



# AICHE Newsletter Delaware Valley Section



Volume 55 Issue 6

www.aiche-philadelphia.org

April 2008

**April 10, 2008**

## **AICHE DVS – Student Awards Banquet**

**Speakers: Roawan’s Brian Lefebvre & Nadia Adawi**

## **AICHE-DVS Student Workshop**

**P**lease plan to attend the Student Awards Banquet on April 10. This year, the Banquet will be held at the University of Pennsylvania. We will be awarding the Student of the Year Awards to sophomores, Juniors and Seniors from the universities in our region and the Zeisberg Awards. We will also recognize the Sophomore Academic Excellence Award (formerly Othmer Award) winner at the Banquet. Please join your colleagues in industry and academia to recognize and honor the effort of our students.

**S**o-called “soft-skills”, while not a core part of any college curriculum, are nonetheless often as valuable as credentials in the search for employment. Confidence in an interview and a well organized resume can make the difference between receiving an offer and simply having your application filed for “future consideration”.

This year our speakers are Brian Lefebvre and Nadia Adawi. The title of their joint presentation is *Biofuels: The Future of Energy*. Brian is Assistant Professor of Chemical Engineering at Rowan University. His research on ethanol production from lignocellulosic feedstocks has yielded a patent application along with several publications. He holds a Ph.D. in Chemical Engineering from the University of Delaware. He is the faculty advisor for the Rowan AICHE student chapter and the winner of the 2007 Outstanding Teacher Award. Nadia is President and Founder of Philadelphia Fry-o-Diesel, Inc. Fry-o-Diesel has developed patent-pending technology for the conversion of waste greases into high quality biodiesel. The Company received the prestigious Governor’s Renewable Energy Leadership Award. Nadia holds an MBA from the Yale School of Management and a B.S. in Electrical Engineering from the University of Missouri. She is Co-Chair of the Sustainable Business Network of Greater Philadelphia and was named as a 2001 Woman of Distinction by the Philadelphia Business Journal.



*Nadia Adawi is President and Founder of Philadelphia Fry-o-Diesel, Inc.*

### **Meeting Date:**

April 10, 2008

5:00 PM Reception and Networking

6:00 PM Dinner

7:00 PM Speakers & Awards

### **Location:**

University of Pennsylvania  
Levine Building (First Floor)  
at the Wu and Chen Auditorium

### **Ticket Price:**

\$30 per person

\$10 per student

### **RSVP:**

Please confirm your attendance You can register and pay directly on our website. [www.aiche-philadelphia.org](http://www.aiche-philadelphia.org).

For questions, please contact at David Salas Student & Recent Graduation Coordinator at ([dsalas2k@yahoo.com](mailto:dsalas2k@yahoo.com)).

The AICHE Delaware Valley Section is please to announce that a Student Workshop will be conducted at Drexel University on April 16<sup>th</sup>, 2008. The workshop will focus on resume development and interview skills. The event is free of charge and students are encouraged to bring copies of their resumes.

Area professionals from several sectors of the Chemical Engineering industry will be present and students will have the opportunity to interact with them and gain first-hand insight into the specifics of their particular sector.

All students majoring in Chemical Engineering are welcome to attend and students graduating in 2008 are particular encouraged to participate.

Students who wish to attend can register on the AICHE-DVS website at [www.aiche-philadelphia.org](http://www.aiche-philadelphia.org) by Friday, April 11<sup>th</sup>.

Please contact Roy Stoflet at [r\\_stoflet@yahoo.com](mailto:r_stoflet@yahoo.com) if you have any questions about the event or if you are a professional wishing to participate.

## To VFD or Not to VFD, That is the Question - By Eric Sipe, PE

**P**umps, fans, and compressors are often called upon to operate through a range of pressures and flow rates. Centrifuges and agitators are also called upon to operate throughout a range of speeds in order to perform their required operations. There are typically several ways that these units can be made to perform within a defined operating range. A sensor and control valve or damper can be used to control the operating pressure or flow rate delivered by a fixed speed liquid or gas mover. An agitator can be equipped with a variable pitch speed controller. A centrifuge can be equipped with a hydraulic motor and adjustable flow rate hydraulic pump. But increasingly these other means of speed control are being replaced by another option for providing operating range control. The new kid on the block is the Variable Frequency Drive or VFD (VFDs aren't really that new, I have been working with them since the late 80s or early 90s). In recent years VFD costs have dropped dramatically making them more cost effective when compared to other means of controlling pressures and flows.

A VFD unit may need to be accompanied by a pressure regulator or controller to perform pressure control but it is a good and efficient means of exactly matching your pressure and/or flow control requirements for a system. But what other benefits can one derive from a VFD? Further, are there instances where one should not employ a VFD in order to achieve process control needs?

