

SYNERGY

**DEPARTMENT OF BIOMEDICAL
ENGINEERING**

QUATERLY MAGAZINE

OCT- DEC, 2013

VOLUME 2: ISSUE 4



EDITORIAL

'Synergy' is the coming together of multiple elements. This rightly represents the biomedical mix and everything that the newsletter stands for. In this last issue of ours, we keep up with the tradition of bringing to you the best of the best. This issue of the Biomedical Newsletter covers the months of October- December 2013.

To all the people (our fellow companions) on the brink of a new stage in life, we wish them luck. We thank every member of the department for all the support and encouragement and hope that our juniors continue to carry the baton forward.

Henry Ford once said, "Coming together is a beginning; keeping together is progress; working together is success." Adios!

- Senior Editorial Team

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FACULTY CORNER

PaPer Publication

- K.Vijaimohan, **Mallika Jainu**, (AP/BME) “Regulation Of Voltage-Dependent Anion Channel-1 And 78αKda Glucose-Regulated Protein By Carvedilol And Tocotreniol In Doxorubicin Mediated Cardiotoxicity”, Clinical Pharmacology in Drug Development, Oct 2013, Vol 2, Issue S1, 36-38. (IF:2.96).
- **Sivaramakrishnan Rajaraman**, (AP/BME) “Meditation Research: A Comprehensive review” International Journal of Engineering Research and Applications, Nov 2013; 3(6), pp. 109-115.
- **Pravin Kumar. S, Kavitha. A, Geethanjali. B and Mahesh. V** "Analysis Of Cognitive Load For Bilingual Subjects Based on Lexile Measures", Proceedings of 12th IEEE International Conference on Cognitive Informatics & Cognitive Computing. Nov 2013, pp 320-323.

PaPer Presentation

- E. Priya & **Dr. Mallika Jainu**, AP, presented a research paper titled “Adverse Drug Reaction Induced By hypoglycemic drug treatment In Diabetes Mellitus” in the 3rd International Science Congress, Karunya University, Coimbatore.

Project PropOsals

- **Dr. S. Guruprakash**, Asso Prof submitted a project proposal titled “Nanoparticle-to combat implant associated infections” to TNSCST for Rs. 3.41 Lakh.
- **Dr. Pravin Kumar. S**, Asso Prof and **Dr. Kavitha. A.**, Asso Prof. submitted a project proposal titled “Analysis of Plasticity during learning using EEG in normal subjects” to TNSCST for Rs. 4.78 Lakh.
- **Dr. Mallika Jainu**, AP, submitted a project proposal titled “Molecular Studies On Cytotoxic Activity Of Vitamin C In Gastric Cancer Model” to UGC for Rs. 6.00 Lakh.

Faculty activities

- **Dr. Mallika Jainu**, AP, conducted DC meeting for her Ph.D student M. Gayathri at Bharathiar University, Coimbatore on 7-11-2013.
- **Dr. Pravin Kumar**, Asso Prof, has participated in the program "Interfacing Models with Brain Signals to Investigate Cognition", at University of California Irvine and the Society for Neuroscience (SFN) Annual Meeting and Conference at San Diego from 7-11-2013 – 13-11-2013.
- **Dr. Mallika Jainu**, AP conducted Ph.D viva-voce examination for her Ph.D student Mrs. Vishnu Priya at Saveetha Medical college, Chennai on 9-11-2013.
- **Mr. P. Manoj Niranjana**, AP has attended a three day workshop on 'Artificial Neural Network (ANN) & its Applications in Pattern Recognition and Classification', conducted by Scientific Computing Solutions (SCS INDIA) at their Corporate Training Facility center, Chennai from 14-11-2013 – 16-11-2013.
- **Dr. A. Kavitha**, Asso Prof attended "Exclusive interactive workshop on values, morals and ethics" organized by The Management of Aarupadaiveedu Institute of Technology, Vinayaka Missions University and Entomology Research Institute at Loyola College, Chennai on 27-11-2013.
- **Mr. P. Manoj Niranjana**, AP has attended a certificate course on Predictive Analytics from 25-11-2013 – 29-11-2013. The course was conducted by Computer Science and Engineering Department.
- **Dr. V. Mahesh**, Asso Prof, gave lecture on 'Medical Electronics' at an FDP organized by Mechanical Department, SSNCE on 12-12-13.
- **Dr. V. Mahesh**, Asso Prof represented Dr. Sarat Chandra Memorial Inter Collegiate Staff Cricket T-20 Tournament 2013-2014 against SRMC, Chennai on 8-12-2013.
- **Dr. V. Mahesh**, Asso Prof represented Dr. Sarat Chandra Memorial Inter Collegiate Staff Cricket T-20 Tournament 2013-2014 against SRM University, Chennai on 14-12-2013.

