



2003 Industries of the Future Technology Symposium

Discover the technologies that can change Wisconsin's business future.

Four Points By Sheraton
Milwaukee Airport
Milwaukee, Wisconsin

2003 Industries of the Future Technology Symposium

Conference objective

Share, listen and learn at this groundbreaking industrial symposium. Industry, universities and technology companies will present and lead discussions on the technologies that promise to improve the economics, efficiency and environmental performance of Wisconsin's industries.

Benefits of attending

- Be the first in your industry to learn about new technologies that can give you a competitive edge.
- Take part in the exchange of ideas between technology developers and industry as needs and solutions are discussed.
- See what other industries are doing to solve energy and environmental problems.
- Leave with the personal contacts and information you need to pursue technology partnerships.

At this symposium you will:

- Hear about new technologies you can use today and others that could revolutionize your industry over the next five years.
- Meet the developers of these technologies and discover programs that will help you learn whether a new technology will work for you.
- Learn about the technical and financial assistance available from the U.S. Department of Energy, Wisconsin's Center for Technology Transfer and the Industries of the Future program.

Who should attend?

- Business Leaders
- Production Supervisors
- Process Engineers

- Technology Experts and Consultants
- University/National Laboratory Researchers
- Local, State and Federal Government Leaders
- Plant Managers and Engineers
- Environmental Engineers and Agency Staff
- Venture Capitalists
- Industrial Equipment Suppliers

Date and location

May 13, 2003
Four Points by Sheraton
Milwaukee Airport
4747 South Howell Avenue
Milwaukee, WI 53207

Registration costs and deadlines

To receive the early bird rate of \$79, we must receive your registration by April 23, 2003. After that date, participants pay \$99 per person.

The participation fee includes continental breakfast, lunch and symposium proceedings. The remaining cost per participant has been underwritten by Focus on Energy and the U.S. Department of Energy.

Accommodations

Four Points by Sheraton Milwaukee Airport
Group Name: Focus on Energy
Phone: 800.558.3862
A block of rooms at the Sheraton will be held for participants until April 30, 2003. Symposium room rates are \$89 per night (single or double occupancy). You must mention Focus on Energy to receive this special rate.

Focus on Energy is a public-private partnership offering energy information and services to energy utility customers throughout Wisconsin. The goals of this program are to encourage energy efficiency and renewable energy, enhance the environment and ensure the future supply of energy for Wisconsin. 800.762.7077 focusonenergy.com

May 13, 2003
Milwaukee, Wisconsin

The early bird discount
expires April 23, 2003.

7:30 am – 8:00 am
8:00 am – 8:45 am

Registration / Continental Breakfast
Welcome and Opening General Session

8:45 am – 9:45 am

1A — Paper Industry

Dryer Steam Use Improvements via Stationary Siphons and High-Profile Dryer Bars

A reoccurring problem with paper machines is the production of condensate rimming inside dryer cans, which reduces heat transfer. This session will evaluate the results of trials on two technologies that address this problem: 1) stationary siphons that draw off the excess condensate, and 2) dryer bars that break up the rimming and allow the steam to contact the inner surface of the dryer.
Speaker: Ken Hill, Johnson Corporation

An Automated Dryer Management System for Steam Optimization During Upset Conditions

Existing paper machines have control systems that monitor and control virtually every facet of their operation. However, these control systems provide minimal functionality during upset conditions, such as sheet break, startup, grade change or equipment repairs. Learn about an automated dryer management system that keeps the dryer section of the machine running optimally during upset conditions.
Speaker: Ken Hill, Johnson Corporation

9:45 am – 10:00 am

10:00 am – 11:00 am

1B — Paper Industry

Progress in the Development and Optimization of Polyoxometalate Delignification Systems

