CENTRE FOR RENEWABLE AND SUSTAINABLE ENERGY STUDIES

RESEARCH LECTURE

Renewable and Sustainable Energy

NOVEL ENERGY SYSTEMS FOR DISTRIBUTED AND MOBILE POWER GENERATION

This special lecture will be held on **Monday, 23 May at 12h30 in Room M306, Mechanical and Industrial Engineering Building, Stellenbosch University**.

William Lear holds a PhD from Stanford University and is an Associate Professor in the Department of Mechanical and Aerospace Engineering at the University of Florida, and Director of the Energy and Gasdynamic Systems Laboratory. He is the author of numerous technical papers on energy cycles and turbomachinery, and an Associate Fellow of the American Institute of Aeronautics and Astronautics.

In a sustainable energy future, the efficient utilisation of unconventional fuels such as biomass and municipal solid wastes will be a critical component in meeting the worldwide energy demand. In addition, waste heat represents by far the largest easily-accessible energy source, and distributed generation is necessary in order to benefit from its potential. This presentation will describe a novel quad-generation distributed energy system which combines multiple system advantages, including wide fuel flexibility, low emissions, compactness, and attractive life cycle costs. The system produces electric power with an efficiency advantage, while simultaneously producing heat, cooling, and fresh water, important for coupling to steam gasification plants and for remote or emergency operation.

The presentation will also describe the research and development activities for a novel direct methanol fuel cell system for portable electronics applications. The system architecture enables significant gains in compactness, so that a fully-hybridised integrated laptop power supply, including fuel, can occupy the battery compartment. Current research challenges will be described.

All researchers, students and the public at large interested in renewable energy are welcome to attend.

Please RSVP crses@sun.ac.za or tel: 021 808-4069 by 20 May 2011

Directions to the Faculty of Engineering:

Coming from Cape Town on the N1

Continue some 30 km from Cape Town; A couple of kilometers beyond the Engen One Stop Service Station take the Stellenbosch off-ramp. You enter Stellenbosch going over a train bridge along Bird Street. After the bridge, cross 3 sets of traffic lights. The 4th set is on Merriman Avenue. Landmark on right is the Caltex service station. Turn left into Merriman. Cross two sets of traffic lights, turn left into Joubert Street, just before the white pedestrian bridge that cross Merriman Ave. Go across the next four-way stop, Banghoek Street, and the Engineering Faculty will be on your right-hand side*.*

Coming from Strand/Somerset West

You enter Stellenbosch from the South side along Strand Road. First traffic light is still outside town; golf course on your left. Stay in Strand road (R44) and cross over four additional sets of traffic lights. At the 6th set of traffic lights, turn right into Merriman Avenue. Cross three sets of traffic lights, turn left into Joubert Street, just before the white pedestrian bridge that cross Merriman Ave. Go across the next four-way stop, Banghoek Street, and the Engineering Faculty will be on your right-hand side*.*

Coming from the Airport on the N2

Take Stellenbosch/Baden Powell off-ramp. Continue past Spier Estate on the R310. You enter Stellenbosch from the West. Just follow the road (Adam Tas) over the railway bridge and past the Station. The road merges with Strand Road (R44). You cross one set of traffic lights and turn right at the second set (Merriman Avenue). Now cross three sets of traffic lights, and turn left into Joubert Street, just before the white pedestrian bridge that cross Merriman Ave. Go across the next four-way stop, Banghoek Street, and the Engineering Faculty will be on your right-hand side*.*

Due to extensive construction work on campus, parking is at a premium. There is parking at Silver Trees Parking Area in Jan Cilliers Street from where it is a short walk to the venue (route indicated in red).

VENUE

PARKING