Welcome

Mrs. L. Suganthi, joined as a Associate Prof in BME department. She completed her Bachelor's in ECE from National Engineering College, M.Tech in Communication and Networking from MIT Chennai. She submitted her Ph.D thesis on Simulation and Analysis of Peripheral Signals to Diagnose the Changes in the Human Arterial System - A Case of Takayasu's Arteritis.

She is having 3 years of teaching /microcontroller training and development experience in reputed organizations. Her areas of interests are Biomedical Instrumentation, Mathematical modeling of human physiological system, Biomedical signal & Image processing and Embedded system.



Man was not the first to harness electricity and put it to work. When we look at the human body, for example, especially the nervous system, we should conclude that the designer of the human body must have had an intricate knowledge of electronics and must have known how to harness electrical energy to change it into other forms of energy.



STUDENTS' CORNER

PAPERS PUBLISHED

- S. Madhu Bala, B. Reneta, G.S. Yuvasri, K. Sathish Kumar, **S. Guruprakash**, Asso. Prof "The effect of Gold and Iron-oxide Nanoparticles on Biofilm-forming Pathogens" ISRN Microbiology, 2013.
- E. Priya, P. Swetha, S. Sruthy, **Mallika Jainu**, (A/P) "Automated analysis of apoptotic cell death from circulating blood DNA in gastric carcinoma patient before and after the treatment of cisplatin" Proceedings of 4th International Conference on Stem Cells and Cancer (ICSCC-2013): Proliferation, Differentiation and Apoptosis, Mumbai, India. Oct 2013, pp 147-148.
- S.Ponmalar, R.Shanthini, R.C.Tharani, **M. Dhanalakshmi**, (A/P) Computer-aided diagnostic tool for the detection of macular disorder using retinal OCT images, International Journal of Advances in Computer Science and its Applications, 2013, Vol 3, No 3, pp 119-123.
- Sri Logeshwaran R, Siva Kumar P, Kuldeep S, **Pravin Kumar S**, Asso. Prof "A Novel Design of Low Cost LED Photo Therapy Equipment", International Journal of Engineering & Technology Research, Vol. 1, Issue. 2, October -December 2013.
- Sri Logeshwaran R, Saran Raj A, Kuldeep S., **Pravin Kumar S**, Asso. Prof "Solar Powered Blood Pressure Monitoring Device", International Journal of Research in Manufacturing Technology & Management, pp. 7 – 13, Vol. 1, Issue. 1, July- December 2013.

Technical events

- Bhattaram Sneha Priya, III year student presented a poster at VIT Conference on the Challenges in Biomaterial Research held on 23rd and 24th December 2013.

- R.S Gayathri, R. Prasanna Bharati, Swathi S and Deepika Sekar, III year students attended the lectures at the VIT Conference on the Challenges in Biomaterial Research held on the 23rd and 24th of December 2013.
- Aswin Raghav, Dheepashri Kannan, Divyalakshmi.S, Deepika Sekar And Aishwariya .S of the third year were among the finalists in the GE Edison Challenge December 2013 which is an exciting technical competition where the imagination, analytical skills and technical expertise of the participants will be challenged and stretched.

