

SES Fall Seminar Series

Dr. William David Lubitz

School of Engineering

University of Guelph, Guelph, ON

‘Energy engineering: greenhouse microclimates, Archimedes screws and baseball’

Sun, wind and water are ubiquitous forms of energy in our environments that can be utilized as means of generating useful forms of energy such as electricity or heat. These are unique energy sources: they are endlessly renewable, are widely but non-uniformly distributed, and compared to conventional fuels, energy density is very low. These forms of energy must, in a sense be "gathered up" from relatively large areas, which leads to very different engineering challenges compared to using conventional fuels. This talk will draw on different aspects of Dr. Lubitz' research to demonstrate some of the issues and also show the potential of these energy sources. The challenges associated with assessing the quantity and quality of solar energy at a particular location will be illustrated by looking at the unique problem of quantifying the amount of light that would reach a turf field within a baseball stadium. Preliminary findings from a current study on solar heating of simple greenhouses will show the complexity of utilizing solar energy in a practical situation, and how other environmental factors such as wind play important roles and cannot be neglected. Finally, the relatively new hydroelectric generation technology of Archimedes screw generators will be examined and used to illustrate how a change in approach and thinking can lead to new ways of utilizing a resource that was previously not feasible to use.



Friday
October 23,
2015
3:30 - 4:30 pm
Alexander Hall
Room 218

All are welcome to attend!



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