

# SACHE News



## Safety and Chemical Engineering Education - Spring 2007

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### SACHE 2008 Faculty Workshop

Rohm and Haas Company has agreed to host the 8<sup>th</sup> SACHE Faculty Workshop at their Croyden, Pennsylvania, facilities. This workshop is open to all faculty members whose departments are current members of SACHE. All expenses for the workshops, with the exception of travel to and from your department to the workshop hotel, are covered by the Center for Chemical Process Safety and industrial sponsors.

The focus of the 2008 workshop will be similar to the 2005 workshop *Integretating Process Safety into the Classroom*. The schedule and workshop materials the 2005 faculty workshop are available at <http://sache.org/workshop/2005Faculty/default.asp>.

The SACHE Faculty Workshop is tentatively scheduled for the summer of 2008.

### ioMosaic HAZOptimizer

ioMosaic Corporation (<http://www.iomosaic.com/index1.html>) is offering their software package for recording and managing process hazard analyses at no charge. This Windows Excel application can be used to record results of Hazard and Operability Studies, What-If Analyses, Checklist Analyses, Failure Mode and Effects Analyses, or any other type of hazard analysis that uses a tabular format.

ioMosaic has also extended complimentary copies of its industry standard emergency relief system (ERS) design solutions, SuperChems and ioXpress, to all national universities under the Safety and Chemical Engineering Education Program (SACHE). Additional information can be found at <http://www.iomosaic.com/iomosaic/support/SACHE.htm>.

### CAMEO Chemicals

CAMEO Chemicals is an online version of the most popular components of the CAMEO program, a system of software applications used to plan for and respond to chemical emergencies. CAMEO is one of the tools developed by EPA's Chemical Emergency Preparedness and Prevention Office (CEPPO) and the National Oceanic and Atmospheric Administration (NOAA) Office of Response and Restoration, to assist front-line chemical emergency planners and responders.

CAMEO Chemicals was developed jointly by three U.S. Federal agencies: the National Oceanic and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency (EPA), and the U.S. Coast Guard. This online version (<http://cameochemicals.noaa.gov/>) provides access to the CAMEO database of over 6,000 hazardous materials. Data sheets can be retrieved by searching the database or browsing alphabetically by chemical name. A revised search engine is much faster, and the new search results ranking makes finding chemicals more straightforward. The CAMEO Chemicals datasheets contain most of the same information in CAMEO, but in an easier-to-read layout. There are six categories of information: chemical identifiers, hazards, response recommendations, physical properties, regulatory information, and alternative names (including names in French, Spanish, and other languages). Data sheets can be bookmarked and saved for use in subsequent sessions.

The website makes it easier to virtually mix chemicals and predict reactivity hazards. Also, the online version eliminates the need to install the CAMEO suite of applications and provides access from any computer with internet connectivity.

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SACHE, or Safety and Chemical Engineering Education, is a project under the auspices of AIChE's Center for Chemical Process Safety (CCPS). SACHE's charter is to enhance the presentation of process safety in undergraduate education.

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The opinions expressed in the articles contained in the *SACHE News* are not necessarily the opinions of the Center for Chemical Process Safety or the American Institute of Chemical Engineers.

Articles related to any aspects of safety in the academic community are solicited from both the academic and industrial communities for publication in *SACHE News*. Material should be sent directly to the editor for consideration.

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## New SACHE Products for 2007

These SACHE products are available to member universities. Faculty and students should contact their SACHE representative for access to these and other SACHE products, including PowerPoint presentations, videos, problem sets, NIOSH publications, and CCPS books. Recent SACHE deliverables are posted at <http://www.sache.org>.

### Venting of Low Strength Enclosures

W. B. Howard (Monsanto, retired)  
J. F. Louvar (Wayne State University)

This package on Explosion Prevention Research was originally produced for SACHE university members to help them add an element of chemical process safety to their Process Design Courses and/or help professors and graduate students to understand the violence of explosions, and understand the technology required to prevent explosions.

Although this product was originally designed for academic setting, it contains many concepts and/or pictures that will be very useful in training programs in an industrial environment.

A narrated movie “Venting of Low Strength Enclosures” discusses: a) damage due to non-vented explosions, b) design criteria for sizing vents, c) NFPA 68 vent equation for sizing vents, d) discussions regarding the design details of the vent panels and constraints, and e) details of experimental tests that were made to develop the design criteria for explosion vents. The movie contains many excellent pictures and video clips of explosions that illustrate the magnitude, speed, and consequences of explosions. All of the files necessary to show the narrated movie are in Venting.zip. After restoring the files and starting the Astound Player (astdplay.exe), select the file venting.asd, and click the play button to start the narrated movie.

