of Engineering and Technology, Dindigul, Tamil Nadu and delivered a lecture on "Image processing techniques for automatic karyotyping" to a gathering of 50 participants.

"Always aim for achievement, and forget about the success" - Helen Hayes

- **Mr. R. Sivaramakrishnan** AP/BME presented a poster entitled "Ocimum Sanctum extract coating on Biomaterial Surfaces to prevent bacterial adhesion and biofilm growth" at the National Conference on Recent Strategies of Herbal Extracts in Life Sciences-An experimental approach, organized by the Department of Pharmaceutical Technology, at Anna University, BIT Campus, Trichy and won the **best poster award** for the same.

Mr. Sivaramakrishnan

- **Dr. A. Kavitha,** Asso Prof/HOD attended the first doctoral committee meeting for the PhD scholar Ms. M.Latha as DC member at Department of ECE, MIT campus, Anna University.

Dr.Mallika Jainu

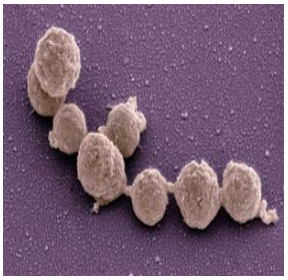
- **Dr. Mallika Jainu** AP, conducted doctoral committee meeting for her PhD scholar Mrs. E.Priya at Bharathiyar University, Coimbatore.

- **Dr. Mallika Jainu** AP & **Dr. S. Pravin Kumar** Asso Prof received the SSN **best faculty award** for the year 2013-14.

Dr.S.Pravin Kumar

TRENDING TECHNIQUES IN BME

FIRST SYNETHETIC CELL



First synthetic cell

Creating life in the lab? It wasn't such a stretch for J. Craig Venter, who successfully co-mapped the human genome in 2001. Even while completing that feat, the genetic cartographer wondered if he could string together DNA and make life of the bacterial kind from scratch. So like a biological Lego builder, he started with off-the-shelf chemicals and, after 15 years of painstaking trial and error, managed to reconstruct the genome of a bacterium that successfully "booted up," dividing and replicating just like any other bug. Such synthetic life, he hopes, will make it possible to, among other things, generate new forms of man-made biofuel and speed up vaccine production by making it easier to create large amounts of whichever strains of influenza are circulating in a particular season.

LAB GROWN LUNG

Growing new body parts has always been more science fiction than science reality, but that balance may quickly be shifting, at least in the lab. Relying on more sophisticated biosimulators that can better mimic body conditions, researchers have re-created the delicate architecture of a rat lung accurately enough for it to assume 95% of a normal lung's inhaling and exhaling functions. The key to their respiratory success was starting with a skeletal rat-lung template, including a matrix of blood vessels and collagen and other connective tissue, then seeding it with stem cells and nutrients to generate lifelike tissue that exchanged oxygen and carbon dioxide just like normal lung tissue. The ultimate goal is to replicate the feat on a larger scale: to replace enough human lung tissue to aid patients with emphysema or lung cancer.

STUDENTS ACHIEVEMENTS

- **Monica.T, Soundarya.S, Satishkumar.K** and **Guruprakash.S** , "Antibacterial efficacy of iron-oxide nanoparticles against biofilms on different biomaterial surfaces", International Journal of Biomaterials, Sept 2014, vol 2014, pp1-6 .
- **Muthuvijay, Nandhini.T** and **Mallika Jainu** "Quantum dots based bio-conjugates in cancer treatment" -Review. Pharmanest International journal of Advances in Pharmaceutical Sciences. 2014: Vol5; Issue 5: 2295-97..

