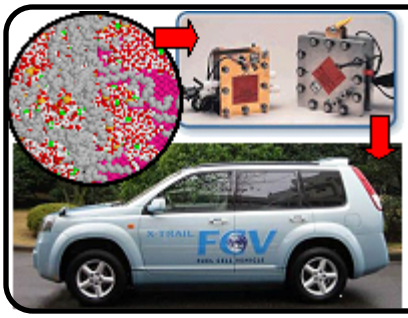
Saving the World

from certain destruction gets more complicated all the time.

Our world faces an impending global energy/climate crisis that will be the defining challenge for your generation of engineers. The search for alternative fuels that will power the future and mitigate human effects on the environment is an extraordinarily complicated task, requiring an interdisciplinary training in which an engineer has expertise in biomolecular engineering to modify algae to produce hydrogen from sunlight or expertise in chemical engineering in order to design nanostructured materials to store and convert hydrogen to electricity. However, expertise in one field is not enough. To solve the problem, you must be conversant in all of the fields relevant to sustainable energy production. To educate this engineer is the goal of the STAIR program at UT.



Understanding molecular mechanisms of proton transport in fuel cells, leads to better fuel cell materials and design, making hydrogen-powered cars a common sight on the highways of tomorrow.

Fall 2008 Research and Teaching Fellowships are currently available in the (i) chemical and biomolecular engineering, (ii) materials science and engineering, and (iii) civil and environmental engineering departments.

Contact: David Keffer, dkeffer@utk.edu, http://clausius.engr.utk.edu

STAIR requirements: U.S. citizen or permanent resident in the Ph.D program

Sustainable Technology through Advanced Interdisciplinary Research

The STAIR program at the University of Tennessee provides a valuable engineering PhD degree (chemical/biomolecular, materials science or civil and environmental engineering) with the broad background in all fields associated with sustainable technology. It offers a novel, interdisciplinary curriculum, with faculty from molecular biology, chemistry and three engineering departments. It also offers the opportunity to participate in state-of-the art research in (i) bio-energy production, (ii) materials development for energy storage, and (iii) materials development for energy conversion.

Engineering a microbe and a system in which micro-organisms utilize existing metabolic pathways to convert sunlight directly into hydrogen is one promising means of producing a sustainable energy source with potentially zero-impact on the environment and climate.

The STAIR Program at the University of Tennessee:
Training superheroes to save the world,
one engineer at a time.