The PowerPoint presentation with this product (venting.ppt) can be used as is or modified to fit an instructor’s requirements. The presentation has 17 slides. The slides include excellent pictures of the consequences of explosions taken from the narrated movie. The file venting.ppt includes presentation notes, and additional notes are included in venting.doc.

### Static Electricity I – Everything You Wanted To Know About Static Electricity

Marc Rothschild (Rohm and Haas)

Static electricity is a significant problem in both plant and non-industrial environments. About 13% of the ignitions of chemical fires and explosions are due to static electricity. This SACHE product covers the elementary, fundamental, and practical concepts of static electricity including static charge build-up and discharge that can be the ignition source for flammable gases and dusts. Excellent illustrations are given that will help plant designers and operators, as well as the private citizen, understand the fundamentals of static electricity. Some elementary concepts and special design techniques for preventing static charge build-up and discharge are included. The PowerPoint presentation can be used as a one-hour lecture and can be modified as desired. References are provided in the Word Document. Note that the PowerPoint lecture links to the video clip included with this product, and this link may need to be modified after the product is downloaded.

### CHEM-E-Car Safety Training

The resources from CHEM-E-Car Safety Training Workshop led by Randy Freeman and sponsored by AIChE, CCPS, and SACHE held on November 11, 2006, in Los Angeles, California, are available on the internet. A link has been posted on the SACHE web site ([www.sache.org](http://www.sache.org)).

Ron Wiley, Northeastern University, is working on an updated and expanded version of these materials. A DVD will be available within the next few weeks, and a notice will be posted on the SACHE web site.

**4<sup>th</sup> Global Congress on Process Safety**  
**New Orleans, LA, April 6 – 10, 2008**  
**CALL FOR PAPERS**  
*Abstract Deadline September 30, 2007*

The Center for Chemical Process Safety (CCPS), the Loss Prevention Symposium (LPS), and the Process Plant Safety Symposium (PPSS) are coordinating conferences again in 2008 to present the 4<sup>th</sup> Global Congress on Process Safety. This annual event is the primary forum for practitioners from the chemical and allied industries, academia, and government to share practical and technological advances in all aspects of process safety. As industry works to adapt to a changing business environment and limited resources, strategies such as Risk-Based Process Safety (RBPS) can be effectively used.

Risk-Based Process Safety is a management approach to design, correct, and improve process safety management activities, commensurate with the risk-based need for these activities, the availability of resources, and the existing process safety culture. The four main concepts of RBPS that we hope to address throughout this conference are: Committing to Process Safety, Understanding Hazards and Risks, Managing Risks, and Learning from Experience.

Please send your abstracts directly to the chairs of the individual sessions. Their contact information is given on the next page and full detail on each session is provided at <http://www.aiche.org/Conferences/Specialty/GCPS.aspx>.

2008 Global Congress Chair: Peter N. Lodol, 423-229-2675, [pnlodol@eastman.com](mailto:pnlodol@eastman.com)  
AIChE Global Congress Oversight: Karen Person, 212-591-7319, [karep@aiiche.org](mailto:karep@aiiche.org)

23<sup>rd</sup> Annual Center for Chemical Process Safety (CCPS) International Conference  
Human Factors Issues  
Safety Instrumented Systems  
Reactivity Hazard Identification Tools  
Pre-Startup Safety Review and Re-Commissioning  
Audits, Inspections, Assessments  
CCPS: Case Histories and Lessons Learned  
CCPS Chair: Cheryl Grounds, (281) 366-4740, [Cheryl.Grounds@bp.com](mailto:Cheryl.Grounds@bp.com)

42<sup>nd</sup> Annual Loss Prevention Symposium (LPS)  
Electrostatic Hazards and Control  
Fire, Explosion and Reactive Hazards  
Advances in Fire and Explosion Suppression  
Laboratory and Pilot Plant Safety  
Hazards of Alternative Fuels Technologies  
LPS: Case Histories and Lessons Learned  
LPS Chair: David G. Clark, DuPont, [david.g.clark@usa.dupont.com](mailto:david.g.clark@usa.dupont.com)

