

Institute of Energy Technology – Professorship of Renewable Energy Carriers

and

Institute for Atmospheric and Climate Science (IAC)***Invitation to a Seminar***

Date: Monday, July 19, 2010
Time: 16:00-17:00
Place: Maschinenlaboratorium ETH Zürich, ML-J25/26

Speaker: **Prof. David Keith**
Canada Research Chair in Energy and the Environment
Department Chemical and Petroleum Engineering; and
Department of Economics
University of Calgary

Direct capture of CO₂ from air

Abstract - Direct capture of CO₂ from air will cost more than capture from power plants if both processes share the same construction and energy costs, yet air capture may still play an important role in managing CO₂ emissions if the cost gap can be made small enough. I will discuss some of the most viable directions for research and development and discuss the principal cost drivers. (See "Why Capture CO₂ from the Atmosphere?", Keith, Science, 2009, 325:1654-1655). Finally, I will illustrate these general comments with some details of the air capture work at our startup company Carbon Engineering.

Professor Keith has worked near the interface between climate science, energy technology and public policy for twenty years. His work in technology and policy assessment has centered on the capture and storage of CO₂, the technology and implications of global climate engineering, the economics and climatic impacts of large-scale wind power and the prospects for hydrogen fuel. As a technologist, Prof. Keith has built a high-accuracy infrared spectrometer for NASA's ER-2 and developed new methods for reservoir engineering increase the safety of stored CO₂. He now leads a team of engineers developing technology to capture of CO₂ from ambient air at an industrial scale. He took first prize in Canada's national physics prize exam, he won MIT's prize for excellence in experimental physics, was listed as one of TIME magazine's Heroes of the Environment 2009 and was named Environmental Scientist of the Year by Canadian Geographic in 2006. Prof. Keith spent most of his career in the United States at Harvard University and Carnegie Mellon University before returning to Canada in 2004 to lead a research group in energy and environmental systems at the University of Calgary.