- **Pravin Kumar S, Subashini R, Ayesha Samreen, Deepthi G, Mythili S ,** "Detection of Diabetic disorders in the lower extremities: A cost effective screening device" , Biomedical Research , vol 25 and issue 4, 483 - 488 , 2014.
- **Navathej Gobi, Arun Srinivas, B Geethanjali, S Pravin Kumar,** "Computer-based Communication Aid using EEG for Paralytic Clients, Disability, CBR & Inclusive Development" Vol 25, No 2 (2014): 105-108, Summer 2014.
- **Aswin Raghav. N, Dheepashri.K and Divyalashmi.S** of final year proposed a paper on "Treatment of Post Partum Hemorrhage" for the student paper contest and was short-listed as one among the top 5 finalists to be presented at the **IEEE– Global Humanitarian Technology Conference 2014 at San Jose, California.**

EXTRA-CURRICULAR ACCOLADES

- **C.Pooja, S.Archana, P.Abinaya, Saravana Prakash, S.R. Raagavi, T.Nandini, Muthu Vijay** of IIIrd year BME have participated in "Star Innovator Workshop in Robotics conducted by IEEE and Lambda Edu labs organized by Sathyabama University on 27th and 28th of August, 2014.
- **P.A. Shilpa** participated as a member of the Theatrix team crew and stage management in Festember. She also participated in the Face painting competition orgainised at Festember conducted by NIT Trichy, on 28th of September,2014.
- **V.Loganathan, Mohammed Ikram, Namasivaya Naveen** of IIIrd year BME won 1st price in brain chase in SRM on 22-23 of September, 2014
- **Settipalli Dinesh Kumar Reddy and Saravana Prakash** of IIIrd year BME participated in forensic science workshop in SRM and also won 2nd price in brain chase in SRM on 22 -23 of September, 2014
- **S.Anupriya , Bhavana Venkat** of III year BME were the finalists for the paper presentation event held at IIT , MADRAS, by the Metallurgy and Metal Sciences department during 22-24 Augest, 2014
- **Sneha Nair** of III year BME participated in Dance competition conducted by MOP college and received **First Place. She also received first prize at Jipmer and received 2nd place in** Hip hop ecstasy (professionals).
- **Aathira H , Keerthana M and Abirami R** of IIIrd year participated in **Image processing workshop** using Scilab held at IEEE Madras Section
- **S.Hemavardhini** of IVth year - **3rd place** in solo dance competition conducted during **Intra college culturals at SSNCE**
- **Janani.R** and **Meenakshi.K** of IVth year secured 3rd place in Circuit Debugging at National level symposium INSCON-2K14 conducted by **St.Joseph's College of Engineer-**

DATRI–GIFT OF LIFE

DATRI is a non-profit organization that has been set up to help save lives of patients suffering from life threatening disorders like leukemia and lymphoma. With very few registered donors available in India, the possibility of finding a stem cell match for an Indian anywhere in the world is bleak. DATRI is working towards creating a wide and diverse database of potential donors that can be accessed by any patient, living anywhere in the world, who is in need of a stem cell transplant.

On 25-9-2014, **DATRI,** conducted the **Peripheral Blood stem cells awareness program** in the mini auditorium. More than 300 students and faculties attended this program. The session made the participants learn more about blood cancer, stem cells, PBSC transplantation, HLA typing and the working methodology of donor registries across the globe. Many outside college students also participated in this awareness session and more than 60 of them registered for the stem cell donation. The next day, 26-9-2014, the registration drive was conducted by the DATRI team at various locations inside the SSN campus and more than 500 SSN students registered for the Peripheral Blood stem cells donation. The DATRI awareness drive was organized by Department of Biomedical Engineering, YRC & NSS.

Dr. Mallika Jain was the programme facilitator.

SSN MoU with SRU

SSNBME has signed a MoU with Sri Ramachandra University at the Vice-Chancellor's chamber in SRU, Porur, Chennai. **Dr.J.S.N.Murthy**, Chairman, Vice-chancellor, SRU and **Mrs. Kala Vijayakumar**, President, SSNCE signed the MoU. **Dr.S.P.Thyagarajan**, Professor of Eminence and Dean (Research) and other eminent persons in SRU along with **Dr.P.Ramasamy**, Dean (Research), **Dr.S.Salivahanan**, Prinicipal and **Dr.A.Kavitha** HOD/BME from SSN witnessed the function. The MoU initiates collaborative research projects and exchange of academic materials, faculty and students for the purpose of study and research. The MoU will remain valid for 3 years which will facilitate mutually beneficial academic programmes.

