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Industrial Partnerships: Advancing Energy and Environmental Goals
Successful alliances

Partnerships with OIT have led to over 100 successful projects for the chemical industry, valued at $145 million. Support from OIT allows industry partners to move ahead with scientific discovery and innovation that are key to sustainability.

The Multi-phase Fluid Dynamics Research Consortium (MFDRC) demonstrates chemical industry partnerships in action. This unique alliance of 21 partners, including leading chemical companies, an energy equipment manufacturer, a computer manufacturer, national labs, and universities, has joined forces to develop accurate modeling of gas-solid transport—computing or simulating the flow of solid particles in a flowing gas stream, such as air. Improved computational fluid dynamics tools could substantially improve industrial efficiencies.

The MFDRC combines research and technology development to advance the state of the art of scientific tools and methods upon which the chemical industry depends. “This is a capability building effort,” explains Tyler Thompson, Research Partnership Leader for Dow Chemical. “It has clear and proven applicability to industrial problems, but it is impossible or inappropriate for a single company to develop these tools alone.”

Since 1998, OIT has supported the effort with $1.4 million in annual funding. By working in partnership with OIT, the MFDRC has advanced technology development by 5 to 10 years. The work accomplished through this successful collaboration will yield benefits across the chemical industry.

What’s working

Through Chemical Vision2020, the chemical industry is gaining the momentum needed to advance long-term goals and achieve sustainability for the future. This industry-led process provides:

• **A venue for strategic thinking about the future of the industry.** Chemical Vision2020 gives the industry a single voice, but with broad industry representation, to discuss, clarify, and solidify the direction of the OIT-chemical industry partnership. This diverse and experienced group provides valuable feedback to OIT about effective ways to interact with industry. At the same time, they are working to expand awareness among technology leaders about Chemical Vision2020.

• **A structure to implement partnerships.** Housed under the Council for Chemical Research, Chemical Vision2020 serves as a formal structure to coordinate activities, evaluate progress, and develop funding sources. The new organization will accelerate industry-wide involvement, which will allow research partnerships and networks to take shape.

• **A relevant approach for today’s competitive environment.** Future growth, profitability, and competitiveness require new technology; however, the costs and risks of long-term, complex R&D may exceed an individual company’s capabilities. Chemical Vision2020 partnerships accelerate innovation of critical enabling technologies by encouraging the chemical industry to leverage technical expertise and financial resources.

Partnering benefits

Partnerships facilitate technological advances, which in turn, meet societal demands for chemical-based products and address our national goals for energy and environmental quality. Chemical companies who take part in Chemical Vision2020 partnerships are:

• **Collaboration of diverse players with common goals.** Strong leadership that recognizes the industry’s varied interests will help focus efforts on wide-ranging technology applications—those that significantly impact the entire industry. On the horizon are industry “challenges” and “consortiums”—industry-led partnerships that will solicit innovative solutions to key chemical industry needs.

• **Forming technology teams and networks to leverage government funds and access to top scientific expertise and facilities.**

• **Gaining a competitive edge by building on technical developments that lead to private innovation and commercialization of technologies.**

• **Helping to guide technology development that promotes sustainable growth for the industry.**

• **Enhancing public perception of the chemical industry by demonstrating a commitment to energy savings and environmental performance.**

The OIT-chemical industry partnerships provide an opportunity for people from many different organizations to discuss priority research needs that are important to the future of the industry.

—Earl R. Beaver, Chief Technical Officer, Bridges to Sustainability

In 1997, U.S. chemical industry leaders and OIT agreed to align resources to meet the industry’s long-term R&D goals. Guided by its vision for the future and critical R&D needs defined in its roadmaps, the chemical industry established the Chemical Industry Vision2020 Technology Partnership (Chemical Vision2020).

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Chemical Vision2020 includes leaders from major U.S. chemical companies and the industry’s key trade organizations—the American Chemical Society, the American Institute of Chemical Engineers, and the Council for Chemical Research. Chemical Vision2020 is helping OIT’s Chemicals Industry of the Future Team evaluate the chemical R&D portfolio and is coordinating the implementation of industry activities. These efforts will set the pace for the industry to balance research, business, and environmental goals.

Industry collaboration

More diverse than any other in the United States, the chemical industry as a whole faces challenges to advance R&D, maintain global competitiveness, and improve energy and environmental performance. The chemical industry is meeting these challenges through collaboration with the U.S. Department of Energy’s Office of Industrial Technologies (OIT).
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