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Expo 4: Focus on common challenges, opportunities facing energy-intensive, resource-based industries

OIT will host its 4th Biennial Industrial Energy Efficiency Symposium and Expo from February 19-22 in Washington, DC. Expo targets the nine largest energy-using "Industries of the Future"—including chemicals, petroleum, paper and forest products, agriculture, steel, aluminum, metalcasting, glass and mining—that together account for nearly 75% of all energy used in industry. These industries play a key role in our economy accounting directly for about 5% of US GDP. Their total shipments exceed \$1 trillion annually and they employ over 3 million people.

Many Shared Interests

While each of these industries is unique, "They share many common interests in addition to high energy intensity," said Lou Sousa, OIT's Expo 4 Coordinator. "For example, they are largely capital-intensive, commodity supplying industries. They jointly face tough challenges in the environment, technology development, foreign competition and competition for workers. In addition, there are many areas where they supply common industries so intermaterial competition is another shared interest. Expo provides a unique opportunity for these industries as well as those who have an interest in them to explore their common interests, network and consider numerous previously unexplored opportunities," said Sousa.

New Insights

"Expo participants will have the opportunity to gain insights and perspective that can't be attained at 'single industry' events," said Denise Swink, DOE's Deputy Assistant Secretary for Industrial Technologies. "Attending Expo will be like increasing your universe of relevant problem-solving and networking opportunities multi-fold," she said.

Expo 4 will be strategically organized around many of the topics of greatest collective interest to energy-intensive U.S. industries. Experts from different industries will share insights about such areas as supply chain management, emerging applications of traditional materials, the growing digital economy and internet exchange trading, global climate change, competing globally, and work force development. In addition, for the first time Expo will feature a panel of top-notch Wall Street analysts who will share their views on the short- to mid-term outlook for several energy-intensive industries.

Special Insert: OIT Clearinghouse Trifold

Further enhancing Expo's focus will be Eamonn Fingleton's keynote address. Fingleton, a former editor of both *Forbes* and *The Financial Times*, is author of the landmark book, *In Praise of Hard Industries: Why Manufacturing, Not the Information Economy, Is the Key to Future Prosperity*. "His contrarian and well-documented message—that the belief in a shift from a manufacturing economy to a post-industrial economy is premature at best—is sure to resonate well with many attending Expo 4.

New Exhibits

Attendees will also be able to uncover new partnership opportunities in Expo's highly-trafficked exhibit hall, where as many as 150 OIT partners will be showcasing leading edge technologies. "It's a unique opportunity for all attendees to discover useful technologies that are emerging across a number of industries," said Swink.

In addition, for the first time OIT's Expo organizers are planning a "one-stop-shop"

(continued on page 12)



Expo 4 speakers to look far, wide, and ahead for basic industries

Expo coordinators have been working overtime to provide an informative program featuring a line-up of top-flight speakers. Expo 4 participants can look forward to a wide selection of exceptionally informative and insightful presentations about an array of topics of interest across all the Industries of the Future. The overall program is broken down into four speaker tracks covering manufacturing megatrends, technology and environment, domestic and international market outlook and investment potential, and human resources. **For additional information about the major tracks, panel sessions or speaker backgrounds, visit Expo 4's website at <http://www.oitexpo4.com/program2.html>.**

KEYNOTE SPEAKERS

Mr. Eamonn Fingleton, renowned author and former editor of *Forbes* and *The Financial Times*, will be keynote speaker. Mr. Fingleton's most current book, **"In Praise of Hard Industries: Why Manufacturing, Not the Information Economy, Is the Key to Future Prosperity"** takes a look at the economic resurgence of US manufacturing. **Sen. Jay Rockefeller of West Virginia** will also be a keynote speaker. Energy-intensive, resource-based industries are critical to WV's economy, and he will describe his state's effort to fortify the competitiveness and vitality of these industries in WV.

TRACK A: MANUFACTURING MEGATRENDS

Lean Manufacturing

- **Panel Moderator:** Richard McCormack, publisher of *Manufacturing News*
- Daniel Roos, Associate Dean for Engineering Systems; Japan Steel Industry Professor of Engineering, MIT; coauthor of "The Machine that Changed the World"
- Ken Kreaflle, General Manager, Quality Control/Quality Engineering, Toyota Manufacturing Co.-Kentucky
- Dave Squier, Consultant, Carlyle Group, and former CEO of Howmet International

Supply Chain Management

- **Panel Moderator:** Dr. James Rice, Director, Integrated Supply Chain Management Program, MIT
- James Olson, Director of Supply Management at John Deere Co.
- John Wilson, Director, B2B/Supply Chain Management, IBM

- John Oleson, author of *PATHWAYS TO AGILITY—Mass Customization in Action*; formerly of Dow Corning

The Potential Impact of Internet Trading Exchanges on Industries of the Future

- **Panel Moderator:** Chip Julien, Consultant, Deloitte Touche
- Michael Levin, founder & CEO of e-Steel
- Andy Dupont, Director of eMarket Channels, Dow Chemical Co.
- Leah Knight, Principal Analyst, E-Business Div., Gartner Group

Contract Manufacturing: Threat or Opportunity?

- **Panel Moderator:** Joe Wirth, Chairman, National Research Council Board on Manufacturing and Engineering Design, former Chief Technical Officer, Raychem Corp.
- Jerry Labowitz, First VP of Fundamental Equity Research, Merrill Lynch
- Vincent DiPalma, Vice President, New Product Introduction & Technology, Solectron Co.
- Margaret Walker, Business Director, Contract Manufacturing Services, Dow Chemical Co.