Internships

- Bhattaram Sneha Priya And Gayathri R.S of the third year interned at the Department of Biotechnology in CLRI, Chennai from Dec 16-12-13 to 31-12-13



- Akshaya Devi, III year interned at Apollo Hospitals and Saveetha Medical College from 23-31st Dec, 2013.



"You caught a virus from your computer and we had to erase your brain. I hope you've got a back-up copy!"

University rank Holders

Congrats!



R. Ramya

The Department of Biomedical Engineering is proud to announce that 2009-13 batch students obtained 9 Anna university ranks out of 13 eligibility rank.



S. Mythili

S.No	Name of the student	University rank
1	Ramya R	1
2	Mythili S	2
3	Lakshmi A	4
4	Rama C	5
5	Anjana Venkatesan	6
6	Swetha.S	7
7	Aishwariya priya EV	11
8	Vishnu priya K	12
9	Nidarshana RG	13

ScholarShip*Congrats!*

The Scholarship holders of the academic year June, 2012 – June, 2013 are:

2010 – 2014 Batch

Shamala G



Rasikha R



Vaishnavi R

**2011-2015 Batch**

K.Dheepashri



B. Sneha Priya



R.S. Gayathri

**2012-2016 Batch**

Nandini. T



Banu Saranya. A



Archana.S



Extra curricular

- Sanjana Sivakamar, III year was a part of the organising committee of the Farhan Akhtar Live Conert in Chennai on the 14th of December, 2013 as an ambassador for Ayamara, an event management company.
- Srinidhi, G. III year won the 2nd place in the Indian Fine Arts competition for singing held on the 31st of Decmeber, 2013.
- Aishwariya. S of the third year was a finalist in the Campus Jive Group dance event conducted by The Hindu on the 7th of Decmeber 2013.
- Shilpa P. A of second year won consolation prize in t-shirt designing event, Saarang 2k14 – IITM.
- Sneha Nair, a second year student and her dance team got qualified for the finals of group dance event, Saarang 2k14-IITM.

Placements

Zifo Technologies is a **Specialised Research Data Management Service provider**. Zifo provides specialised services in **Clinical Data Solutions, Discovery & Lab Informatics and Technology Services for regulated environment**.

Final year students

- Bhavani J.
- Eswari. R
- LavanyaJagannathan
- Sanjay Romero D'Sami



Teach For India (TFI) is an Indian non-profit organization, which is a part of the [Teach For All](#) global movement. Through its Fellowship program, TFI recruits

qualified Indian college graduates and working professionals to serve as full-time teachers in low-income schools for two years.

Final year students

- Rajashree J
- Sasikala T



Indian Medical Institutions & Hospitals giving internship for students

The Medical Council of India (MCI) is a statutory body with the responsibility of establishing and maintaining high standards of medical education and recognition of medical qualifications in India. MCI announced the list of Medical Institutions giving internship for Biomedical Engineers. It registers the internship holders to practice in India, in order to protect and promote the health and safety of the public by ensuring proper standards in the practice of medicine.

1. Christian Medical College & Hospital, Vellore.
2. Medical College & Hospital, Pondicherry.
3. Madras Medical College & General Hospital, Madras.
4. Government Hospital for Women & Children, Madras.
5. Govt. Ophth. Hospital, Madras.
6. Govt. Stanley Medical College & Hospital, Madras.
7. Railway Hospital, Perambur, Tamil Nadu.
8. Neyveli Lignite Corporation, General Hospital, Neyveli.
9. E.S.I. Hospital, Ayanavaram, Madras.
10. Sundram Medical Foundation, Chennai.
11. MIOT Hospital, Mount Poonamallee Road, Manapakkam, Chennai-600089.
12. Apollo Hospital, 21, Greams Lane, Madras-600006.
13. Malar Hospital Limited, No. 52, Ist main Road, Gandhi Nagar Adyar, Chennai-20.
14. Indira Gandhi Govt. General, Hospital & Postgraduate Institute, Pondicherry.