10<sup>th</sup> Process Plant Safety Symposium (PPSS)  
Hazard Identification and Risk Assessment Tools  
Conduct of Operations for Process Safety  
Plant Process Safety Management Systems  
Applications of Safety Culture  
Maintaining Instrument and Mechanical Integrity  
PPSS: Case Histories and Lessons Learned  
PPSS Chair: Jack Chosnek, 281-538-0220, [jc@knowledge1.net](mailto:jc@knowledge1.net)

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### ***23<sup>rd</sup> Annual CCPS International Conference***

CCPS Conference Chair: Cheryl Grounds, 281-366-4740, [Cheryl.Grounds@bp.com](mailto:Cheryl.Grounds@bp.com)

CCPS is requesting all abstracts for the CCPS program come to Karen Person, [karep@aiche.org](mailto:karep@aiche.org), 212-591-7319

Session Chairs and additional contacts to be announced soon at [www.ccpsonline.org](http://www.ccpsonline.org)

### ***10<sup>th</sup> Process Plant Safety Symposium***

Symposium Chair: Jack Chosnek, 281-538-0220, [jc@knowledge1.net](mailto:jc@knowledge1.net)

Symposium Co-Chair: John W. Champion, 281-228-8265, Fax: 281-228-8675, [jchampion@rohmmaas.com](mailto:jchampion@rohmmaas.com)

### **Hazard Identification and Risk Assessment Tools**

Philip M. Myers, 740-965-6304, [pmyers@arisksolution.com](mailto:pmyers@arisksolution.com)

Sanjeev Saraf, 832-325-5716, [saraf@exponent.com](mailto:saraf@exponent.com)

### **Conduct of Operations for Process Safety**

James R. Thompson, 281-673-2853, [jthompson@absconsulting.com](mailto:jthompson@absconsulting.com)

### **Plant Process Safety Management Systems**

Dr. Angela E. Summers, 281-922-8324 x14, [asummers@sis-tech.com](mailto:asummers@sis-tech.com)

### **Applications of Safety Culture**

Dr. Colin (Chip) S. Howat, 785-218-3718, [cshowat@ku.edu](mailto:cshowat@ku.edu)

### **Maintaining Instrument and Mechanical Integrity**

Katherine E. Pearson, 281-228-8236, [kathrinepearson@rohmmaas.com](mailto:kathrinepearson@rohmmaas.com)

### **Case Histories and Lessons Learned**

Albert Ness, 215-785-7567, [aness@rohmmaas.com](mailto:aness@rohmmaas.com)

### ***42<sup>nd</sup> Annual Loss Prevention Symposium (LPS)***

LPS Chair: David G. Clark, [david.g.clark@usa.dupont.com](mailto:david.g.clark@usa.dupont.com)

LPS Vice Chair: Jean Paul Lacoursiere, [jpla@sympatico.ca](mailto:jpla@sympatico.ca)

### **Electrostatic Hazards and Control**

Erdem A. Ural, [erdem.ural@lpsti.com](mailto:erdem.ural@lpsti.com) or Randy Freeman, [rafree@yahoo.com](mailto:rafree@yahoo.com)

### **Fire, Explosion and Reactive Hazards**

Frank H. (Hank) Gurry, [gurry,fh@pg.com](mailto:gurry,fh@pg.com) or Christopher Hanauska, [chanauska@haifire.com](mailto:chanauska@haifire.com)

### **Advances in Fire and Explosion Suppression**

John E. Going, [john.going@fike.com](mailto:john.going@fike.com) or Henry L. Febo, [henry.febo@fmglobal.com](mailto:henry.febo@fmglobal.com)

### **Laboratory and Pilot Plant Safety**

Daniel A. Crowl, [crowl@mtu.edu](mailto:crowl@mtu.edu) or Dennis C. Hendershot, [d.c.hendershot@att.net](mailto:d.c.hendershot@att.net)

### **Hazards of Alternative Fuels Technologies**

Walter L. Frank, [wfrank@absconsulting.com](mailto:wfrank@absconsulting.com) or Robert P. Benedetti, [rbenedetti@nfpa.org](mailto:rbenedetti@nfpa.org)

### **LPS: Case Histories and Lessons Learned**

John F. Murphy, [hamjfm@earthlink.net](mailto:hamjfm@earthlink.net) or Lisa Long, [lisa.long@csb.gov](mailto:lisa.long@csb.gov)