TRACK B: TECHNOLOGY & ENVIRONMENTAL TRENDS IN THE INDUSTRIES OF THE FUTURE

Emerging & Future Trends in the Application of Traditional Materials

- **Panel Moderator:** Darryl Tenney, Chief, Materials Div., NASA-Langley Lab
- **Steel:** Steve Denner, Chairman, AISI's Committee on Manufacturing Technology and VP, Research & Technology, National Steel Co.
- **Polymers:** Donald Duncan, President, Society of the Plastics Industry
- **Glass:** Bruce Jennings, President & CEO of Schott Glass Technology
- **Paper & Wood Products:** Del Raymond, Director, Strategic Energy Alternatives, Weyerhaeuser Corp.

Long Term Technology Trends with Potential Major Impacts on the Industries of the Future

- **Panel Moderator:** Ed Starke, Chairman of the Natl. Materials Advisory Board and Professor, Univ. of VA

- **Bio-technology processes/products:** Dr. Ganesh Kishore, recently retired as Lead Technologist, Neutraceuticals Div., Monsanto Co.
- **Nano technologies:** Jim Murday, Acting Director, National Nanotechnology Initiative Coordinating Committee
- **Digital/electronic economy:** Dalibor Vrsalovic, Chief Technology Officer, Intel Corp.

Industry, Global Climate Change and the Environment

- **Panel Moderator:** Dr. Don Ritter, Exec. Dir., Natl. Environmental Policy Inst., former U.S. Congressman from PA
- Dan Lashoff, Senior Scientist, National Resources Defense Council
- Fred Singer, President & Founder, Science and Environmental Policy Project
- Ed Mongan, Manager, Environmental Stewardship, Dupont Co.

TRACK C: "INDUSTRIES OF THE FUTURE" GLOBAL MARKETS & INVESTMENT POTENTIAL

The Market Outlook for "Industries of the Future"

- **Panel Moderator:** Connie Holmes, Senior Vice President-Policy, National Mining Assoc.
- **Oil:** John Parry, Vice President, John S. Herold Co.
- **Paper & Forest Products:** John Linehan, Investment Advisor at T. Rowe Price Associates
- **Chemicals:** Sergey Vasnetsov, Research Analyst, Lehman Brothers, Inc.
- **Metals & Mining:** Daniel Roling, First Vice President, Merrill Lynch

Global Markets and Industries

- **Panel Moderator:** Karen Walker, U.S. State Department
- **Western Europe:** Speaker TBD
- **Asia:** Speaker TBD
- **Latin America:** Speaker TBD

Energy Intensive Industries: Valuation by Securities Analysts and Investors

- **Panel Moderator:** TBD
- Ellen Hannon, Analyst, Bear, Stearns & Co.
- Other speakers invited

TRACK D: HUMAN RESOURCES

Workforce Development

- **Panel Moderator:** Leo Reddy, President of the National Alliance for Advanced Manufacturing
- Mike Williams, Director-Manufacturing, GM Powertrain Group, GM Inc.
- John Rauschenberger, Chairman, Mfg. Skills Standards Council and Manager, Personnel R&D, Ford Motor Co.
- Ken Breeden, Commissioner, Georgia Dept. of Technical and Adult Education
- Dave Dwulit, Director, Nevada Manufacturing Extension Program

Engineers of the Future

- **Panel Moderator:** John Green, Vice President, Technology, The Aluminum Assoc.
- Tom Danjczek, President of Steel Manufacturers Assoc.
- Dr. Stanley Johnson, Vice Provost Extension, and Professor of Economics, Iowa State Univ.
- Additional speaker invited

Winners of "High School Engineering Challenge" to be recognized at Expo

OIT and the Stephen and Elizabeth Bechtel Foundation are co-sponsoring this year's High School Engineering Challenge. This year's competition took place in November/December, 2000. Over 100 different sites (mostly college campuses) in 45 states hosted participating teams.

The High School Engineering Challenge was designed and developed approximately 20 years ago by the Junior Engineering Technical Society. The challenge, also known as TEAM+S (Tests of Engineering Aptitude, Mathematics and Science), is a unique and exciting nationwide academic program culminating in a one-day, engineering problem competition involving teams of high school students. Students in grades 9-12 are eligible to participate in the challenge; however, students must form teams of four to eight members.

The test is divided into two equal parts each consisting of ten multiple-choice problems. Each problem has ten questions, nine of which focus on the Industries of the Future. Test questions were prepared and implemented by OIT employees. Winners will be determined in late January, 2001 and awarded a trip to Expo 4 where they will be recognized in a formal awards ceremony on Tuesday, February 20.

**Register for Expo 4 at
www.oitexpo4.com**

EXPO PREVIEW

OIT's annual awards: And the winner is....

Expo is an exciting time to recognize and award outstanding contributors who join forces with OIT to increase energy efficiency and productivity for a better tomorrow. This year's Expo will feature the 2nd Annual OIT Partner- and Technology-of-the-Year awards. These award winners will be joined by OIT's first-ever Plant-of-the-Year award winner. Nominated individuals, technologies and plants and OIT's Awards Selection Panel members are listed in tables below.

OIT's **Partner-of-the-Year** exhibits extraordinary initiative and commitment to advancing the goals of IOF partnerships. He or she promotes and advances energy efficiency as a national goal above and beyond the needs of his/her organization or industry, and engages in innovative approaches to joint public-private partnerships. OIT's Partner-of-the-Year also demonstrates vision in outlook about the potential benefits of industry-government partnerships.