Polyoxometalate-based delignification is a new pulping and bleaching technology that requires no sulfur for pulping and no chlorine for bleaching. This session will discuss the evolution of this delignification process, how it can be optimized for bleaching and the technology's current status and economics.
Speaker: R. H. Atalla, Director, POM Bleaching Consortium, USDA Forest Service, Forest Products Laboratory

Microwaving Logs for Energy Savings and Improved Paper Properties for Mechanical Pulp

This session examines the practice of microwaving logs in order to reduce the total energy needed for producing pulp and to increase pulp strength. Under the conditions of our study, we have shown that total electric energy can be reduced by 15 percent and handsheet strength increased by 18 percent to 36 percent.
Speaker: John H. Klungness, Research Chemical Engineer, USDA Forest Service, Forest Products Laboratory

2A — Chemicals and Plastics, Printing, All Industries

Increasing Capacity and Improving Efficiency in Regenerative Thermal Oxidizers

Thermal oxidizers have been the industry standard for controlling volatile organic compound (VOC) emissions from industrial processes. This session will highlight the methods for increasing energy efficiency of regenerative thermal oxidizers and includes a case study of a recent project at Linetec in Wausau, Wisconsin.
Speakers: James Gallo and Chris Worachek, MEGTEC Systems

Demonstration of Low-Temperature VOC Oxidation with a Photocatalytic Reactor

Photocatalysis is a low-temperature oxidation process developed by researchers at UW-Madison. This session will describe an IOF project demonstrating the photocatalytic destruction of airborne volatile organic compounds.
Speaker: Thatcher Root, Principal Investigator, UW-Madison Chemical Engineering Department

3A — All Industries

Thermal Mass Flow Monitoring of Compressed Air and Nitrogen

While the benefits of a leak maintenance program are universally recognized, practical techniques for verification of the benefits are still under development. This session will describe combining thermal mass flow sensing with data logging and remote monitoring to address this need.
Speaker: Robert E. Wilson, ConservAIR Technologies Company, LLP

Advances in Steam System Training

Often industrial plants perceive that the purpose of steam system training is to teach people about steam traps. Steam traps are only a small part of a steam system. This session describes advances in steam training that encompass the entire system, not just one component.
Speaker: Kelly Puffel, PSE, Inc.

Break / Poster Presentations

2B — Metalcasting Industry

Automating Metalcasting Simulation/ Process Optimization: Software Development and Case Studies

Foundries have used process simulations to predict and solve casting problems before producing the physical casting. This session describes several case studies of new software that use simulation results to help users design a quality rigging system.
Speaker: David C. Schmidt

Aluminum-Fly Ash Alloy

This session will describe the development and properties of aluminum-fly ash alloy (ALFA 319), a new alloy commercialized in an IOF demonstration.
Speaker: Pradeep Rohatgi

3B — All Industries

Energy Management USA-Style: Review of the Energy Management Practices of 500 U.S. Companies, and the Implications

One-2-Five is a highly effective process developed to engage top management in how energy impacts their business and how well they manage these impacts through established practices and procedures. This session will share findings from the One-2-Five customer database for United States industry.
Speaker: Johnathan Jutsen, EnVinta Corporation

Enhancing Research, Development and Commercialization of Technologies

Learn how the U.S. Department of Energy (DOE) provides financial and technical support to accelerate the research, development and deployment of new technologies that address technical challenges facing industry.
Speaker: Buddy Garland, U.S. DOE

11:00 am – 11:15 am

11:15 am – 12:15 pm

1C — Paper and Biobased Processes Industries

Nano-Biotechnology Changing the Challenge in Pulp and Paper Research

A review of emerging technologies suggests that biotechnology and nanotechnology are two of the few research avenues that could dramatically refine core manufacturing and products in the forest products industry. This session will review emerging applications of both technologies and future developments.
Speaker: Arthur J. Ragauskas, Professor of Wood Chemistry, Institute of Paper Science and Technology

