

## CAPD e-Newsletter, October 2008

<http://capd.cheme.cmu.edu>

Dear CAPD member,

Welcome to the CAPD e-Newsletter!

We hope this newsletter will have information that is of interest to you.

Best regards, Ignacio Grossmann

- The CAPD Newsletters can now be accessed through the webpage <http://capd.cheme.cmu.edu/newsletters.html>. All registered users of CAPD can access these by using their email addresses as userid and password. We also welcome any suggestions you may have for our webpage <http://capd.cheme.cmu.edu>.

- Please take note that the next Annual Review Meeting will take place on March 9-10, 2009. This will be followed by the meeting of the special group on Enterprise-wide Optimization on March 11.

- As an experiment we will offer our new CAPD short course immediately following the CAPD Annual Meeting: <http://capd.cheme.cmu.edu/shortcourse/index.html> The CAPD short course will take place on March 12-18, 2009.

The course Optimization Modeling and Integrated Process Operations is organized in two parts consisting of 6 modules which can be taken in any combination (e.g. 1, 2 3 or all 6):

I. Optimization Modeling to be taught from Thursday through Saturday (March 12-14) will focus on modeling and algorithms with applications to process optimization, process synthesis and molecular design:

- a) Nonlinear programming (Biegler, Thursday, March 12)
- b) Mixed integer and disjunctive programming (Grossmann, Friday, March 13)
- c) Global optimization and optimization under uncertainty (Sahinidis, Saturday, March 14)

II. Integrated Process Operations to be taught from Monday through Wednesday (March 16-18) will focus on three major decision levels in plant and enterprise-wide optimization:

- f) Mixed-integer models for planning and scheduling (Grossmann, Monday, March 16)
- g) Process dynamics and control (Ydstie, March, June 17)
- h) Differential/algebraic models for real time optimization (Biegler, Wednesday, March 18)

The material in each module is independent and self-contained and can be taken in any combination. A detailed description of the topics covered in the course is given in: [http://capd.cheme.cmu.edu/shortcourse/shortcourse\\_details.htm](http://capd.cheme.cmu.edu/shortcourse/shortcourse_details.htm). Recall that CAPD members receive a 25% discount.

- Ignacio Grossmann organized with Frank Doyle, Jaime Cerda and Argimiro Secchi the Pan American Advanced Studies Institute (PASI) on *Emerging Trends in Process Systems Engineering* that took place on August 12-21, 2008, at Hotel Costa Galana, Mar del Plata, Argentina. The meeting was a great success and featured outstanding presentations. The workshop was aimed at advanced graduate and post-doctoral students, and emphasized the latest developments and research challenges in the emerging areas of *sustainability, energy, biological systems, multiscale systems, and enterprise-wide optimization*. This workshop was funded by NSF and the Department of Energy. We are grateful for the additional support that we received from Bayer, GAMS Corporation, Cargill, Pfizer, PPG and Procter & Gamble. This allowed the participation of 50 Ph.D. students from the Americas (50% from U.S.). This PASI workshop was a follow-up to the successful PASI on Process Systems Engineering that took place on in Iguazú, Argentina, in 2005. The website for this meeting is: <http://cepac.cheme.cmu.edu/pasi2008>. Slides of the presentations and background material can be found in: <http://cepac.cheme.cmu.edu/pasi2008/slides/index.html>

- Enterprise-wide Optimization <http://egon.cheme.cmu.edu/ewocp/>  
The meeting of the EWO group took place on September 30. The group is currently composed of the following companies: ABB, Air Products, BP, Dow Chemical, ExxonMobil, NOVA Chemicals, PPG, Praxair and Total. The next meeting of the EWO will take place on Wednesday, March 12. Slides on presentations of these meetings can be found in: [http://egon.cheme.cmu.edu/ewocp/slides\\_meetings.html](http://egon.cheme.cmu.edu/ewocp/slides_meetings.html); slides on seminars on EWO can be found in: [http://egon.cheme.cmu.edu/ewocp/slides\\_seminars.html](http://egon.cheme.cmu.edu/ewocp/slides_seminars.html)

- The Special Issue on Enterprise-wide Optimization (EWO) in *Computers & Chemical Engineering* edited by Kevin Furman and Ignacio Grossmann has been published as volume 32 Volume 32, Issue 11, pp. 2479-2838 (24 November 2008). The issue involves a total of 20 papers, with 4 of them coming from industrial authors (Air Products, Dow Chemical, ExxonMobil, Honeywell). The first ten papers deal with supply chain issues. The next set of four papers deal with solution approaches to scheduling problems, and last four papers focus on operational issues.