Nominees: OIT Partner-of-the-Year 2001

David Ashcraft, SMP International
Dr. Subodh Das, Center for Aluminum Technology, Univ. of Kentucky
Robert DeSaro, Energy Research Co.
Raymond Donahue, Brunswick Corp.
Michael Greenman, Glass Manufacturers Industry Council
Carl Irwin, West Virginia University
Stanley Johnson, Iowa State University
Richard Lawson, National Mining Assoc.
Paul Mikkola, Hitchiner Manufacturing Co.
Delmar Raymond, Weyerhaeuser Co.
Dr. Tyler Thompson, Dow Chemical Co.

OIT's **Technology-of-the-Year** will go to an OIT-supported technology that exhibits exceptional commercialization potential and significant potential for energy efficiency improvement, economic benefit and/or environmental benefit. The winner will also exhibit considerable actual or potential widespread use in industry.

Nominees: OIT Technology-of-the-Year 2001

Clean Fractionation – An Inexpensive Source of Cellulose for the Production of Cellulose Plastics
IDEX™ Kiln Scrap Decoater
The Infinity™ Nylon (Carpet) Renewal Process
Characterization Tool for the Wood and Pulp Industry
Castview
METHANE de-Nox Reburning Process for Wood Waste, Sludge, and Biomass Fired
Polylactic Acid Polymers

OIT's **Plant-of-the-Year** will be based on documented energy savings from project(s) implemented during the qualification period. Among other factors that enter into the selection process for the new award include:

- the potential for replication of the technology within the plant, company and US manufacturing;
- the plant's history of progressive efforts to reduce energy usage;
- its continuous improvement strategy for energy efficiency and related process and technology improvement opportunities;
- its project implementation plan, funding commitments, and on-going validation of completed projects.

Nominees: OIT Plant-of-the-Year 2001

Alcoa Co., Lafayette, IN
Amcast, Wapakoneta, OH
Boise Cascade Co., International Falls, MN
Rohm & Haas Inc., Deer Park, TX
USX-Edgar Thomson Works, Pittsburgh, PA
Weirton Steel Co., Weirton, WV

OIT Awards Selection Panel 2001

Peter Angelini, ORNL
Robert Boteler, US Electrical Motors Div Emerson Electric
Frank Burke, Consol Coal
Kristi Growdon, Washington State Univ.
Glen Hahn, Spirax Sarco
Vince Henry, Henry Technology Solutions
Gunnar Hovstadius, ITT Flygt
Don Johnson, Consultant
Robert Johnson, Consultant
Bob Kendall, Alzeta
Jerry Meyers, Potlatch Corporation
Wayne Perry, Kaeser Compressors
Paul Reep, Milestone Technology, Inc.
Elwin Rooy, Consultant
Fred Schoeneborn, Exxon-Mobil
Steve Schultz, 3M Co.
Jack Solomon, Praxair
Richard Sussman, Allegheny Ludlum
Joe Vehec, American Iron & Steel Institute
Harry Ward, Consultant

Expo's Thursday break-out sessions will focus on industry-specific topics

On Thursday, February 22, 2001, OIT's Industries of the Future teams will host a series of industry-specific workshop sessions at the Washington Hilton. All Expo attendees are invited to attend these sessions which will also be open free of charge to others who have not registered for the full Expo conference but who are interested in one or more of the Thursday workshop topics.

The **Aluminum Team** will host an open session from 8:45am to 11:15am to address recent developments in aluminum markets. Speakers will include Richard Klimisch (The Aluminum Assoc.) and Michael Wheeler (Alcan Labs) who will discuss *Aluminum in Automobiles: A Progress Report*. Randolph Kissell from TGB Partnership will discuss *Aluminum in Architecture* and Dr. John Green from The Aluminum Assoc. will talk about *Aluminum in the Marine Environment: An Update*.

The **Steel Team** workshop will be held from 8am until 3:30pm and will explore the possibility of establishing a steel-utility partnership. Representatives from the steel, electric utility and gas utility industries will give their perspectives. Then facilitated sessions will identify issues and opportunities for potential collaboration and formulate possible next steps. This will be a unique opportunity to network, exchange information and foster an on-going relationship.

From 9am to noon, OIT's **Metalcasting Team** and the Cast Metals Coalition will hold an interactive event drawing on the best minds in the industry to "Focus on the Future." A panel of highly regarded industry leaders will set the pace by offering their perspectives of future needs and challenges confronting metalcasting in the new millennium.

The **Mining Team** will host a Federal inter-agency meeting to

discuss and coordinate mining-related topics and issues. For more information contact Joni Marechaux at 202-586-8501.

The **Glass Team** will sponsor a Glass Melting Technologies of the Future workshop session highlighting various theoretical and practical possibilities for radical technology change. Barriers and alternative approaches will be addressed in formal presentations and roundtable discussion.

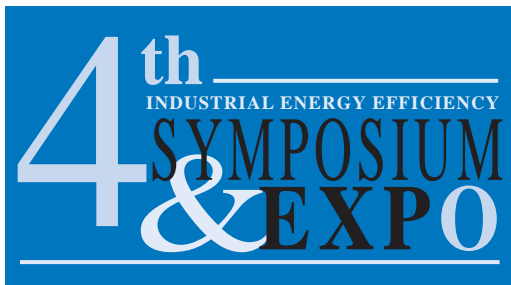
The **States IOF Team** will host a workshop from 9:00 a.m. to noon. The meeting will enable participants to discuss further implementation of State IOF activities. State agencies and universities participating in the State IOF are especially encouraged to attend, although the session will be open to all interested parties.

