

SPARK

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Exosomes to the rescue!

New research shows that naturally occurring nanoparticles called exosomes can be coated with an antibody to deliver therapeutic miRNA to targeted cells.

Using a novel form of immune-genetic therapy, researchers from Yale School of Medicine and the Jagiellonian University College of Medicine in Poland have successfully inhibited a strong immune allergic inflammatory response in the skin of mice. The delivery system consists of naturally occurring nanoparticles called exosomes that are about one thousandth the size of donor cells that release them. Scientists have shown that there are billions of exosomes in the circulation and that they carry genetic instructions in the form of micro-RNAs (miRNA) to regulate the functions of nearby and distant cells. They found that exosomes could be coated with an antibody of their choosing. These nanovesicles were able to deliver therapeutic miRNA to specific cells targeted by the antibody. In the current study, the coated exosomes delivered their miRNA cargo to immune system cells, inhibiting an active allergic disease response in the skin of mice.



Source: Yale University News

Papers Published



❖ **Dr. P. Senthil Kumar** receives top cited article for the years of 2010 and 2011 for the article "Adsorption of dye from aqueous solution by cashew nut shell: Studies on equilibrium isotherm kinetics and thermodynamics of interactions" published in Desalination.

❖ Dr. P. Senthil Kumar, Associate Professor along with the passed out B.Tech. Chemical Engineering students Ms. K. Sangita Gayatri, Mr. S. Shahul Hameed, Ms. Sindhuja and Mr. C. Prabhakaran published a paper titled "Removal and recovery of Ni (II) ions from synthetic wastewater using surface modified strychnos potarorum seeds: experimental optimization and mechanism" in an International Journal "Desalination and Water Treatment" DOI: 10.1080/19443994.2013.837008, 2013 (IF: 0.852)



❖ **Dr. P. Senthil Kumar, Dr. K. Ramakrishnan, Ms. R. Sivaranjinee, Ms. U. Vinodhini, Ms. M. Ragavi and Mr. K. Rajasekar** published a paper on "Adsorption of dye into raw and surface modified tamarind seeds: isotherms, process design, kinetics and mechanism" in Desalination and Water Technology journal on 30.05.2013.

❖ **Dr. R. Saravanathamizhan**, Associate Professor published a paper titled "Studies on various mode of *Electrochemical reactor operations for the treatment of distillery effluent*" in the Journal of Environmental Chemical Engineering on 22.07.2013

It's official now!! CHEMICZNA 2k13!!

On the 30th of July, The Association of Chemical Engineers (ACE) inaugural function was held. The ACE ties up various colleges with chemical engineering departments and maintains a healthy relationship among them. The inaugural function marks the beginning of Chemical Events like Symposiums, Workshops and Conferences.

The most important and most looked-forward-to though, is CHEMICZNA 2k13, our very own Technical Symposium. The inauguration was graced by the presence of **Mr. Rajiv Moorthy**, Business Head, Murugappa Morgan Thermal Ceramics Ltd. (MMTCL), Dare House, Parry Building, NSC Bose Road, Chennai.



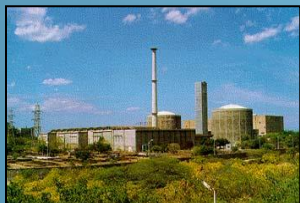
The chief guest gave the inaugural address which was centered on the present generation of engineers and the scope for chemical engineers. Far from being a purely technical talk, his address was about changes that the world has seen and the role of us, students as engineers, in it. The official website for Chemiczna was launched too. Overall, it was a day filled with hue (thanks to all the fourth year girls in their dashing sarees and guys in striking formals) and fun.



***Countdown for Chemiczna
2k13 and the industrial
visit that follows begins!!!***

Interning, training...Oh Yes, we worked!

Preethi.R did her inplant training at **CPCL PANAGUDI** from June 3 to June 17, 2013.



Abishek S. did his IPT at **MADRAS ATOMIC POWER STATION** from June 3 to June 15, 2013.

Pritham A. worked in the **GLOBAL DEVELOPMENT DEPARTMENT, URS, LONDON** from June 3 to June 21, 2013. During his stay, he worked on projects involving oil and gas, mining, etc.



Saranya Balu worked at **ACC LTD, COIMBATORE** for 5 days in the 1st week of June, 2013.

Eswar Subramanian did his in plant training at **ENGLISH INDIAN CLAYS LIMITED, TRIVANDRAM** from June 1 to June 22, 2013.



Vandana G did her in plant training in the solvent recovery plant and ETP plants at **ORCHIDS CHEMICALS PRIVATE LTD. ALATHUR PLANT** from June 21 to 28, 2013.

Poornima M, Shreya, Akshita G, Cheshta P, Vandana G and Vaishali G did their in-plant training at **HUNTSMAN CORPORATION-PETRO ARALDITE** from June 10 to 13th, 2013.





At the Huntsman Corporation-Petro Araldite plant.

**At ACC Cements.
The Floatation Tank.**



At Hindustan Oil Exploration Company

At Madras Fertilizers Limited.





Prabhu B, Bharath Kumar I, Nandhini V and Namratha N did their in plant training at **CPCL, MANALI** from June 10th to 14th, 2013.

B. Priyadarshini did her internship at **LARSEN & TOUBRO, CHENNAI** in the water, waste water and industrial water treatment department from June 21st to 29th, 2013.



