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Editorial



Bheemsain Rao

Greetings BMESI community!!!

Indeed during this great festive season lot of meeting & greeting with the friends and relatives must have happened.

All of you must be busy Thinking / Listing of making new resolutions for the coming year 2011.

Request all the BMESI members to add to their list with at least one more new resolution that is "active participation with BMESI – engmednews" in the coming year.

Looking forward for your active participation & sharing your activities with the community in the coming issues of ENGMEDNEWS.

Nov'10 issue being the last issue in the year 2010, I wish all the readers A VERY HAPPY, HEALTHY, SUCCESSFUL life with PEACE & PROSPERITY in 2011 & Coming years ahead!!!

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DAE-BRNS Theme Meeting on Advanced Applications of Physiological Variability

AAPV-2010 was held during 28th – 29th October 2010. This meeting was unique since nearly 100 delegates including experts from allopathic, homoeopathic and ayurvedic systems of medicine from all over the country, representatives from medical instruments manufacturing industries and scientists from BARC attended it. It helped in focused discussion on the subject and preparing road map ahead, which was much appreciated by all.

BARC has been developing simple, low-cost and effective medical instruments for the past 30 years and many of them are being manufactured by private industries. The ones emphasized in this theme-meeting were: Cardiac Output Monitor, Oxygen Saturation Monitor, Non-invasive Blood Pressure Monitor, Impedance Cardio-vasograph, Medical Analyzer, Bhabhatron and Handheld Tele-ECG; which are commercially available. Mobile Based technology used in Tele-ECG for radioactive material detection in public places and tele transfer of the information to remote server are also being deployed. The topic of the theme meeting i.e. physiological variability, the highlights were on new modalities that reveal the effect of diseases and corrective therapy on the human body. The usefulness of this modality is not only in allopathy but also in ayurveda and homoeopathy.



Inauguration function was held and "Handbook on Physiological Variability" was released, this was followed by, the sessions on day I, which included principles and practices of physiological variability, its clinical applications in general and its applications in fundamental research in homoeopathy. The day was concluded with a live demonstration of peripheral pulse analyzer and Non-Invasive Cardiac Output Monitor, based on BARC technology by experts from Larsen & Toubro Ltd., Mysore and of Handheld Tele-ECG by experts from CHES Medicare Pvt. Ltd., Mumbai. Day 2 began with a panel discussion on Medical Instrumentation – Vision and Perspective. The emphasis on this discussion was on the dire need for escalating indigenous development and production of medical devices and in particular development of bedside diagnostic techniques as well as low cost mobile network based systems for rural healthcare. Some of the concerns raised during this panel discussion were:

(Continued on Page 2)

■ Non-compliance of standards in indigenously manufactured medical equipments including BP apparatus and thermometers; lack of communication; and resistance to computer technology.

■ Absence of regulatory body in medical instruments in the country that has resulted in under-rated Chinese technology invading our market which are available at a very low cost.

■ Medical professionals are treated like a service community and time spent on research by them is not accounted in duty hours. Such provisions are needed, so that they can actively contribute for R&D of medical instruments and devices.

■ Need for a national level expert panel on biomedical instrumentation and allied research.

These concerns were addressed and following remedial measures were suggested:

1. Indian manufacturers should earmark a good proportion of their earnings for R&D on Medical Instruments as well as promote aggressive marketing as commonly done by multi-national companies.
2. An expert panel comprising of experts from All India Institute of Medical Sciences, Post Graduate Institute of Medical Education & Research, Father Muller Medical College, J.J. Hospital and BARC Hospital; representatives from industries like L&T, Chess Medicare etc.; and Scientists from BARC be constituted by BRNS. This panel will specifically examine the viability of innovative indigenous technologies and their clinical usage.

This panel's word of approval will give confidence to the Indian users and it will help in promoting indigenous technology.

3. A workshop on rural health care be organized for the benefit of officers of various health ministries, so that they gain direct knowledge from experts and implement rural health program. Dr. Rajendra Agarkar, from Tata Institute of Fundamental Research, volunteered to host this workshop at TIFR.

The panel discussion was followed by two sessions one on futuristic applications and another on Physiological Variability in Ayurveda.

For further information on the above topics please contact: Dr. Rajesh Kumar Jain at rkjain@barc.gov.in

Events to look for!

↩ 3rd Bangalore Nano 2010 :: Frontiers of Nanotechnology: Impact on India

Dates: 8 to 9 December 2010

Venue: Bangalore, Karnataka, India

Bangalore Nano event is the premier event for research fraternity and industry to come together and explore emerging opportunities in Nanotechnology sector.

