

March 18, 2009
Emerging Technologies Symposium
 Chemical Heritage Foundation

Chair's Chat
 Smaller, Cheaper, Cleaner, Safer =
 Process Intensification

The Delaware Valley Section is delighted to announce the sponsorship of the Emerging Technologies Symposium by NES Group. We anticipate an ongoing successful relationship with NES in the future.

Recruitment firm, NES offers a specialist technical and engineering recruitment service worldwide. Its office infrastructure spans the Middle East, Asia, Africa, Australia, The Americas and Europe and, as part of the company's ongoing expansion, a New Jersey office was established in November 2008.

The new office was strategically placed in a region in which the company anticipates considerable demand for permanent and contract personnel. NES will develop a database of local professionals while also utilising its worldwide presence to facilitate access to the global talent pool.

Working to develop close relationships within the pharmaceutical, biotechnology, medical devices, consumer healthcare and nutraceuticals sectors, NES will offer assistance with relocation, visas, medicals and insurances as well as delivering a recruitment service of the high standard that its clients and candidates have become accustomed to.

For more information, please email newjersey@nesgroup.com



As part of the company's ongoing expansion, a New Jersey office was established in November 2008.

Location:

Chemical Heritage Foundation
 315 Chestnut Street, Phila., Pa.
www.chemicalheritage.org

Times:

9:00a.m. to 3:00p.m.
 See Page 4

Cost:

\$80.00 per person
 \$50.00 per recent graduate (Three years or less)
 \$25.00 per student
 Cash Bar

Registration:

Register under the "Events" link at www.aiche-philadelphia.org
 For questions, please contact Ken Rollins at Ken.rollins@aiche-philadelphia.org

The AICHE-DVS Process Intensification Symposium is scheduled for March 18 at the Chemical Heritage Foundation in Philadelphia. You cannot afford to miss this event. Process intensification is the way of the future in the chemical process industry. The term process intensification was coined in the 1980's to refer to an approach developed by Olin Ramshaw of ICI. Mr. Ramshaw aimed to develop smaller, "intensified," chemical processes that would be more effective and safer than standard processes.

The idea behind process intensification is to look at a process through its fundamentals. The key to process intensification is to identify the critical elements in a process and its rate limiting steps. This information is transferred into an equipment design that meets specifications. The important aspect is to understand the process sufficiently so that its rate controlling steps are clearly understood and then matching the process to the right equipment to get the job done. Process intensification technologies usually involve changing processes from batch to continuous, the use of in-

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Don't Get Your Wires Crossed

by Eric Sipe - Project Engineer/Project Manager - CDI

A recent project involved a wide range of power, communication and control wiring. It required a CAT 5 cable for communication between a process control computer, a remote I/O drop and an HMI. It also required a vibration sensor cable between a rotating equipment machine and its control panel mounted transducer. It further required wiring for intrinsically safe field devices and 24 volt wiring for regular process transmitters. Finally it required 120 VAC wiring for field instruments and motor control wiring as well as three phase 480 VAC power wiring for equipment motors.

This project contained these numerous types of electrical and control systems and it proved a challenge to ensure that all of the wires got to the right place. It also proved a challenge to ensure that all of these wires got there in the right conduit only with other compatible wiring.

The main equipment was supplied by a foreign vendor who sub-contracted the fabrication of their control panel to a US based electrical contractor. The automation system for the project was developed and built by a local automation firm. The power and control wiring design for the project was developed by a US based A&E firm. The A&E firm, the automation firm, the equipment supplier and the electrical contractor all worked together to coordinate the design and installation of all necessary conduit, cables and wiring. Despite the teams best efforts there were wires that did get crossed on this project.

A noise sensitive vibration sensor cable was unknowingly routed with other analog wiring with which it was incompatible

Limit switch wiring for numerous automated valves was incorrectly supplied by a valve supplier

Intrinsically safe wires were routed with other 24 VDC wires

A necessary CAT 5 communication cable wasn't clearly delineated in the construction package prior to bidding the installation

Several previously installed automated valves needed to be wired for position indication feedback

Several existing automated valves had to be wired to operate from two different process units

In the end all of these crossed wires were successfully remediated through the knowledge and creativity of the project team.

- The noise sensitive vibration sensor cable was separated from the analog wiring by rerunning the analog wires through a shielded multi-conductor.
- The valve manufacturer replaced the improperly installed limit switch wiring in the field in a period of two days.

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CHEMICAL CONSULTANTS NETWORK - APRIL 7, 2009 MEETING

[Visit our NEW web page at www.chemconsultants.org](http://www.chemconsultants.org)

Date & Time: Tuesday, April 7, at the Cynwyd Club, 332 Trevor Lane, Bala Cynwyd, PA; 19004 Networking, 5:30 PM; Dinner, 6:30 PM; Talk and Business Session, 7:30 PM

Topic:

**ENTREPRENEURIAL RESOURCES & OPPORTUNITIES
FOR THE TECHNICAL CONSULTANT**

JOHN McADAM

Abstract: John McAdam, a serial entrepreneur, former CEO, and Instructor in Strategic Business Planning at the Wharton Small Business Development Center will provide us with insight into the resources available for entrepreneurs that you might not know about that benefit the technical consultant entrepreneur. John will talk with us about intellectual property, entrepreneurship, building a business, and highlights from his upcoming book, *Free Resources for Entrepreneurs*.

John earned an MBA from The Wharton School of the University of Pennsylvania in Marketing, Strategic Planning, and Entrepreneurial Management. He also holds a B.S degree in Nutrition and Business Administration from West Virginia University. He loves to talk about Mountaineer football and basketball.