PLACEMENT CORNER

We're glad to inform that 41 students have been placed so far in several companies that had come to our campus for the first phase of campus placement. Students have been placed in the following dream companies:

MuSigma Ltd, Bangalore.

Latent View Analytics , Chennai.

Sanjana.S	MuSigma
Srinidhi.G	MuSigma
Vaishali.R	Latent View

Over 32 students obtained multiple offers in IT companies with 4 of them bagging offers from all four mass recruiters. The mass recruiters were:

- Accenture plc
- Cognizant Technology Solutions
- Infosys Ltd
- Wipro Limited

Bhattaram Sneha	Accenture, Infosys,
Priya	Wipro, CTS
Gayathri. R.S	Accenture, Infosys, Wipro, CTS
Deepika.S	Accenture, Infosys, Wipro, CTS
Swathi.S	Accenture, Infosys, Wipro, CTS

The BEST is yet to come!

Our hearty congratulations to all of them and best of luck to those sitting for the second phase of recruitments where we expect offers from more companies.

- **Subash Raja and Sanjana.S**

WE NOW HAVE A POST GRADUATE PROGRAM!

A new post graduate programme in Medical Electronics has been established under the Department of Biomedical Engineering this year that will prove to be tremendously successful in producing graduates equipped for careers in the healthcare professions.

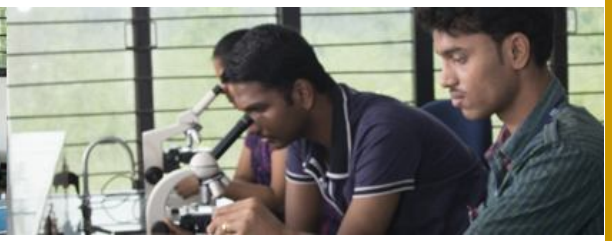
The students will learn and apply the principles of physical and engineering sciences to the practical problems of biomedicine and clinical practice. The students will:

- Gain hands-on experience in proper usage of sensors and measurement of vital physiological parameters,
- Learn in theory and practice about the various signal and imaging modalities in hospitals,
- Learn and apply basic and advanced processing techniques for biomedical signals and images,
- Learn and understand the working principles of assist devices,
- Apply the knowledge gained for research, design and development of biomedical devices

The curriculum is designed to bridge the physical and engineering sciences with biomedical science and clinical practice and broadly focuses on medical electronics, physiology, physiological measurement techniques, design and safety of biomedical instruments. The curriculum for M.E. in Medical Electronics covers the following:

Human Anatomy and Physiology, Biosignal Processing, Biomedical Instrumentation, Biomedical Equipments, Applied Medical Image Processing, Medical Imaging and Radio Therapy, Medical Informatics, Human Assist Devices, Tissue Engineering, Genetic Analysis, Biomaterials, Medical Ethics and Standards, Biomedical Optics, BioMEMS, Nanotechnology and applications, Bio Mechanics, Finite Element Analysis, Rehabilitation Engineering, Advanced Neural Computing.

This programme is committed to prepare the students for professional appointments as engineers and scientists in the field of healthcare and will enable them to make their own contribution to the maintenance and improvement of the standard of service to the patients.



BUGS BUNNY AND BIOLOGY : A "PARTIAL" INSIGHT.

Being a kid of the 90s , I vividly remember that most of my Saturday afternoons involved cozying up in a bed whilst my eyes stayed glued to Dexter mixing up some chemicals or Johnny Bravo flaunting his killer moves or maybe the Powerpuff girls fighting crime in the "city of Townsville." Cartoons fascinated me then . Cartoons fascinate me now. They constantly give my senses something to savour and relish and are magical in their own little ways . They abandon my every defence like nothing else can ever hope to .They take me to a place where everything is atleast transiently perfect . They let me (re)live every fantasy I wish to. They let me be a part of a million different lives all at once.

