



August 2009

Biotech News

- Material scientists characterize chemical interactions that enable surgical glues to stick well to some tissues and not to others, forcing doctors to compromise between adhesion strength and tissue reaction. Varying the adhesive's reactive groups can match the respective reactive groups on the different tissues to regulate tissue-material interaction. <http://web.mit.edu/newsoffice/2009/glue-0709.html>
- Biomedical engineers demonstrate how cancerous and non-cancerous neighbor cells share similar structural abnormalities on a nanoscale level using Partial Wave Spectroscopy (PWS) that can detect features as small as 20 nanometers. Additionally, abnormalities found in the nanoarchitecture of colon cells are the same as those observed in pancreas and lung cells. <http://www.northwestern.edu/newscenter/stories/2009/06/nanosignals.html>
- Stem cell scientists discover earliest master human heart stem cell from human embryonic stem cells in regions of the heart known as hot spots for congenital heart disease. The study provides a new way of understanding heart disease as it appears in children and in adults, and might be able to influence the treatment of congenital heart disease significantly. <http://www.harvardscience.harvard.edu/foundations/articles/human-cardiac-master-stem-cells-identified>
- Team led by AICHE member Blake Simmons at Sandia National Labs develops a new technique based on the natural auto-fluorescence of plant cell walls to visualize how Ionic liquids (salts that are liquids at room temperature) can dissolve lignocelluloses and help hydrolyze them into sugars for a potentially more efficient conversion into bio-fuels. <http://newscenter.lbl.gov/feature-stories/2009/07/08/fuels-from-biomass-ionic-liquids/>
- Modularity is a highly sought after feature in bioengineering. Chaitan Khosla, an AICHE member, helps us understand modular biocatalysts such as polyketide synthases (PKSs) in the August issue of the AICHE Journal. <http://www3.interscience.wiley.com/journal/107061889/home?CRETRY=1&SRETRY=0>
- Today's biological engineers face difficult challenges and exciting opportunities when it comes to biopharmaceutical development. Three great articles have just been published in the July edition of CEP Magazine focusing on several new technologies that are poised to reshape the biopharmaceutical manufacturing paradigm.
 - Exploring New Paradigms for Bioprocessing
 - The New Disposable Evolution
 - Disposable vs. Traditional Equipment-A facility – wide Viewhttp://www.aiche.org/SBE/MemberCenter/members_publications.aspx
 *SBE members have free access, join today!

Society News

Join us for the August SBE webinar on **Industrial Systems Biology** presented by Professor Jens Nielsen of the Department of Chemical and Biological Engineering at Chalmers University in Gotenburg, Sweden. Professor Nielsen will present how cells are used as factories to produce many specific molecules used as pharmaceuticals, fine chemicals, fuels, materials and food ingredients. The webinar will be on **August 25, 2009 from 2-3pm EDT**.

Check out the SBE webinar page for more information: <http://www.aiche.org/SBE/Education/SBEwebinars.aspx>

Register now! The **2009 AIChE Annual Meeting** will take place in Nashville, TN from November 8-13. The AIChE Annual Meeting is a leading educational forum for chemical engineers interested in innovation and professional growth. [Click here to learn more](#).

Special SBE Events include:

- **SBE's Biofuels Symposium: Transportation Fuels from Coal and Biomass: Review of an NRC Report- Monday, November 9th from 3:15-5:45.** This session will explore the technological status, costs, and environmental impacts of coal and biomass conversion.
- The **SBE James E. Bailey Award Lecture** will take place on **Tuesday, November 10th from 6:30-7:30 EST**.
- The **SBE Hospitality Suite** will take place on the same evening as the award reception, at 9-11pm. We hope to see you there!
- Due to popular demand, SBE will once again offer its **Biology for Chemical Engineers course**, designed for professionals who would like to learn more about biotechnology in medicine. Learn more at: <http://www.aiche.org/conferences/09annual/shortcourses.aspx>

AIChE in the News! Dr. Cato T. Laurencin, an AIChE member, was selected to receive a prestigious **Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring** by President Obama. The award is presented to individuals who recognize the crucial role that mentoring plays in the academic and personal development of students studying science or engineering. To read the complete press release, [click here](#).

Recently **ASME and IEEE partnered with NSF and Discover magazine** to hold a series of roundtable discussions to discuss a variety of energy issues. Start off by listening to George Huber, an AIChE member, as he discusses the potential of cellulosic biofuels.

- **Biofuels**, June 18th, 2009
- **Energy Storage**, July 16th 2009
- **Energy Efficiency**, September 17th, 2009
- **Emerging Technologies**, October 15th, 2009

For more information, visit <http://discovermagazine.com/events/road-to-new-energy-economy>.

It's not too late! Attend the **Foundations of Systems Biology in Engineering Conference (FOSBE 2009)** which will be held in Denver, Colorado, **August 9-12, 2009**. More info about FOSBE 2009 can be found at: www.fosbe.org.

Attend the **American Institute for Medical and Biological Engineering's Council of Societies 4th Annual Federal Symposium on September 14-15, 2009** in Washington. As a member of SBE, you can participate in this symposium organized by AIMBE to meet face-to-face with members of Congress and their staff and raise awareness of the long-term value of medical and biological engineering. To register, contact Benjamin Corb, AIMBE's Director of Public policy at bcorb@aimbe.org.

Save the date for SBE's 2nd International **Conference on Stem Cell Engineering** at the Hyatt Harborside Hotel in Boston, MA from **May 2-5, 2010**, co-chaired by Peter Zandstra, University of Toronto and George Daley, Children's Hospital, Harvard Medical School. This Gordon-style conference will emphasize how efforts in stem cell biology and engineering can combine to aid in the development of stem cell therapeutics and bioprocesses. To see a complete list of our invited speakers, check out the [conference website](#).

Join Now

Not a current SBE member? It's never too late to join or renew. Costs are \$75 for regular members, \$25 for graduate students, \$10 for AIChE, ACS and IBE members, or free for undergraduates. Join now at <http://www.aiche.org/apps/ecommerce/bio/index.asp>.

Member benefits include:

- Subscription to SBE's semi-annual BioSupplement to Chemical Engineering Progress.
- Discounts on leading biological engineering conferences including SBE and SBE cosponsored meetings and courses.
- Access to online membership directory.
- A voice in education, employment and technology advancement topics.

Comments?

SBE's *e-Connections* is edited by Adrian Andrew Fay, Web Science Editor, with input from SBE staff. Contact us at bio@aiiche.org

*The Society for Biological Engineering (SBE) is a new technological community of AIChE
Its mission is to promote the integration of biology with engineering and realize its benefits
through bioprocessing, biomedical, and biomolecular applications.
For comments and contributions to SBE Connections, email bio@aiiche.org*

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