Fiber Loading Biopulped Thermo-Mechanical Pulp

Though biopulping reduces electricity use by at least 30 percent and improves paper strength, the biopulping fungus secretes enzymes that darken the lignin. Fungal pretreatment also reduces fines content. One novel approach to solve both fiber darkening and loss of fines is to combine biopulping with fiber loading technologies.
Speaker: John H. Klungness, Research Chemical Engineer, USDA Forest Service, Forest Products Laboratory

12:15 pm – 1:15 pm

1:15 pm – 2:15 pm

1D — Paper Industry, Forest Products

Advances in Fiber Refining Processes

This session highlights refining plates that are custom designed and manufactured based on the characteristics of the wood stream. Custom designed plates can pull fibers apart rather than break them into shorter lengths. In addition, high-strength stainless steel bars welded into the plates provide precise edges that ease refining. Benefits include stronger paper and less mechanical load on motors.
Speaker: Pat Theut, Kee-Met, Ltd.

Global Energy Savings and Environmental Effects of New Thermomechanical Pulping Technologies

This session will highlight the RTS™ process. RTS is a high-intensity thermomechanical pulping process that preserves pulp strength and optical properties; this is achieved by rapid heating of wood fibers while maintaining darkening reactions in a stabilized window of operation.
Speaker: Marc Sabourin, Andritz, Inc.

2:30 pm – 3:30 pm

Online information

For more conference information or to register online, check out focusonenergy.com/calendar and click on "IOF Symposium."

General information

A map and agenda will be sent with your conference confirmation. If you have any special needs (e.g., dietary, physical), please let us know at the time of registration. All requests will be kept confidential.

Break / Poster Presentations

2C — Metalcasting, Forest Products, Chemicals and Plastics, Glass, Water/Wastewater Industries, All Industries

Heat Recovery at a VOC Incineration Facility

In this IOF demonstration project based at a metalcasting facility, heat was recovered from the high-temperature exhaust of an incinerator used to destroy volatile organic compounds.
Speaker: To Be Determined

Laser Ultrasonic In-Process Inspection

Laser ultrasonic (LUS) analysis uses a pulsed laser to generate sound waves in a sample. Learn about a LUS sensor that allows noncontact, nondestructive measurement of bending stiffness, shear rigidity and thickness of web-manufactured materials (such as paper, sheet metal and glass) moving at production speeds.
Speaker: Paul Ridgway, Institute of Paper Science and Technology

Lunch / Poster Presentations

2D — Biobased Processes Industry, All Industries

Design, Construction and Commissioning of a 60-kW Microturbine Demonstration Facility

This session describes a joint project between Wisconsin's Focus on Energy program, the Milwaukee School of Engineering, the City of Milwaukee and We Energies to develop a 60-kW microturbine demonstration facility.
Speakers: Glenn Wrate, Michael Swedish and Lee Greguske, Milwaukee School of Engineering

Fuel Gas Generation via the Liquid-Phase Reforming of Biomass-Derived Oxygenated Compounds

Liquid-phase catalytic reforming can generate either hydrogen-rich or high-energy fuel gas from oxygenated compounds such as glycerol and sugar alcohols. This process enables the utilization of biomass energy stocks present in the U.S. This session will feature the demonstration of an innovative, aqueous-phase carbohydrate process that produces fuel cell-grade hydrogen from glycerol.
Speakers: Randy D. Cortright, Ph.D. and Ken Kenyon, Vivent Energy Systems, LLC

Closing General Session

Questions?

Symposium content comments or questions? Contact Brenda Jessen at 608.238.8276 x 128, bjessen@ecw.org.

Registration-related questions?

Contact Jaime Barbian at 800.466.4631 x 120, jbarbian@ecw.org.

3C — Water/Wastewater, Food Processing, Forest Products Industries

Electro-Ionic Biosolids Processing for Class A Qualification

Electro-ionic technology is a method to process Class A biosolids in wastewater treatment facilities. This case study demonstrates that this technology is feasible, energy efficient and cost effective. Learn how electro-ionic technology works under a variety of flow and load conditions, making it suitable for application in other treatment facilities.
Speaker: Kenneth J. Schlager, Ph.D., P.E., President, Bioelectromagnetics, Inc.