Honestly , I didn't realise most of this until recently. Now that I'm all grown up and hardly have any time for cartoons, I thought I would maybe reminisce a bit but I realised that I should also stay true to my newly cultivated Biomedical Engineering senses in the process . So, this article is merely an attempt to answer the one major thriving question that has lingered in my head for a while now:

"How do cartoons help kids from a biological perspective?"

1. The colours couldn't possibly be more fascinating .

As a kid , everything seems fascinating . Then again , all you have to do is give kids some straws and rubber-bands and they would praise you for being "that great mind" who was generous enough them to supply them with ...well...straws and rubberbands. That being said, nothing gets a kid's mind working like colours.

Colour perception is an excellent concept and a million different regions of the brain get working upon exposure to colour. Recent studies have also revealed that colour perception is also closely related to the linguistic perception region of the brain .

This means that kids who watch cartoons, due to radical exposure to colours turn out to be fluent in linguistics and extrapolating that concept , they probably possess extremely fluid thought processing abilities as well.

2.The story lines are ever so immaculate .

When a child watches a cartoon , it gets involved in the storyline more than you can imagine and nothing heightens imagination like letting your mind wander and soar.

A child tends to understand and grasp a lot more from cartoons than one thinks. I , for one , learnt about the existence of birds called roadrunners from 'The Road Runner Show.' The truth is that the concepts that kids learn at a very young age stay with them for a long time.

Besides that , kids anticipate, expect, wonder and revel in all kinds of mystery while watching cartoons.

"Does Slyvester ever manage to get his hands on Tweety ?"

"Is it just Daffy or do all ducks have weird voices?"

"Wonder what Jerry is going to do this time around!"

Simply put ,cartoons allow kids to explore their minds and maybe even a bit of themselves in the process. As weird as it sounds, nothing aids the process of self-discovery like some lone time where you can have sometime to think for/by yourself.

This is as healthy as it gets. Straight thinking assures you a healthy mind and hence a strong heart and consequently a longer life.

3.They let you do things that you can never do in real life. [Ergo , the prominent disclaimers at the beginning and end of every show]

Hate to break it to you but you'll never be Batman. However, you did once manage to imagine yourself in Gotham city and fight The Joker. Didn't that make you feel good about yourself much like every other time you danced around in a cape calling yourself a superhero ?

That's what cartoons do . They widen your horizons . They let you believe in the undoable and get a step closer to achieving the unthinkable .

Creative thinking can be majorly attributed to the thickness of Corpus Callosum which is the region connecting the two lobes of the brain. Thicker the region , more creative the thinker. It's quite probable that cartoons work their magic on the Corpus Callosum(as well).

Quite clearly , cartoons are one of the better things that this century has had to offer. Personally , they have helped me in more ways than I can imagine. Hopefully , I haven't been the only one . Having covered all of that , I think it is quite safe to say that cartoons enrich the human mind and open up doors to some unexplored territories. Yeah, they are quite wonderful , aren't they ?

-Tanushree

2nd year BME

HAPPINESS IS...

Have you ever wondered what happiness is all about? Every human being has found his own definition of happiness. Some say it's the contentment of oneself. Some say it's the journey of life. But everyone believes the fact that it differs from one person to another. That it is subjective. Is it really ?

When do we feel happy? A simple explanation would be when everything according to our plan. It does not mean that happiness depends on our success though. Neither does it mean that happiness goes with our failure. Happiness is simply the contentment on the levels of perfection that we have in mind. Sounds complicated? Let me break it down for you.

Happiness is perfection. There are many levels to reach perfection. Similarly there are many levels to happiness as well. Life has its crests and troughs in order to balance the equation of the universe. There are certain things in life which lifts us up and some do the inverse. When the former weighs more in the equation, we are happy.