In addition to OIT Team-hosted sessions, **OIT and the International Energy Agency** are co-hosting a workshop on *Government-Industry Cooperation to Improve Energy-efficiency and the Environment through Voluntary Action* from 8am to 6pm. The workshop will focus on: (1) elements of success and "good practice" in implementing voluntary approaches to energy and environmental policy in IEA/OECD member countries; (2) the effectiveness of voluntary programs in improving industrial energy efficiency; and (3) the efficacy of various models of government-industry cooperation.

Finally, in addition to the above Thursday sessions, OIT's **Chemical Team** plans to hold its workshop at the Washington Hilton at 1:00pm on Monday, February 19, 2001. This session will allow attendees to (1) celebrate the successes of Vision 2020; (2) announce new steering group organization; (3) detail a business value proposition; (4) announce Vision 2020 challenge; and, (5) review current Federally-sponsored R&D applicable to the chemical industry.

State IOF webpage design contest winners to be recognized at Expo

OIT's **States Team** has created a special award for one of the States participating in the State IOF program. The States Team will judge newly created State IOF web pages (or improved existing web pages) that describe that State's IOF program and process. The evaluation criteria include content and design that simplify use and exemplify creativity and uniqueness. The State judged to have the best webpage will receive a Silver-level sponsorship for Expo, which includes a free booth space and two free admissions. The State's team will also recognize the two runners up during Expo.



February 19-22, 2001
Washington D.C. Hilton & Towers

Registration Form

Complete online registration available at www.oit.expo4.com.

Detach and send to: Meeting Management Services, OIT Expo Office
1201 New Jersey Ave. NW
Washington D.C., 20001

You may fax your registration to (202) 624-1766 if paying by credit card.

First Name	Middle Name	Last Name	First Name for Badge
Title		Organization	
<input type="checkbox"/> Industry	<input type="checkbox"/> Federal Agency	<input type="checkbox"/> DOE National Laboratory	<input type="checkbox"/> Other
<input type="checkbox"/> State/Local Government	<input type="checkbox"/> University/Institute	<input type="checkbox"/> Association	
Address	City	State	Zip+4
Daytime Phone	Fax	E-mail	

Track you plan to attend:

- Track A: Manufacturing Megatrends Track B: Technology Trends, Environmental Issues
 Track C: Global Markets & Investment Potential Track D: Human Resources

Your primary area(s) of interest (check as many as apply):

- | | | | | |
|--|--|--|--|--|
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Aluminum | <input type="checkbox"/> Chemicals | <input type="checkbox"/> Forest Products | <input type="checkbox"/> Glass |
| <input type="checkbox"/> Metalcasting | <input type="checkbox"/> Mining | <input type="checkbox"/> Petroleum | <input type="checkbox"/> Steel | <input type="checkbox"/> Combustion |
| <input type="checkbox"/> NICE ³ | <input type="checkbox"/> Motor Systems | <input type="checkbox"/> Sensors and Controls | <input type="checkbox"/> Advanced Industrial Materials | <input type="checkbox"/> BestPractices |
| <input type="checkbox"/> Industrial Assessment Centers | <input type="checkbox"/> Steam Systems | <input type="checkbox"/> Combined Heat & Power | <input type="checkbox"/> Inventions & Innovation | |

Registration for:

- Early Registration \$425 (prior to Jan 1, 2001)
 Registration \$495 (on or after Jan 1, 2001)

Payment Method:

Check enclosed. Make payable to "OIT EXPO" - Check will be deposited by Meeting Management Services, Inc. d/b/a OIT Expo Federal ID# 54-1811642

Credit card: Visa Mastercard American Express - Charge on your statement will appear as "Meeting Management Services"

Name as it appears on card: _____

Card Number	Expiration	Authorizing Signature
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Refunds will be processed minus a \$25 collection fee, if received in writing by Jan. 1, 2001. After that date, no refund will be made

Special Needs:

Please check here if you require special assistance. Attach written description of needs.

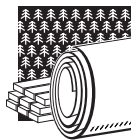
For further information, please call 202-624-1790.

Agriculture ***New R&D and education projects selected***



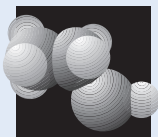
The **Agriculture** Team has selected six new R&D projects, and, for the first time, six Education Initiative projects for funding. The R&D projects address key barriers to processing or using plant material that have been identified by industry's technology roadmap. The education grants encourage universities to design multi-disciplinary academic programs that will help equip graduate-level students to excel in the emerging bio-based products industry. New solicitations for both R&D and Education Initiative projects will open shortly. See www.oit.doe.gov/agriculture for details.... The Team has been very active in Iowa recently. That State's Corn Growers Assoc. hosted the Team Leader and Denise Swink on tours of a corn dry mill/ethanol plant and grain harvest and dairy operations near New Hampton, IA, and at a community meeting in rural northeast Iowa. The Team also met with a citizens' advisory panel at Iowa State Univ. to help guide a new state-IOF program, initially focused on the bio-based products and **Metalcasting** industries.... Team members also addressed various forums at Kansas State Univ. and Buffalo, NY.... The Team traveled to Dupont Corp. in Wilmington, DE to discuss increased collaboration with Dupont's recently created new business unit for bio-based products and bio-processing. (Contact: Doug Faulkner, 202-586-2119)