Through the years I have worked on projects where VFDs were successfully employed to drive small pumps as well as large air moving fans. I have also seen VFDs used as the speed controller for many centrifuges and agitators. VFDs are great because they typically come with a lot more capabilities than just the ability to control the speed of a motor. Today's VFDs are very smart and have many useful features that can be used to monitor the operation of equipment and protect that same equipment through various diagnostic features. Further, VFDs can be used to initiate ramped starting and stopping of equipment so that it can be done safely, efficiently and cost effectively. A VFD can be used to control in-rush current during start-up for some large equipment items and this can lead to savings by reducing the size of a transformer or emergency stand-by generator that otherwise would be sized for in-rush current instead of steady state. When employed with a regenerative braking system energy can also be recovered while slowing equipment down through a variable frequency drive.

VFDs with all of their built in features may be a good motor controller for your next pump, fan, compressor, agitator or centrifuge because of their vast capabilities. They might be employed in order to provide energy savings or in order to gain access to their great repertoire of monitoring and diagnostic features. Another great feature of today's VFDs is that many of them can communicate to other process control units via a two wire communication cable. This means that all of the information in the VFD can be made available to a distributed control system or a building automation system without providing a lot of hard wired signals.

On the down side, VFDs, because of their vast capabilities do cost quite a bit more than normal motor starters and even soft starting equipment with another type of speed controller. Additionally, there is an added expense per point to implement monitoring and control via information acquired from the VFD. These high initial capital costs, however, may be recovered over the life of the project as reduced operating and/or maintenance costs.

To VFD or Not to VFD, that is a question you should be asking yourself at the start of your next project. It may cost you some extra money but the side benefits will likely outweigh the additional costs over the life of the equipment if the VFD is wisely employed.

### Coming events:

#### May:

Tour of the Selas Fluid Process/T-Thermal pilot labs and research facility. Date to be announced.

#### June:

Second annual AIChE Golf Outing. Date and location to be announced.

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## Chemical Heritage Foundation, 10 April 2008 Meeting

Dear Joseph Priestley Society Supporter:  
The Joseph Priestley Society invites you to attend its **10 April** meeting, which will feature a keynote address, "**The Growing Problem of Antibiotic-Resistant Bacteria**" by **Christopher Cashman**, president and CEO, Protez Pharmaceuticals. Protez is a privately held company founded in 2003 with the mission to discover, develop, and commercialize novel antibiotics to combat the growing problem of drug resistance, as well as agents that improve the efficacy of current antibiotics. Their focus is on the hospital market and difficult to treat hospital-based infections. Protez Pharmaceuticals was also the winner of the Eastern Technology Council's 2007 Enterprise Award for Emerging Life Sciences Company of the Year.

### SIGN UP EARLY - RSVP TODAY FOR THIS EXCLUSIVE JOSEPH PRIESTLEY SOCIETY MEETING!

**The program will begin with** a networking reception at 11:30 a.m. and lunch at 12:15 p.m. Cashman will take the podium at 1:00 p.m. and the meeting will adjourn at 2:00 p.m. Meetings of the Joseph Priestley Society are by invitation only and are held each month from September through April. There is no charge to attend. Please note parking at the Bourse Garage on 4th Street between Market and Chestnut Streets is based on availability.

### LIMITED SEATING AVAILABLE – REGISTER TODAY TO RESERVE YOUR SPOT FOR 10 April!

Register online at <http://www.chemheritage.org/events/event-detail.asp?id=366>, or send an e-mail to [eventregistrations@chemheritage.org](mailto:eventregistrations@chemheritage.org) or call **215-873-8208**.

We look forward to seeing you on **10 April!**

### CHEMICAL CONSULTANTS NETWORK APRIL 9, 2008 MEETING

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

**Date & Time:** Wed., April 9, at the Cynwyd Club, Bala Cynwyd, PA; Networking, 5:30 pm; Dinner, 6:30 pm; Talk and Business Session, 7:30 pm

**Speaker Topic:** TAKING CONTROL OF RETIREMENT  
*Managing The Risk Of An Income Shortfall*  
**ROGER M. SINGER, CFM**

**Abstract:** This presentation will focus on factors that can contribute to an income shortfall in retirement and provide solutions. These factors include the following: Longevity Risks – Not outliving your assets; Withdrawal Risks – Having enough to live comfortably without jeopardizing your future; Income Investment Risks – Investing to keep ahead of inflation, and the timing of investment gains and losses.

**Location:** The Cynwyd Club, 332 Trevor Lane, Bala Cynwyd, PA 19004.

**Reservation:** To make or cancel a dinner reservation, e-mail [CCNReservations@aol.com](mailto: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 \$35. Early Bird discount price is \$25 if reserved by Thursday, April 3. No-shows will be invoiced.

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