Energy Efficient Pumping of Wastewater: A Revolutionary New Design

This session will describe the N-Impeller, an innovative design for wastewater pumping. The N-Impeller eliminates contaminant clogging and reliability problems by avoiding the buildup of fibers, plastics and rags on the leading edges of the impeller. Tests have demonstrated large opportunities for savings.
Speaker: James F. Fischer, PE, ITT Flygt Corporation

3D — Paper Industry

Fiber Recovery from Waste Paper: A Breakthrough in Repulping Technology

Converting paper to its final product sometimes produces wastes that are difficult if not impossible to recycle with conventional technology. This session describes a new technology that cost effectively recovers quality fiber from wastes that would otherwise be landfilled.
Speaker: Keith Picard, Fiber Recycling Technologies, Inc.

The State of the Paper Industry in Wisconsin: The Paper Industry Economic Cluster Initiative

This session will highlight a report written by the Wisconsin Paper Council on the state of the paper industry in Wisconsin. Mr. Schillinger will share findings from the report and present issues and initiatives being developed to keep Wisconsin's paper industry competitive in the global marketplace.
Speaker: Patrick Schillinger, President, Wisconsin Paper Council



Registration Form

Name (on badge) _____

Title _____

Organization _____

Address _____

City, State, Zip _____

Phone _____ Fax _____

E-mail _____

Make your track selections below.

Please preregister for the tracks. **Chose only one session in each time period.** Make your selection by marking an **"X"** in the box to the left of the track number and letter.

May 13, 2003	Session one	Session two	Session three
8:45 am – 9:45 am	<input type="checkbox"/> 1A	<input type="checkbox"/> 2A	<input type="checkbox"/> 3A
10:00 am – 11:00 am	<input type="checkbox"/> 1B	<input type="checkbox"/> 2B	<input type="checkbox"/> 3B
11:15 am – 12:15 pm	<input type="checkbox"/> 1C	<input type="checkbox"/> 2C	<input type="checkbox"/> 3C
1:15 pm – 2:15 pm	<input type="checkbox"/> 1D	<input type="checkbox"/> 2D	<input type="checkbox"/> 3D

(Agenda subject to change.)

Payment Information

Early bird: By April 23, 2003
\$79 per person

Regular: After April 23, 2003
\$99 per person

Indicate type of payment: **Check enclosed** (please make check payable to: Energy Center of Wisconsin) **VISA** **MasterCard**

Credit card # _____ exp. date ____ / ____

Credit card v-code _____
 (from the signature strip on the back of your credit card)

Name on card _____

Signature _____

Energy Center of Wisconsin FEID# is 39-1656021

PLEASE NOTE: If paying by credit card, Energy Center of Wisconsin will appear on your statement.

Three easy ways to register

Mail the form to:
 (with credit card number or check)

Fax the form to:
 (with credit card number)
 608.238.0523

Online at:
focusonenergy.com/calendar
 Click on "IOF Symposium."

IOF Symposium
 595 Science Drive
 Madison, WI 53711

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REFUND POLICY If the program is not held for any reason, our liability is limited to the refund of the program fee.

How to register

By mail: Complete and return the attached registration form. Or online: Click on "IOF Symposium" at focusonenergy.com/calendar.

Continuing education units

You can receive CEUs for participating in this symposium. Ask registration staff for the appropriate paperwork. For more information call 800.466.4631.

Cancellations, refunds and substitutions

Full refunds are given if cancellations are received before May 6, 2003. Cancellations received after this date will be subject to a cancellation fee of \$25. There are no refunds for no-shows. You may substitute attendees; please bring your information to the event if these substitutions occur after May 6, 2003.