Forest Products ***Project wins R&D 100 Award***



A **Forest Products** Team project has been selected as a 2000 R&D 100 winner by *R&D Magazine*. The project, "Characterization Tool for the Wood and Pulp Industry," uses near-infrared spectroscopy and multivariate statistical techniques to quantify the chemical composition of wood chips. This enables mill operators to adjust the papermaking process and optimize energy usage and improve productivity. Estimated annual benefits: over 1.5 trillion BTU/year, reduced carbon emissions (30,000 tons) and NOx and SO2 emissions (700 tons). Project partners: NREL, Weyerhaeuser, Champion, Westvaco, Georgia-Pacific, Rayonier and Mead.... Another Team project recently won an AF&PA Environmental and Energy Achievement Award. The innovative METHANE de-NOX(R) process was developed by IGT, and demonstrated on a boiler at a Boise Cascade mill. The demonstration allowed the mill to increase the volume of solid process waste burned by 400% with no increase in NOx emissions.... An innovative sparker process developed with OIT assistance is being demonstrated at Augusta Newsprint, an Abitiby Consolidated paper mill. The process detackifies recycled materials using a mechanical, rather than chemical, process, decreasing environmental impact and reducing costs. The Abitiby mill will also participate in a plant-wide assessment with OIT's **Best Practices** Team. With the sparker technology and new best practices modifications in place, the mill will host a technology Showcase later in 2001. (Contact: Valri Robinson, 202-586-0937)

Chemicals ***Workshop re-examines Vision 2020 strategy***



Together with its partners from AIChE, ACS, the American Chemistry Council, the Council for Chemical Research, and the Synthetic Organic Chemical Manufacturers Assoc., OIT's **Chemicals** Team sponsored a meeting to reexamine key strategies of the Vision 2020 partnership. Titled *Vision 2020: Next Steps*, the workshop examined progress to date, and suggested certain areas for redirection. Among recommendations emanating from the workshop:

- The scope of existing roadmaps should be expanded to include the energy and process design portion of bioprocessing, catalyst design, and adsorbents for separations;
- Three new technical topics not covered by the original

vision document should be explored: New materials for the electronics industry, nanoscience, and inorganic chemicals;

- The original "Vision" areas of supply chain management, information systems and manufacturing should be combined into "chemical industry operations," and expanded to address additional topics including e-commerce, small- and mid-sized company needs, distributed processing and more;
- A Vision 2020 steering group should be formed to represent the diverse chemical industry.

Workshop participants also laid the groundwork for a comprehensive communications strategy. They identified 20 distinct audiences with a clear stake in the future of the chemical industry, and six key messages that need to be aggressively communicated. These include the need to improve the industry's competitiveness and the need to increase the efficiency of the public technology investment process. (Contact: Paul Scheihing: 202-586-7234)

Aluminum

Eight new R&D projects selected



The **Aluminum** Team selected 8 new cost-shared R&D projects. Four relate to aluminum production and four to semi-fabrication. All address challenges identified as high priority in the industry's technology roadmap. Four of the new projects are listed below. Visit the Team's website (www.oit.doe.gov/aluminum) for a complete list.

- "Inert Metal Anodes for Primary Aluminum Production"; partners: Argonne National Lab, Noranda Inc.
- "Energy Efficient Isothermal Melting (ITM) of Aluminum"; partners: Apogee Technology Inc., Commonwealth Aluminum Co., Drexel Univ., Wabash Alloys
- "Improving Energy Efficiency in Aluminum Melting"; partners: Secat Inc. and 12 others
- "Coolant Characteristics and Control in Direct Chill Casting of Aluminum"; partners: INEEL, Alcoa Technical Ctr., Univ. of CA

A plant-wide energy assessment was completed at Alcoa's Lafayette (IN) operations with funding from the **Best Practices** Team. Potential improvements were identified in compressed air systems, ingot cooling water recirculation, extrusion pumps, furnace heat recovery and other areas that could save up to \$2 mil/year, with capital costs returned in about 14 months. (Contact: Sara Dillich, 202-586-7925)

Metalcasting

Team to co-fund 16 new R&D projects



The **Metalcasting** Team, in conjunction with diverse industry partners, selected 16 new cost-shared R&D projects. More than 100 companies, national labs, academic institutions, and others will partner with OIT in these efforts. A partial listing of new team projects is listed below. Visit www.oit.doe.gov/metalcasting for a complete listing.

- "Computer Modeling of the Mechanical Performance of Die Casting Dies"
 - "Development of Technical Data to Validate Performance of Foundry Byproducts in Hot-Mix Asphalt and Controlled Low-Strength Material"
 - "Expanded Work Scope - Service Performance of Welded Duplex Stainless Steel Castings and Wrought Materials (Part II)"
 - "Ultrahigh-Speed Measurement of Internal Die Cavity Temperature Profiles for Process Control and Model Verification"
 - "Grain Refinement of Permanent Mold Cast Copper-Base Alloys"
 - "Castability Assessment and Data Integration"
 - "Development of a Computational Fluid Dynamics Tool for Modeling the Blowing and Steaming of Expandable Polystyrene (eps) Pattern for Lost Foam Castings"
 - "Metallic Reinforcement of Direct Squeeze Die Cast Aluminum Alloys for Improved Strength and Fracture Resistance"
 - "Prevention of Porosity in Iron Castings"
- (Contact: Harvey Wong, 202-586-9235)

Steel

Team hosts CFD workshop



The **Steel** Team coordinated a successful meeting of steel producers, equipment manufacturers, National Lab employees, academic experts and other interested parties to identify opportunities for using computational fluid dynamics (CFD) to improve efficiency and productivity in the U.S. steel industry. The meeting featured a presentation by Dow Chemical, which is partnering with OIT's **Chemicals** Team to forward leading edge CFD technology. Diverse steel industry representatives described their current CFD capabilities and interests to fellow participants, and several opportunities and next steps were identified.... Three valuable reports sponsored by the Team are now available.