- Faculty News

- Larry Biegler..

- Ignacio Grossmann was named one of the “One Hundred Engineers of the Modern Era”, <http://www.aiche.org/uploadedFiles/About/Centennial/100moderneracheme.pdf> by AIChE. He was recognized for his work on MINLP for design and operations. Ignacio delivered the plenary lecture “Optimization Models and Strategies for Crude Oil Operations and Offshore Oil and Gas Production,” at the CLAIO-2008 Meeting (Latin American Congress of Operations Research), in Cartagena, Colombia . He also delivered the plenary lecture “New Research Trends in Process Systems Engineering: Product and Process Design, Energy and Sustainability, Enterprise-wide Optimization,” at the 11th Mediterranean Congress of Chemical Engineering, Barcelona (2008).

- Nick Sahinidis..

- Erik Ydstie ..

- Student News

- Congratulations to Christos Maravelias, former student of Ignacio, and current faculty member at the University of Wisconsin-Madison, who has been named recipient of the 2008 W. David Smith, Jr. Graduate Student Paper Award given by the CAST Division of AIChE. The award is for his paper, "Simultaneous Planning for New Product Development and Batch Manufacturing Facilities," published in I&EC Research 40, 6147-6164 (2001).

- Congratulations to Fengqi You who was selected to receive a travel grant from CAST in conjunction with the AIChE meeting Philadelphia.

- The following PSE students successfully passed their Ph.D. qualifying exam: X, working for Larry Biegler, Sebastian Terazas, working for Ignacio Grossmann, Y working for Nick Sahinidis, X, working for Erik Ydstie.

-Webpages. The following sites might be of interest to you:

Virtual library on Process Systems Engineering:

<http://cepac.cheme.cmu.edu/pasilectures.htm>

You can access webpages of all PSE faculty in the Americas in:

<http://cepac.cheme.cmu.edu/country.htm>

Papers to be presented by CAPD faculty at AIChE Meeting, Philadelphia:

Larry Biegler's group:

Ignacio Grossmann's group:

Nick Sahinidis' group:

Erik Ydstie's group:

- Upcoming meetings

2008 AIChE Annual Meeting, November 16-21, 2008

Philadelphia, PA

<http://www.aiche.org/Conferences/AnnualMeeting/annual2008.aspx>

IMA Hot Topics Workshop: Minneapolis, MN  
MINLP Optimization: Algorithmic Advances and Applications  
November 17-21, 2008  
<http://www.ima.umn.edu/2008-2009/SW11.17-21.08/>

2009 Spring National Meeting. April 26-30, 2009  
Tampa Convention Center, Tampa, FL  
<http://www.aiche.org/Conferences/SpringMeeting/index.aspx>

FOCAPD 2009, June 7-12, 2009  
Beaver Run Resort in Breckenridge, Colorado  
<http://www.focapd.org/>

ESCAPE-19, Junio 14-17  
Cracow, Poland  
<http://www.escape19.org/>

2009 PSE'09 , Aug. 16-20, 2009  
Salvador, Brazil  
<http://www.cepema.usp.br/pse2009>

European Control Conference 2009 - ECC'09, August 23-26, 2009  
Budapest, Hungary  
<http://www.conferences.hu/ecc09/>

World Congress Chemical Engineering, Aug. 23-29, 2009  
Montreal, Canada  
<http://www.chemengcongress2009.com/>

INFORMS Practice Conference, April 26- April 28, 2009  
Phoenix, AZ  
<http://meetings.informs.org/Practice09/>

INFORMS Annual Meeting 2009, October 11-14, 2009  
San Diego Convention Center and Hilton San Diego, San Diego, California

AIChE 2009 Annual Meeting, November 8-13, 2009  
Gaylord Opryland Hotel, Nashville, TN

Distillation & Absorption 2010, Sep 12-15, 2010  
Eindhoven University of Technology, The Netherlands  
<http://www.da2010.nl/>