



NANOSOLDER FOR SAFER SURGERY

When surgeons operate on the gastrointestinal tract, they have to carefully close up all their incisions to prevent the spread of gut bacteria that can cause life-threatening infections. To provide a safer alternative to stitches and staples for the bowel, researchers have developed nanocomposite materials that act like surgical solder. When hit with laser light, the materials help weld together pieces of tissue.

For some operations such as eye surgery, doctors already use laser light to join up pieces of tissue. The light rapidly heats up the tissue, causing proteins on each piece to denature and fuse. But surgeons are reluctant to use this technique in colorectal operations for patients with cancer or inflammatory bowel disease because the consequences of an improper seal in this part of the body are quite dire. The seal not only has to be strong and tight, like in metal welding, but also it must match the elasticity of the surrounding tissues.

Rege's solder is made up of gold nanorods mixed with peptides. The nanorods have optical properties that help convert light from a near-infrared laser into heat. The protein fragments denature when heated up, providing extra material to help seal up a surgical site.

-CEN magazine.

In and around the department:

- **Video Conference with Professor Farrokh Mistree**, L a Comp. Chair and Director, School of Aerospace and Mechanical Engineering, University of Oklahoma, United States of America delivered a talk on *“Educating the 21st century Indian Engineer for a career in a culturally diverse, wired and interconnected engineering world”*, arranged by Shri. A.Seenivasan on 14.03.13.



➤ **I- Cell activities:**

- On 09.04.13, **Suchithra B** of II year gave an I-cell lecture on *“Gold and iron oxide nanoparticle based ethyl cellulose nanocapsules for cisplatin drug delivery”*.
- On 11.04.13, **Vandana G** of II year presented a seminar on *“Pyrolysis of Plastics”*.

Faculty achievements



Dr.Gnanaprakash, Associate Professor received Ph.D degree in the convocation at Anna University, Chennai on 08.03.13.

Student achievements:

- ❖ **Shreyas Padmanaban** of IV year was awarded BEST OUTGOING STUDENT of Chemical Engineering Department for the year 2012-13.
- ❖ Many students won awards for academic excellence in the **COLLEGE DAY** function held on 18-04-2013, details of which are given in forthcoming pages.

Student Activities

- On 01.03.2013, **Sai Deepthi** and **Bharani R** of III year presented a research paper on "*Mathematical modeling in Adsorption studies*" and received FIRST prize from Krishna College of Engineering, Coimbatore.
- On 01.03.2013, **Nandhini.V** and **Suchithra.B** of II year participated in **Chemfluence** at Anna University and received FIRST in poster presentation and SECOND in Wall-To-Wall-Streets competition.
- **B.Priyadarshini** and **R.Gayathri** of II year won FIRST place in paper presentation for their paper on "*Preparation of Copper Sulphate nanoparticles from aqueous solutions*" in **Chemfluence** conducted by **ACTech, Anna University** on 01.03.2013.
- On 01.03.13, **Sai Madhusudanan** and **Pradeep Panneerselvam** of II year won the SECOND prize in Poster Presentation in **Chemfluence** organized by **ACTech, Anna University**.
- On 08.03.2013 **Ganesh Karthik**, **Sharath Rajulu** of III year attended **Aspen** Software workshop conducted by Anna University, Chennai.
- **Sai Deepthi** and **Bharani R** of III year presented a research paper on "*Adsorption of metal ions onto the surface modified agricultural wastes*" and received FIRST prize from **Sathyabama University**, Chennai on 22.03.2013
- On 04.03.2013, **Suchithra B** and **Nandhini.V** of II Year presented a paper on "*Gold and Iron oxide nanoparticle based ethyl cellulose nanocapsules for cisplatin drug delivery*" at **Satyabama University** and won the First place.
- On 11.03.2013, **S.Janani**, **Sangeetha Priyadarshini.R** and **Raghavi.M** attended a conference and presented paper on "*Optimization of protein extraction from Moringa seeds using response surface methodology and treatment of turbidity of water*" at IIT, Mumbai.

Papers Published

- ❖ **Dr. P.Senthil Kumar** (associate professor), **Ms. Sai Deepti ASL**, **Ms. Bharani R** of III year and **Mr. Prabhakaran C** of II year published a paper on “*Adsorption of Cu(II), Cd(II) and Ni(II) ions from aqueous solution by unmodified streyclus potatorum seeds*” in the journal, “European Journal of Environmental and Civil Engineering”.(IF:0.332)
- ❖ **Dr. K Ramakrishnan** (HOD), **Dr. P Senthil Kumar** (associate professor), **Mr. Rajasekar K** (lab assistant), **Ms. Sivaranjinee**, **Ms. U Vinothini** and **Raghavi M** of III year chemical engineering published a paper on “*Adsorption of Dye onto Raw and surface modified Tamarind seeds: Isotherm, process designs, kinetics and mechanism*” in the journal, Desalination and Water Treatment. (IF: 0.662).
- ❖ **Dr. B.Ashraf Ali** (Associate Professor) published a paper on “*Numerical analysis of hydrodynamics and crystal motion in a batch crystallizer*” in the journal, Journal of Crystal Growth.