"*Energy and Environmental Profile of the U.S. Steel Industry*" provides updated baseline information on cokemaking, ironmaking, steelmaking, refining and casting, forming and finishing. The report provides the most current estimates of energy use by fuel type for these processes, characterizes air emissions, effluents and other residuals, and describes existing treatment and control technologies. The report is especially valuable when used with "*Energy Use in the U.S. Steel Industry: An Historical Perspective and Future Opportunities*," by Dr. John Stubbles, and "*Theoretical Minimum Energies to Produce Steel*" by Dr. Richard Fruehan, also recently published. Visit www.oit.doe.gov/steel to download the reports or call OIT's Clearinghouse at 1-800-862-2086 for copies. (Contact: Peter Salmon-Cox, 202-586-2380)

Petroleum

Results of solicitation announced



The **Petroleum** Team and its industry partners have selected five new R&D projects for funding, including:

- “Rotary Burner Demonstration - Phase I;” partners: Calcos Engineering, Equilon LLP; Shell/Texaco Group, A.P.I., Gas Consultants Inc., Precision Manufacturing
- “Assuring Mechanical Integrity of Refinery Equipment through Global On-Stream Inspection;” partners: Davidson Instruments, Inc., a consortium of major U.S. oil companies, and others
- “Energy Saving Separations Technologies for the Petroleum Industry: An Industry-University-National Lab Research Partnership;” partners: Colorado School of Mines, Chevron Research and Technology Co., Marathon-Ashland
- “Broadening Enzyme Selectivity and Improving Activity for Biological Desulfurization and Upgrading of Petroleum Feedstock;” partners: Univ. of Tennessee, ORNL, Texaco, Exxon
- “Micro-GC Controller for Petro Chemical Use;” partners: ONIX Process Analysis, Inc., Phillips Petroleum, SNL

A second solicitation—for DOE lab-led industry projects—will be announced soon. Visit www.oit.doe.gov/petroleum for details.... Paramount Petroleum’s California refinery was recently selected to participate in a cost-shared, plant-wide assessment by OIT’s **Best Practices** program. The assessment will focus primarily on thermal efficiency opportunities including combined heat and power. (Contact: Jim Quinn, 202-586-5725)

Mining

Mineral processing technology roadmap published

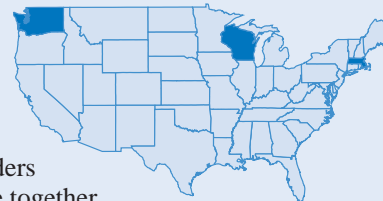


The Mineral Processing Technology Roadmap, developed by the mining industry and facilitated by OIT’s **Mining Team**, is available at www.oit.doe.gov/mining. The roadmap is a consensus report from a diverse group of mining companies, equipment suppliers, technology companies, leading academics,

and others. The roadmap discusses technologies in the areas of mineral preparation, physical separations and chemical separations.... The Team with the National Mining Assoc. has selected 16 new R&D projects from the Mining Crosscutting Technologies solicitation. New partners include 62 companies, 11 universities, four DOE labs and three government agencies. Selected projects are listed on the Team’s website. (Contact: Toni Grobstein Maréchaux, 202-586-8501)

States Corner

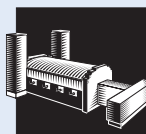
In September, Massachusetts conducted the second phase of its State IOF work bringing industry leaders from all over the state together



for continued development efforts. Senator Edward Kennedy addressed the group via video supporting the State’s efforts.... The Washington State IOF kickoff meeting was also held in September. Martha Choe, Secretary of the State’s Office of Trade and Economic Development, signed an agreement to cooperate with DOE/OIT. Washington’s efforts will focus on mining, agriculture, aluminum and forest products.... Wisconsin continues to develop both a metalcasting and forest products state priority list and develop state teams to promote its state “Industries of the Future” efforts.... The FY 2001 State Special Project solicitation has been released. OIT seeks proposals for grants to implement and further State IOF efforts. Visit www.eren.doe.gov. (Contact: Sandy Glatt, 202-586-3897)

Glass

Five new R&D projects chosen



The **Glass** Team has selected five new cost-shared R&D projects that will reduce energy use and environmental impacts and enhance the competitiveness of the nation’s glass industry. They are:

- “Measurement and control of glass feedstocks”; researcher: Energy Research Co.
- “Monitoring and control of alkali volatilization and batch carryover for minimization of particulate emissions and crown refractory corrosion in glass melting furnaces”; researcher: Gallo Glass Co.
- “Development of process optimization strategies, models and chemical databases for on-line coatings of float glass”; researcher: PPG Industries
- “Development and validation of an Advanced Multiphase Glass Furnace Model”; researcher: Techneglas, Inc.
- “Development of a process for the In-house recovery and recycling of glass from glass manufacturing waste”; researcher: Argonne National Lab

The Team’s Program Review was held at ORNL. Principal investigators from several projects of interest to the industry described their projects’ status, expected results, and commercialization plans. (Contact: Elliott Levine, 202-586-1476)