Organized by: MMAActiv

For Details visit: <http://bangalorenano.in/>

↩ National Conference on Nanomaterials - NCN-2010

Date: 3 to 4 December 2010

Venue: Coimbatore, Tamilnadu, India

The objective of this Conference is to bring together researchers from both academia and industry under one roof, to discuss and to share the latest developments in the field of nanotechnology.

For Details visit:

<http://www.karunya.edu/sh/physics/NCN-2010/>

↩ International Conference on Biomedical Engineering and Assistive Technologies (BEATS-2010)

Date: 17 to 19 December 2010

Venue: Jalandhar, Punjab, India

For Details visit: <http://www.beats2010.org>

↩ International Conference on Natural Products and Biomedical Technology

Dates: 10 to 12 January 2011

Venue: Chidambaram, Tamilnadu, India

The theme of the conference is 'Natural Products and Biomedical Technology'. Recent scientific research has focused on natural products and potential phytochemicals that have possible health benefits beyond traditional nutritional value.

Deadline for abstracts/proposals: 30 November 2011

For Details visit: <http://annamalaiuniversity.ac.in/>

↩ 4th International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC 2011)

Dates: 26 to 29 January 2011

Venue: Rome, Italy

For Details visit: <http://www.biostec.org>

↩ 3rd International Conference on Bioinformatics and Biomedical Technology (ICBBT 2011)

Dates: 25 to 27 March 2011

Venue: Sanya, Hainan, China

For Details visit: <http://www.icbbt.org/>

↩ Artificial Intelligence and Health Communication

Dates: 21 to 23 March 2011

Venue: Stanford, United States

For Details visit:

<http://www.uncg.edu/~nlgreen/aaai-sss11-aihc.html>

Understanding the Mechanisms of Cell Death

Health, Disease and Aging: An Online course

November 23, 2010 | 11:00 a.m. - 12:30 p.m. (EDT) | an Online Training Course

As we age more and more cells in our body enter a stage called senescence. This is a stage in which while the cell is alive and metabolizing, it can no longer reproduce. This is a one way process that leads to cell death. Many of the organs in our body renew themselves constantly and therefore cells need to die in order to leave room for new cells. Examples are our skin, uterus and GI tract. Many of the disorders that we experience are associated with either accelerated or delayed cell death.

Join us for a 90-minute introductory course as we go through the reasons and mechanisms of cell death, identification and measurement methods, related disorder and aging.

This online course is intended for professionals in the pharmaceuticals, healthcare, cosmetic and personal care or related industries that work and specialize in the following disciplines, as well as groups or companies that provide services in skin care in the fields of: Research and Development, Regulatory Affairs, Safety Assessment, Product Development and Formulations Development.

Upon completion of this training, you will be able to:

- * List the different mechanisms of cell death
- * Describe how to differentiate between them
- * Explain the end points in cytotoxicity testing
- * Outline the possible links to changes in the DNA
- * Give examples of disorders that are related to abnormalities in cell death patterns
- * Recognize key links between cell death, inflammation and aging

- Compiled by Swathi Makham

Cardiac care, a buzz away

With the rising numbers of cardiovascular cases, India will soon be the heart disease capital of the world. In such a situation, CHES (Complete Health Enhancement Support System) Medicare Pvt Ltd has ventured in to manufacturing of Handheld Tele-ECG Instrument called 'eKERNEL', developed by BARC, (BHABHA ATOMIC RESEARCH CENTRE) operated with the help of a mobile phone via Bluetooth. It records ECG of the subject and displays the same on mobile screen. After complete recording, the ECG can be sent to the expert's mobile through Multimedia Messaging Service (MMS) for his opinion. It is ideally suited for rural health care. The machine can also be operated through Laptop or Desktop in place of mobile phone in hospitals having local area network.

Vijay J Shetty, Director-Technical, CHES Medicare Pvt Ltd, says, "The concept of tele-ECG was introduced more than 30 years ago through the use of normal telephone lines. However, this application is limited to communication between

fixed locations equipped with conventional handsets. Therefore, for worldwide communication and rural healthcare, mobile cellular network like Global System for Mobile (GSM) or better third generation (3G) network is needed. Thus, the 'eKERNEL' tele-ECG was developed considering the fact that mobile phones are now available at low cost with network coverage even in the remotest areas."

The introduction of the 'eKERNEL' tele-ECG has opened up new horizons in diagnosing and deciding the right line of treatment for any cardiac ailments. It is low cost, portable, and compact and has mobile phone as well as LAN connectivity.

Acquisition, processing, visualization and storing of ECG data is possible. It works on rechargeable battery.

The 'eKERNEL' tele-ECG is ideally suited for rural healthcare. If all Primary Health Centres (PHC) in the country are equipped with this device, then transmission of ECG to district level hospitals for interpretation by an expert cardiologist would become very easy.

