CEP Chemical Engineering Progress

AIChE

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Global Climate Change Activity

Engineers and scientists have long been aware of the potential effects of anthropogenic greenhouse gas emissions. In 1988, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change (IPCC), which was awarded the 2007 Nobel Peace Prize along with former Vice President turned environmentalist crusader Al Gore. Its mission is to impartially assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. At press time, IPCC is getting set to release its synthesis report, which is explicitly targeted to policymakers, on Nov. 17. This represents the final step in integrating and presenting the enormous amounts of scientific information contained in the three volumes released earlier this year.

With all this activity in global climate change, it is fitting for us to publish our fifth installment of the Critical Issues Forum on this very topic. Frank Princiotta, the director of the Air Pollution Prevention and Control Div. in the Office of Research and Development at the U.S. Environmental Protection Agency, authors the article " Mitigating Global Climate Change Through Power-Generation Technology" (pp. 24–32). In the article, he discusses the need for a major mitigation program and outlines development and challenges that lay ahead for various technologies for controlling carbon dioxide emissions. (*i.e.,* nuclear power, wind power, natural gas combined cycle, coal integrated gasification combined cycle with carbon capture and sequestration, etc.).

Other parts of AIChE are also turning their attention to climate change. The *AIChE Journal* will be covering climate change in its Perspectives column in the upcoming December 2007 issue. The article, "Sustaining Fossil Fuel Use in a Carbon-Constrained World by Rapid Commercialization of Carbon Capture and Sequestration," written by experts Michael Sheppard and Robert Socolow, will discuss technology developments needed to address carbon dioxide emissions. The Institute for Sustainability was recently granted seed money from the United Engineering Foundation for its proposed "Technologies for Carbon Mitigation Project." And at the 2007 Annual Meeting in Salt Lake City, there is a session devoted to market and regulatory issues involving climate change, as well as many other sessions that touch on this subject.

Complementing the subject of climate change is this month's cover story on fuel cells by Herbert Cooper (pp. 34–43). Originally presented at an AIChE New York Local Section meeting, this condensed version gives a realistic look at the future of fuel cells — from their promising potential applications to their challenging technological barriers.

Kristine Chin,
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