COLLEGE DAY FUNCTION AWARDEES

<u>SEMESTER</u>	<u>FIRST RANK</u>	<u>SECOND RANK</u>
First Semester	Vandana.G	Cheshta Varma.P
Second Semester	Nandhini.V	B.Priyadarshini
Third Semester	Sai Deepthi.ASL	Deepika.N
Fourth Semester	Sharath Rajulu BE	Vinothini.U
Fifth Semester	Suriya.S	Shahul Hameed.S
Sixth Semester	Shahul Hameed.S	Pradyumna.K
Seventh Semester	Shahul Hameed.S	Pradyumna.K

The Department of Chemical Engineering congratulates the students for their achievements.



Faculty Activities

- Head of Department, **Dr. Ramakrishnan** attended *Green Technology workshop* organized by **Confederation of Indian Industries Group** on 06.03.13 at Park Sheraton, Chennai.
- On 07.03.13, **Shri Seenivasan**, Assistant professor and **Shri Swaminathan** of III Year attended the meeting of **IICHe Centre**, Adyar and interacted with the members.
- On 22.03.2013, Dr. **D Gnana Prakash**, associate professor, attended a seminar on “*Trends on Water Management*” organized by **A.C Tech**, Anna University, Chennai.
- On 30.03.2013, **Dr. P Senthil Kumar**, associate professor, delivered key note address in International conference on “*Application of Green Technology in Engineering and Applied Sciences*” organized by **Adhiparasakthi College of Engineering**.
- On 25-03-13, **Shri.A.Seenivasan**, Assistant Professor attended **IICHe** special executive committee meeting and participated in discussion.
- **Dr.M.Subramanian**, Associate Professor prepared **Peer Review** (Part III) document for Chemical Engineering Department.
- **Shri A.Seenivasan** attended workshop on “Trends in Reaction and Environmental Engineering” (TREE-2013) organized by Department of Chemical Engineering, IIT Madras.
- On 04-04-13, **Dr. Subramanian**, Associate Professor with Dr. **K.S. Jayakumar**, Associate Professor, Mechanical Engineering Department presented **Energy Auditing** at Evaluation meeting in New Delhi.
- Mrs. **R. Pushpalatha**, Assolciate Professor & Mrs. **B. Chitra**, Assistant Professor attended two days workshop on **Research Methology** and **LATEX** conducted by Department of Mathematics, SSNCE on the dates 19-04-13 and 20-04-13.



Innovations staged...

On 17.04.13, a **Project Exhibition** was held in the department of Chemical Engineering, organized by the Head of Department, **Dr.Ramakrishnan** and associate professor, **Shri.A.Seenivasan**.

The projects of IV year students were exhibited and the following projects were awarded.

FIRST place: *Comparative Study of different laccases coupled with metal nano particles for Dye Degradation.*

-Navin Kishore B, Varsha P, Shreyas Venkat Padmanabhan.



SECOND place: *Conversion of WASTE PLASTIC into FUEL OIL.*

-Bharathi Kumar, Immanuvel J, H.Ethiraj.



SECOND place: *Utilization of Algal Biomass.*

-Pavithra Jayaprakash, Ramesh.M, Suriya.S.



THIRD place: *THERMAL MANAGEMENT in fuel cells-Design of blowers to reduce the air temperature to the fuel stacks*

-Arun Raj.C, Shiva Shankar.B, Pradyumna K.



The judge **Shri.Chellapandi Duraipandi** was impressed with the projects and mentioned that they were competitive and novel.

Oh, It's not just work. Its play too!!!

- Nilesh Subramanian of II year and V.Adithya of III year won the MGR Sathyabama Trophy in Sathyabama University which lasted for a month.
- Nilesh Subramanian won THIRD place in the Hindustan Trophy during the first week of April.
- Vignesh P.R of II year won FIRST place in the ball badminton event representing the II years for the sports day.



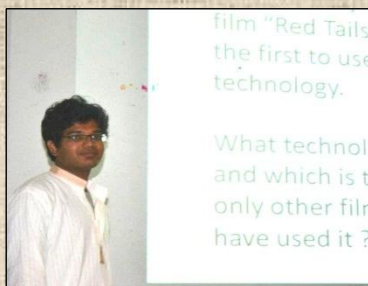
- Rakkesh of III year received the National Squash award.
- Nivedha of III year won SECOND place in interzonals and THIRD place in ties in Tennis and Rakesh won the FIRST place in Squash.



- Dr. Senthil Kumar, Associate Professor received prize for RUNNER UP in cricket in staff sport event.

BEYOND THE BOOKS!!!

- **Sai Madhusudanan** of II year won the **FIRST** place in **Shipwreck** and **SECOND** place in **Movie Quiz** in Mitafest , MIT cultural fest organized by MIT,Chennai.
- **Shreyas Padmanabhan** of IV year was the **President** of the SSN Quiz Club this academic year. He conducted various quizzes during the cultural event of SSN, **INSTINCTS 2k13**.
- **Sangita Gayatri K** of IV Year was the Documentation Head and **Navin Kishore B** of IV Year was the Treasurer to organize "**Instincts 2k13**", the annual cultural fiesta of SSN College of Engineering. They were awarded for the same on College Day.
- **A.R.Sankaranarayanan** of II year hosted the **SpEnt** quiz in **INSTINCTS 2k13**.
- Ms. **Nivedita** and Mr. **Karthick** of III year, participated in "Dramatics" event competition and won **FIRST** prize (Rs.10K) conducted by **Sastra University**, Thanjavur.



Editorial **team**

Students:

IV YEAR

Pavithra J

II YEAR

B.Priyadarshini

G.Vandana

Cheshta.P

Faculty:

Dr. K. Ramakrishnan
(HOD)

Shri.A.Seenivasan