But we all know, that nobody is perfect. Everyone has his own flaws, so does everything. Does this mean that nobody is completely happy? Well sorry for breaking your bubble, but yes! You always have room for more happiness, simply because no one is living a perfect life. We always have room for perfection as well. If there is an option for better in life, then there is an option for better in happiness as well. Happiness is relative.

A person is considered to have reached the peak of happiness when he expresses no regrets from his past or present and no expectations from his future. This stage of human life is mentioned in the Hindu scriptures as 'Sanyasam'. The life stage in pursuit of complete happiness where they are expected to renounce all earthly possessions. This way they find no reason

to be unhappy and no expectations to be more happy.

They haven't found a way to gain complete happiness by doing this but to accept the reality of life thereby ceasing their chase after complete happiness. In a materialistic world, we fight for our happiness day in and out and lose the clarity on the perspectives of our lives.

Perspective? I met with an accident recently when I was getting back from a family tour. I was bleeding profusely from my head but no one else was injured. How do you reckon I felt then? Sad that we were affected in an accident or happy that we survived it? Do I put it as a fortunate event or an unfortunate event? Perspective.

The Hindu concept of Maya can be linked with this explanation. It states that the entire world is just an illusion, a prediction made by our mind. That is exactly how science works as well. Nothing is perfect. The concepts and the derivations made in science are all predicted with the details, which we presume. We use a term 'ideal state' to define this prediction. Ideal, as in the ultimate standard of perfection. But in reality there exists no ideal state. We just make a prediction to help us further deduce the equations to evolve a concept, thus making the concept a prediction as well. Therefore perfection doesn't exist in reality.

According to this theory, I can put forth two new concepts. Ideal happiness and Ideal life. They are just predicted and can never occur in reality. So what is the point in chasing after ideal happiness? It is a term people use as an excuse to live an unsatisfied life.

So the next time you think that you are leading an infelicitous life, just be aware that no one is ideally happy in this world as well. It's just their perceptual experience on the take of life. So live yours your own way.

-Visali . M
IVth year BME

SRISHTI—AWE INSPIRING

The Technical Symposium 'SRISHTI V7.0' presented by the Association of Biomedical Engineers (ABE) was held on 8 th of September, 2014 was a grand success.

Mr.Siddarth Nair, Managing Director of "FYRSTA SOLUTIONS" graced the occasion with his presence as the chief guest. Our beloved Principal, Dr. Salivahanan and the Head of BME Department, Dr. A. Kavitha also felicitated the ceremony.

The master of ceremony for the day were Sanjana.S and Prasanna Bharathi from final year. The function commenced with a prayer song performed by Ms.Sneha, Ms.Srinidhi and Ms.Vardhini- final year students followed by lighting of the Kuthuvilaku by the respected dignitaries.

The Principal of SSN College of engineering addressed the gathering and also highlighted the points about the achievements of the Bio-Medical department. Dr.A.Kavitha, Head of the Department, quoted the awards and laurels won by that the students Biomedical Department had won during the academic year and also elaborated the future plans of the department.

Following this was a talk on the achievements of SRISHTI V6.0 by Mr.Nagasai, President of ABE who also declared the theme for this year as '**HEART: THE INCESSANT THROB'.** The dignitaries released the official SRISHTI magazine- **SAMHITA,** which portrayed the views of every budding Biomedical Engineer from SSNCE and also their artistic face. Following this, the President released the 'SRISHTI V7.0' banner. The official promotional videos received an overwhelming applause from everyone gathered. A workshop on 'Arduino' was conducted by the alumni of the department which was a huge success with many enthusiastic participants.

This year's SRISHTI witnessed an unprecedented crowd of more than 1200+ registrations for various technical and non technical events. Some new events were conducted this year like PIXEL VOXEL which tested the image processing capabilities of the participants, Battle of Breadboards, Flick the tickr, etc..,

The first prize for Quiz was bagged by students from SRM University and Thangavelu Engg College and the best paper award was given to students from St. Joseph's for their paper on " Cancer Cure by Pancreatic Enzymes Powered by Nanorobts".