It also serves as home monitoring device for those suffering from chronic heart diseases. With this device, the patient can monitor his own condition, anytime and anywhere, simply at the touch of a button. Moreover, this data can be easily transmitted via a mobile or landline telephone to his/her doctor in a matter of seconds for an accurate diagnosis of the cardiac problem. Further, this unit has been upgraded for utility in hospitals with LAN connections. Hence, ECG taken can be viewed in any department of the hospital on their respective computer screens.

Discussing the future prospects of 'eKERNEL' tele-ECG, Dr. Shetty says that the tele-ECG is under test in few other countries and it will be launched in the coming months.

Telemedicine aims to make high quality healthcare available to the under privileged population. Besides, its application can also enhance wellness programs and preventive care. Therefore, the future belongs to telemedicine.

- Compiled by Aishwarya Anand

Novel Innovations in Biomedical Engineering

A two-day national level technical workshop (27th & 28th Sept.) was organized by the Dept. of Biomedical Engineering and ISTE Students Chapter, Adhiyamaan College of Engineering (Autonomous), Hosur.

240 students from various institutions, all over India participated and learnt about various aspects in the field of Biomedical Engineering. The objective of the workshop was to bring awareness for the students

regarding the advancements in Biomedical Engineering.

It included topics like: "The Engineer of 2020", "Medical Safety Aspects and Medical Safety Instruments", "Biochemistry Analyzers" and "Renal Replacement Therapy" on first day.

The second day was bloomed with "Surface Coatings for Orthopedic Applications" followed by topics like "Biochemical Analyzer & Electrolyte

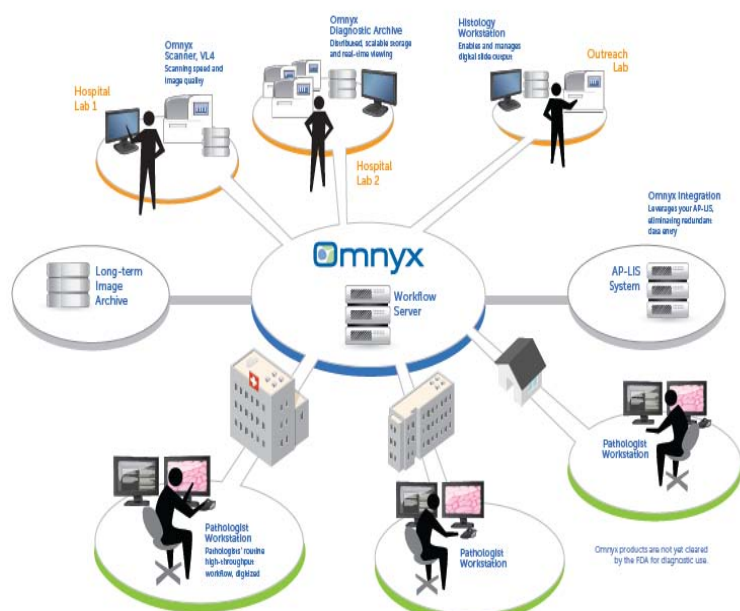
Analyzer", and "Rehabilitation Engineering".

The organizing committee includes Ms.S.Sivagowri, & Mr.M.C.Jobin Christ, Staff Co-ordinators, Ms.O.Priyadharshini, Treasurer, ISTE Students Chapter and Ms.M.Jannatul Firdous, Organizing Secretary, ISTE Students Chapter.

- Reported by M.C.JOBIN CHRIST,
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Omnyx™ : Product Info

Omnyx™ integrated digital pathology (IDP) is a joint venture of GE Healthcare and UPMC, they have developed a fully integrated and scalable digital pathology solution, which caters reliability and workflow requirements of pathologists. Omnyx™ IDP workflow integrates VL4 Scanner, Pathologist and Histology workstations to maximize efficiency of pathologists.



Source: <http://www.omnyx.com/solutions/integrated-digital->

VL4 scanner uses 'Independent Dual Sensor Scanning' technology that caters high quality images at the fastest possible output to pathologists, with benefits of excellent image quality, Scanning speed, walk away automation and reliable scanning technology.

The imaging technology focuses on every tile, resulting in high quality images that accurately capture finer details of tissue sample.

The Omnyx™ Pathologist Workstation provides a comprehensive case and workflow management with benefits like greater workflow efficiency, improved distribution of workload and enhanced communication for anytime, anywhere access. In summary this solution totally eliminates the age old procedure workflow of pathologists by digitized work flow solutions. For More information on Omnyx™ IDP workflow solutions

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We are on web!!

Logon to: <http://www.bmesi.org.in/engmed.html>

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GO GREEN!!!

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