STOP THE DUPLICATE MEDICAL IMAGES!

There's too much time and distance involved in sharing medical images today, says the team of physicians and computer scientists. Instead of patients carrying CDs or printouts of ultrasounds, MRIs, PET scans, mammograms and other diagnostic images from doctor to doctor, **MyMedImage** wants to enable them to manage, share and store their own images — and to do it for free.



MyMedImage circumvents the interoperability of hospital systems' EMR and picture archiving and communications systems. It's a DICOM-compliant, cloud-based service designed to let patients and providers upload, archive, transmit, download and transmit images.

The lack of sharing of diagnostic images between healthcare systems hinders communication between patients and doctors, and sometimes even delays care decisions because images have to be re-taken, or transported physically via CD. MyMedImage is positioning itself as a people-focused solution to a medical-business-created problem. "A lot of systems charge millions of dollars for picture archiving and communications systems – do they truly want them to be interoperable?" The standardized DICOM data and stripping all of the vendor-specific data to make it available to any kind of software were designed"

The vision is that a patient could obtain a CD of their image, upload it to **MyMedImage** and push a button to export to whatever imaging facility or hospital system they wish. Then, the appropriate providers could access patients' images on a computer or mobile device, potentially preventing duplicate medical images. By serving as a telemedicine tool, the company thinks it could also enable specialized care to underserved areas of the world.

www.mymedimage.com

CREATING A NEW DRUG DELIVERY SYSTEM USING GRAPEJUICE

A new study, funded in part by NCCAM, has found promise in using tiny particles from grapefruit juice to make micro-capsules that can safely deliver drugs and biologic agents to the body. The study, which was conducted in cell cultures and in mice, used nanotechnology, a cutting-edge field of research in which technologies and products are developed from materials roughly under 100 nanometers in size (a nanometer is a billionth of a meter, so 100 nanometers is one ten-millionth of a meter).



The research team wanted to examine whether tiny vectors (carriers) could be made from edible, nontoxic plants and would pose fewer issues than vectors from mammalian or artificial sources. They analyzed three fruits and found that grapefruit offered the most lipid nanoparticles for making vectors. From these, they assembled novel “grapefruit-derived nanovectors” (GNVs) and tested them in the laboratory in various cell types. The GNVs were taken up by target cells efficiently and readily, were stable, and could deliver a broad range of anti-cancer agents.

They observed that the GNV-agent combinations had long staying power in the body, created no signs of adverse effects or toxicity, and, in a combination with the chemotherapy drug JSI-124, reduced tumor growth and increased mouse survival.

The authors concluded that their GNV approach appears effective and safe (even potentially for pregnant women), although it needs further testing. In addition to safety, the advantages appear to include relative simplicity and low cost; the ability to be modified or customized (for example, according to desired targets and therapeutic needs); and application to many agents and diseases.

Copyrights: <http://nccam.nih.gov/research/results/spotlight/061413>

FORTHCOMING EVENTS

- Workshop on LabVIEW and Its Applications, 14 &15, February, 2014.
- National Conference on Bioelectronics, Biomaterials & Medical Devices – March, 21, 2014.



Abstract Deadline: 28 February, 2014

Registration Deadline: 07 March, 2014

A number of Student Travel Fellowships available

Contact info: ncbbm2014@ssn.edu.in

Themes include but not limited to:

- ❖ Medical Electronics
- ❖ Bio Signal and Image Processing
- ❖ Artificial organs
- ❖ Biomaterials and Tissue engineering
- ❖ Medical devices
- ❖ Bio nanomaterials
- ❖ Biomechanics

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