Srivatsan M., Surendiran R., Tejaswini T.J., Varshini V. and Subhashni K., did their in plant training at **HINDUSTAN OIL EXPLORATION COMPANY** from June 17 to 21, 2013. Oil and natural gas exploration and production is the primary operation of the company.

N. Namratha and P. V. Monica did their in-plant training at **ONGC Ltd** from June 17 to 28, 2013.




Subrejha J, Devi Baghya T, Suchithra B and Nandhini V did their in-plant training at **Madras Fertilizers Limited, Manali** from June 17 to June 21, 2013.

Irfana Begum and Dhivya.A did their inplant training at **Cetex Petrochemicals Ltd, Manali** from June 17 to June 28, 2013.



Faculty Activities

- **Mrs. R. Pushpalata**, Associate Professor attended workshop on “Visioning SSN Institutions” conducted by Shri R. Ravishankar, Lead performance consultant, HCL Technologies Ltd. on 8.05.2013
 - **Dr.K. P. Gopinath**, Associate Professor attended third IChE-CRC lecture meet. The lecture was delivered by Mr. A. Lakshmanaswamy, CEO, Hydrosoil Engineering Consultants, Anna Nagar, Chennai on Ground Water Exploration, Extraction, Recharge and Management on 25.05.2013.
 - **Dr.P.Senthil Kumar**, Associate Professor, conducted a program on Hands-on Training on usage of Atomic Absorption Spectrometer on 07.06.2013
 - **Dr. K. Sathish Kumar (GUIDE)** conducted 1st Doctoral committee to his two Ph. D. scholars on 17.6.13 and 3.8.13. External members, Dr. Dharmendra Kumar from Anna University and Dr. Dilip Kumar Chand from IITM attended the doctoral meeting.
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- **Dr. K. P. Gopinath**, Associate Professor attended the Eleventh Meeting of the Executive Committee of IChE-CRC held at CLRI (Department of Chemical Engineering, Chennai 600020).
 - **Dr. P. Senthil Kumar**, Associate Professor attended two days workshop on “Application of Chemical Engineering Principles in Biotechnology at NIT Trichy on 28th and 29th June, 2013.
 - **Shri. A. Seenivasan**, Assistant Professor communicated two technical papers to Applied Microbiology and Biotechnology and Open Biotechnology Journal
 - **Dr. P. Senthil Kumar** and **Dr. B. Ashraf Ali**, Associate Professors attended the faculty development programme on “Recent Research Trends in Chemical and Environmental Engineering” at NIT, Calicut, Kerala.

- **Mr. P. Shekar**, Full Time Research Scholar, Chemical Engineering Department, SSNCE presented a research seminar on “Isolation and Characterisation of Bioactive Metabolite from Actinobacteria effective against Multi Drug Resistance Pathogens” on 29.05.2013
- **Dr. B. Ashraf Ali**, Associate professor resigned the job and joined at NITK, Surathkal.
- **Dr.P. Senthil Kumar(GUIDE)** and external member Dr. Sundararaman, Professor from Rajalakshmi Engineering College were present for 1st Doctoral meeting for three candidates Mrs.Shivaranjini (Fulltime), Mr.Shivakumar (Part Time) and Mr. G. Manikandan (Part Time) on 06.07.2013



- **Dr.V.E.Annamalai**, Professor and Head, Mechanical Engineering delivered a lecture on “Patent Filling” to faculty and students of Chemical Engineering Department on 20.07.2013

- **Dr. K. P. Gopinath**, Associate Professor attended the fifth IChE-CRC lecture meet at the office of the IChE-CRC, Chennai on 27.07.2013
- The faculty and students of Chemical Engineering department is delighted to welcome two new faculty: **Dr. K. P. Gopinath** and **Dr. R. Saravanathamizhan**.



Student Activities

- On 13.06.2013, III year and IV year students attended a workshop program on *Industrial Safety* conducted by IChE, Chennai.
- On 13th and 14th June, 2013, **Lalithkumar S** of III year attended two days seminar on *Occupational Hazards in Process Industries Safety in Design and Operation* conducted by The Institution of Engineers, Chennai.
- On 22.06.2013, the III year students **Lalithkumar S** and **Bharath Kumar** attended a lecture on *Innovation and Creativity* conducted by IChE-CRC.
- On 18.07.2013, Chemical Engineering Alumni Students(passed out 2012) **Ms.Priyadharshini**, **Ms.Smurthi Karthikeyan** and **Ms.Nirupama Ragavan** visited the department and exchanged their views on higher studies and work experience with our HOD and Faculty members of the department
- On 27.07.2013, III year student **Lalith Kumar** attended the lecture on “*Global Purchase Scheme of Caterpillar Company*” delivered by **Mr. Narasimmaswamy** of Indian Institute of Chemical Engineers (IChE).

The Editorial

Team

Students

Pradeep P

B Priyadarshini

Suchithra B

Poornima M

Cheshta P

Faculty

Dr. K. Ramakrishnan
(HOD)

Shri. A. Seenivasan

DID YOU KNOW???

The longest word has **189,819 letters** and takes **three hours** to pronounce.

'Methionylthreonylthreonylglutaminylarginyl.....isoleucine' is the chemical name of '**titin**' (also known as 'connectin') - the largest known protein.



*Pun*ny chemists say...

- A freshman chemistry student prepared a standard solution and showed it to her professor. The professor gave her a puzzled look, and said: This solution looks a bit WEIRD. Are you sure you used the right set of reagents? The student replied: Absolutely. According to my calculations, this is one NORMAL solution.
- Why are chemists great at solving problems??

Simple, they have all the solutions!