INFORMATION CORNER

Current OIT Solicitation Schedule

Industry/Program	RFP	Proposals Due	Selections	Funding (approx)	URL (www.):
Aluminum IOF	2/01	5/01	7/01	\$1.5 mil	oit.doe.gov/aluminum
Aluminum National	2/01	5/01	7/01	\$1 mil	oit.doe.gov/aluminum
Aluminum University	12/00	3/01	6/01	\$600 K	oit.doe.gov/aluminum
IOF Supporting Industries	11/00	2/01	4/01	\$1.5 mil	oit.doe.gov/aluminum
Chemicals FY '02-'04	TBD	TBD	TBD	TBD	TBD
Mining	Fall/01	TBD	TBD	TBD	oit.doe.gov/mining
Petroleum Lab Call	1/01	3/01	4/01	\$500 K	oit.doe.gov/petroleum
Steel Challenge	11/00	2/01	5/01	\$500 K	oit.doe.gov/steel
Plant/Crop-Based Renewable Resources 2020 Vision (Research & Teaching)	11/00	1/01	3/01	TBD	oit.doe.gov/doiid/psd/solicit.html
Plant/Crop-Based Renewable Resources 2020 Vision (R&D)	1/01	3/01	5/01	TBD	oit.doe.gov/doiid/psd/solicit.html
Sensors & Controls	6/01	8/01	10/01	\$1 mil for FY 2002	oit.doe.gov/sens_cont/
Industrial Materials	3/01	6/01	TBD	\$3 mil for FY 2002	oit.doe.gov/cfcc/
Paper & Pulp Industry (Forest Products)	8/00	10/00 & 3/01	7/01	\$1 mil for labs &	oit.doe.gov/forest/pdfs/fy02finalrfp.pdf
Industrial Assessment Center	1/02	4/02	7/02	\$7 mil per year for FY 2002-2007	oit.doe.gov/iac
NICE ³	5/01	7/01	11/01	\$4 mil (cumulative)	oit.doe.gov/nice3/
Inventions & Innovation	5/01	7/01	11/01	\$2.9 mil	oit.doe.gov/inventions/
State Implementation of IOF—SEP Special Projects	11/00	2/01	5/01	\$2.8 mil	oit.doe.gov/states/statesiof.shtml
State Implementation of IOF—SEP Special Projects	11/00	2/01	5/01	\$350-\$400K with \$45-\$100K per award	oit.doe.gov/states/statesiof.shtml
Best Practices Program: Technology Deployments	11/00	3/01	5/01	\$2 mil for FY 2001	oit.doe.gov/bestpractices/
Best Practices Program: Technology Deployments	4/01	6/01	8/01	\$2.5 mil for FY 2002	oit.doe.gov/bestpractices/

Information in this table is subject to change and is periodically updated. For latest data, visit: www.oit.doe.gov/new/solicitations.shtml

INDUSTRY TRENDS

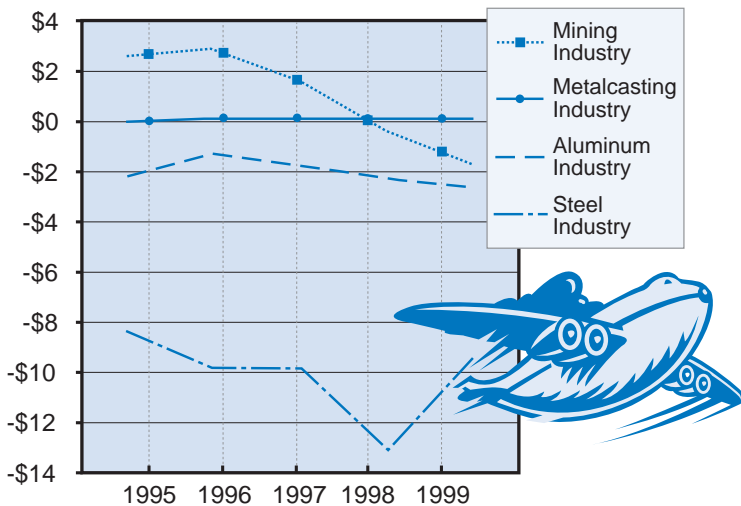
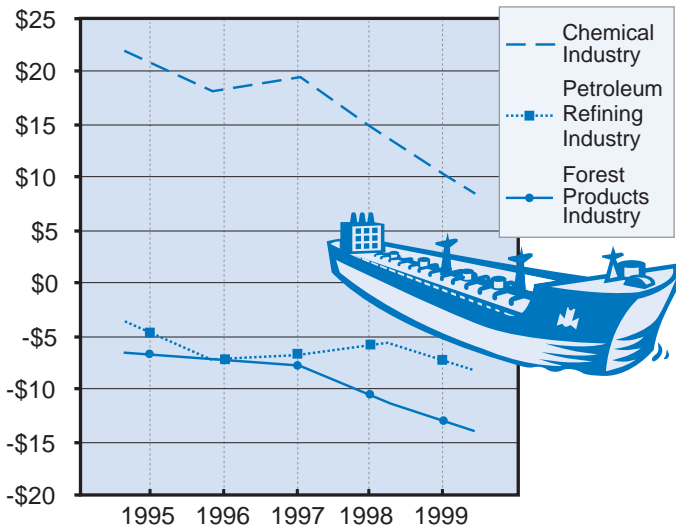
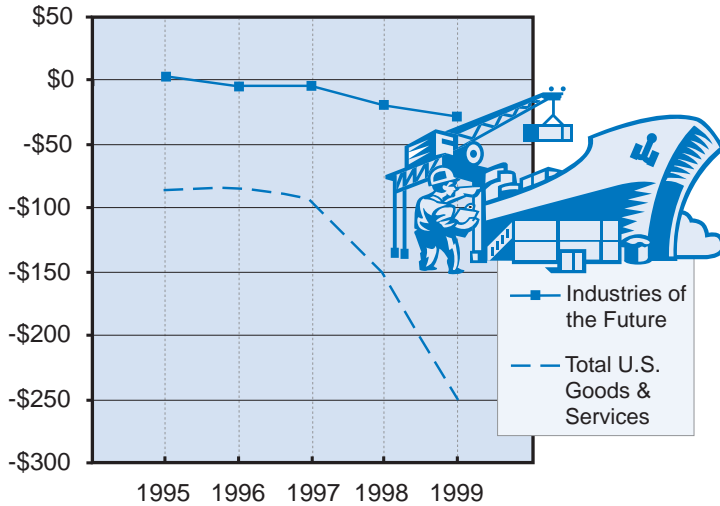
EDITORIAL

