

MECHANICAL ENGINEERING DEPARTMENT
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A Vision for a Sustainable Transportation System Based on Biomass

by

Frank Kreith, Doc Sci., P.E.
Professor of Engineering (Emeritus)
Department of Mechanical Engineering
University of Colorado
Boulder, Colorado 80309

Wednesday, February 27, 2008
3:15 p.m. — Refreshments before the seminar
3:30 p.m. — Graduate Seminar
Room 1130 ME

ABSTRACT — An efficient and economically viable transportation system is an essential part of a modern industrial society. Ever since President Jimmy Carter warned, in 1977, “If we fail to act soon [to lower oil consumption] we will face an economic, social and political crisis that will threaten our free institutions,” administrations in Washington have attempted to institute measures for a sustainable transportation system.

In my talk, I will first briefly outline the political-technological history, as well as the opinions of policy makers regarding energy for a modern transportation system. Then, I will present a summary of articles I have previously published outlining an approach to meet future demands of the U.S. transportation system without hydrogen or oil. This approach uses existing technologies and combines a demand-side strategy based on energy efficient plug-in electric hybrid vehicles with fuel obtained from biomass.

BIO — **Dr. Frank Kreith** has taught at the University of California, Lehigh University, and the University of Colorado, where he is now Professor Emeritus of Engineering. From 1988 to 2001 he was the American Society of Mechanical Engineers International (ASME) Legislative Fellow for Energy and Environment at the National Conference of State Legislatures (NCSL) where he provided assistance on energy, transportation and environmental protection to legislators in all fifty state governments. Prior to joining NCSL in 1988, Dr. Kreith was the Chief of Thermal Research at the Solar Energy Research Institute (SERI), currently the National Renewable Energy Laboratory. During his tenure at SERI, he participated in the Presidential Domestic Energy Review, served as an energy advisor to the Governor of Colorado, and was the editor of the ASME Journal of Solar Energy Engineering. He is the author of over a hundred peer-reviewed articles and of textbooks on heat transfer, solar energy and transportation. He is the recipient of the Charles Greeley Abbot Award from American Solar Energy Society and the Max Jakob Award from ASME-AIChE. In 1992, he received the Ralph Coats Roe Medal from ASME for providing technical information to legislators about energy conservation and environmental protection, and in 1997 the Washington Award for “unselfish and preeminent service in advancing human progress.” In 1998, Dr. Kreith was awarded the ASME medal for research, publications and public service and in 2004 he was named ASME Honorary Member. In 2005 the ASME established the Frank Kreith Energy Award in recognition of Dr Kreith’s contribution to heat transfer and renewable energy. He now teaches a course on Sustainable Energy for Honors students at the University of Colorado.

Informal Faculty Luncheon: Wednesday, February 27, 2008, 12:00 noon. Meet in 1100 ME and walk to lunch with other faculty. Prof. Frank Kreith will not be able to attend.