Reservation: To make or cancel a dinner reservation, e-mail CCNReservations@aol.com or call the ACS office at 215-382-1589 (leave message on voicemail if necessary). Fee, including food and beverages (wine, beer & sodas), is \$25 by the deadline, Thursday, April 2, \$35 afterwards.

Joseph Priestley Society

In December 2008 the **Eastern Technology Council** awarded its annual Enterprise Awards to the region's top life sciences companies and entrepreneurs. In March 2009 the **Joseph Priestley Society** joins with the Eastern Technology Council and its award winners to present a symposium on "**Philadelphia and the Life Sciences Industry.**" This symposium will address the current state of the life sciences in the Philadelphia area and look at several examples of how innovation has translated into regional success.

On **Thursday, 12 March 2009** we welcome a panel of Enterprise Award-winners for an afternoon symposium, preceded by a networking reception and luncheon. The panelists are: **Robert J. Broeze**, Laureate Pharma, Inc. (Emerging Life Sciences Company awardee); **Anthony DelConte**, Auxilium Pharmaceuticals, Inc. (Life Sciences CEO of the Year finalist); **Frederick J. Fritz**, Neuro Diagnostic Devices (Life Sciences Startup Company awardee); and **Glenn Kenney**, Globus Medical (Life Sciences Company of the Year awardee).

Please see the website for further details

RSVP Today for the March JPS Meeting!

The symposium will begin immediately following a networking reception that begins at 11:30 a.m. and a lunch that will be served at 12:15 p.m. The meeting will adjourn by 3:00 p.m.

Limited seating available - Call or send an e-mail today to reserve your spot for Thursday, 12 March 2009!

Meetings of the Joseph Priestley Society are by invitation only and are held the second Thursday of each month from September through April. There is no charge to attend. Reduced-rate parking is available at the Bourse Garage on 4th Street between Market and Chestnut Streets and at the Ritz Garage on 2nd Street between Chestnut and Walnut Streets.

To RSVP send an e-mail to eventregistrations@chemheritage.org, log onto www.chemheritage.org and click "Events & Activities," or call Bob Kenworthy at 215-873-8292.

Chair's Chat

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tensive reactor technologies involving high levels of mixing and heat transfer, flexibility in process designs so that multiproduct processes can be cost effective and safe. Finally, process intensification involves a multidisciplinary approach that provides for the simultaneous continuous improvement of processes and process chemistry.

Process intensification results in a wide range of benefits including significant reductions in capital costs and impurity levels. This translates into a cost effective process and a more valuable product. Reductions in energy use of 70% or more are not uncommon as well as reductions in reactor volumes for hazardous processes. All analyses show that process intensification leads to more cost effective, environmentally responsible and safer processes, and more valuable products.

Please check our website and register for the AIChE-DVS Process Intensification Symposium today to make certain you get a seat. Intensify your career while supporting your section, and bring back to your office information you can use to optimize any process. The Symposium will be held at the Chemical Heritage Foundation building. The newly renovated building and its museum are a perfect setting for this event. Please check our website for information and registration. We look forward to seeing you there. Please do not hesitate to contact any of the officers listed if you have any questions and don't forget that the Student Awards Banquet is scheduled for April 22 at Widener University.

Don't Get Your Wires Crossed

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- The intrinsically safe wires and the 24 VDC wires were rerouted through different conduits.
 - The CAT 5 cable was routed from the computer room through a conduit to the process area.
- The automated valves were wired through existing conduits to accomplish the necessary wiring configuration.

A detailed evaluation of the wiring requirements was done prior to issuing the electrical and instrumentation bid package but due to the complex nature of this facility retrofit project some wires were missed by the design team. In the end the crossed wires were made right but this came at a cost to the project budget and schedule. Therefore, the next time you have a complex process project make sure you know all of the wiring requirements of all of the equipment and instruments and make sure you have a complete plan for making sure the wires get to the right place in the correct way. In doing so, make sure you involve all necessary parties such as the electrical and instrumentation engineers, the equipment supplier, the system integrator, and the contractor who will do the field installation. Ensure that each aspect of the systems power, data, communication, and control wiring is assigned to one of the responsible parties from the start so that there won't be any head scratching or finger pointing later on in the project. By doing this you will greatly reduce the chances of getting any of your wires crossed.

March 18, Symposium Program - Tentative

9.00	Coffee Reception	11.45	Networking Reception
9.30	Opening Remarks – Zenaida Gephardt	12.15	Lunch
9.45	Dr Adam Harvey, Newcastle University, UK	13.15	Keynote Speaker – Dennis Hendershot
10.15	Dr Roshan Jachuck, Clarkson University	13.45	Further Comments/Questions
10.45	Mr Rocky Costello, RC Costello & Associates	14.15	Concluding Remarks
11.15	Q&A _ Panel Discussion	14.30	Finish

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2008 – 2009 AIChE- DVS Event Schedule

March 2009
Emerging Technologies Symposium
Chemical Heritage Foundation
Philadelphia, PA

April 2009
Student Awards Banquet
Widener University on April 22

May 2009
Plant Tour
Gamesa
Fairless Hills, PA

June 2009
Golf Outing

Joseph Priestly Society

The Joseph Priestly Society meets monthly at the Chemical Heritage foundation. There is a one hour networking social at 11 am, followed by a buffet lunch and speaker. It is free by invitation. As AIChE members, you are invited and welcome to attend. More details may be found at: <http://www.chemheritage.org/events/event-nav1.asp>

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