Mr. Siddharth Nair who was the chief guest for the day had an interactive session with the audience on what exactly is engineering all about and why we all chose to become engineers. He shared his experiences and his story of how he founded this start-up. We had great pleasure in inviting him for our symposium and this is what he had to say about his experience at SRISHTI,

FROM THE CHIEF GUEST

"Srishti 2K14 had a blend of enthusiasm, fun and most importantly the thirst for Knowledge which is the best combination for any successful tech event. I could find the students of SSN having a great time organizing a Technological Extravaganza of this scale. I should surely not forget to mention a great hospitality and warm greetings extended by the Department of Biomedical Engineering. Really had a great time with all you guys, wishing all the students and the department very best in all their efforts!" - Mr. Siddharth Nair

IR COULD REDUCE DIABETIC AMPUTATIONS

More than 6,000 people with diabetes have leg, foot or toe amputations every year in England. More people with diabetes could be saved from the threat of foot or leg amputation if they are referred more quickly to specialist clinics for less invasive – and potentially less expensive – medical alternatives like interventional radiology (IR), according to experts.

Speaking at the CIRSE (Cardiovascular and Interventional Radiological Society of Europe) annual congress - one panel of specialists chose to focus on the huge potential of IR in transforming quality of life for people with diabetes.

Diabetes can put patients at particular risk of conditions affecting the feet (known as 'diabetic foot') causing nerve and blood vessel damage, loss of sensation and gangrene – making the condition a leading cause of lower limb amputation. In England around 6,000 people with diabetes undergo leg, foot or toe amputations annually.

But many people are now being helped through a cutting-edge medical specialty known as Interventional Radiology (IR) – where interventional radiologists use a range of imaging techniques, including X-Rays, CT and ultrasound, to guide small wires and catheters through blood vessels and other pathways in order to administer treatment. In people with diabetes it is a potentially limb-saving technique which can be used to widen and unblock arteries.

A number of experts also believe there is a strong economic case for improving foot care for people with diabetes due to the high costs associated with ulceration and amputation. CIRSE – a non-profit society dedicated to medical advancement and education – believes that IR can potentially provide a less complication prone alternative to open surgery for patients. It can mean shorter hospital stays, less risk, less pain and shorter recovery times.

In the majority of cases (nine out of ten) IR is performed using only local anaesthetic and sometimes sedation, most procedures (eight out of ten) require skin incisions of less than 5mm and eight out of ten patients even return home the same day.

Dr Cleveland showcased a range of cutting edge equipment in IR procedures including keyhole devices allowing for the arteries to be opened (and kept open) using metal stents and balloons delivering special drugs to the artery wall. Many such treatments can be offered as a day case procedure.

As well as being used in the treatment of diabetes, IR is used to treat a vast range of conditions ranging from uterine fibroids, bone tumours, lung cancer and stroke to deep vein thrombosis (DVT), hypertension, varicose veins and many more.

Ref: http://healthmanagement.org/c/imaging/news/cirse-2014-ir-could-reduce-diabetic-amputations#sthash.bgMQxh8V.dpuf

TIT BITS FOR FUTURE:

Thomso 2014, IIT Roorkee, Roorkee, Cultural Festival, Uttaranchal, October 31 - November 2 2014.

Waves 14, Birla Institute of Technology and Science Pilani BITS Goa Campus, Goa, Cultural Festival, Goa, October 31 - November 2 2014

International Conference

2nd International Conference on **Pharmaceutical and Biological Sciences** (ICPBS 2014), **San Deigo, USA**, October 29th, 2014.

International Conference on **"Stem Cell Research, Cancer Biology, Biomedical Sciences, Bioinformatics and Applied Biotechnology" , New Delhi, India,** November 1st, 2014

International Conference on **Advancements of Medical Electronics, Kalyani, India,** January 29th, 2015

EDITORIAL TEAM

mail us at:

editorial.ssnbme@gmail.com