Expo 4: Why You Should Be There!

By Lou Sousa, Expo 4 Coordinator, and Managing Editor, *The OIT Times*



Trends in U.S. Trade Balance
(Billions of constant 1999 \$)



Expo 4 is fast approaching. And this year's event will surpass those of the past in several ways—as suggested in other parts of this issue of *The OIT Times*. But why should YOU come to Expo? You've been to numerous conferences that address the direct interests of—for example—the steel industry or the paper industry or the chemical industry. So what sets Expo apart?

The unique, and perhaps most worthwhile, aspect of Expo 4 is that it will enable you to see and hear first-hand about how many of the challenges you face in your firm and your industry are shared by other companies in other, related industries, too. Expo gives you an opportunity to learn more about how some of these companies have developed innovative solutions and approaches to your challenges that you might not have considered before.

For starters, what do the steel industry, the chemical industry and all the other nine energy-intensive “Industries of the Future” have in common? After all, each industry's raw materials are quite different. So too are their products. And the technologies that convert their raw materials into their products are all very different.

But—and you may not ever have thought of it this way—they share many things in common, as well.

For example, they supply common markets and customers. Consider, for example, the intermaterial competition in the auto market. Or the construction market. Or the container market. You can get food and beverages in steel, aluminum, paper, glass and polymer containers.

Obviously, the “Industries of the Future” are all energy-intensive industries who've been plagued recently by high energy prices. And they're capital-intensive, too. They're also largely commodity suppliers so foreign competition is especially intense. Jointly, they face real tough challenges in the environment. Technology development and competition for workers are other shared interests. And the internet? As they say, it changes everything! What does it mean for these industries—internally in their plants and offices—externally with their suppliers and customers?

Another shared concern for those in these industries: that the American media and public don't understand you, your role in the economy, the challenges you face. There is a widespread feeling of being overlooked and under-appreciated.

But collectively, your numbers are strong. Three million workers. A jobs-multiplier of 4. One dollar in every \$20 of GNP originates directly from your industries. A strong national defense? How could that be without a strong steel or aluminum or petroleum industry?

Expo provides a unique opportunity for people in or interested in these industries to explore their many common areas of interest, network and consider numerous previously unexplored opportunities.

Come to Expo. There's strength in numbers. Help build something new!

(continued from page 1)

opportunity in the Exhibit hall where attendees will be able to meet and discuss potential partnership opportunities with a broad cross-section of Federal agencies. This includes groups from DOE and its National Lab system as well as such agencies as Commerce, Defense, Transportation and so on.

“Of course, one of the greatest sources of knowledge at Expo is the attendee base itself,” noted Swink. “Participants will have the opportunity to network with up to 1500 colleagues from several related industries, some of whom are developing innovative solutions to challenges you face right now.”

Annual Partner, Technology, Plant Awards

As in past years, Expo 4 will honor a number of outstanding people from American industry. This year OIT has consolidated its numerous previous awards into three simple but compelling categories. OIT will honor a single Partner-, Technology-, and Plant-of-the-Year from among a universe of thousands of partners and new technologies. The first-ever Plant-of-the-Year Award will honor the plant that has been most successful in implementing new OIT technologies and best practices while saving energy and money and boosting productivity in the process.

Another exciting new award honors the winners of the High School Engineering Challenge, this year coordinated in conjunc-

tion with the Junior Engineering Technology Society. This contest tested the engineering capabilities of high school students around the country, from problems developed by OIT partners in each of the nine Industries of the Future. “This was a wonderful and exciting way to help meet the basic industries’ common goal of getting students more interested in careers in these industries *before* they select a college or degree program,” said Ken Boras, “Challenge” program coordinator from BCS, Inc.

Industry-specific Sessions

Finally, each of the nine IOFs will host its own working session on the last day of Expo. This will allow participants to learn about cutting edge R&D and related activities in these industries and discuss future opportunities from a more focused perspective.

The complete Expo program is still taking shape at press time, so be sure to check out OIT’s informative website at www.oitexpo4.com to learn the latest. A convenient registration form is available online, as well as elsewhere in this issue. At press time, booth exhibiting opportunities were still available at several sponsorship levels. The latest information on exhibiting—or any aspect of the Expo—can be found at the website or by calling **1-800-OIT-SYMP**.

THE OIT TIMES

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