

Research in Renewable Energy



uOttawa

L'Université canadienne
Canada's university

Université d'Ottawa
Faculté de génie

Génie chimique et
biologique

University of Ottawa
Faculty of Engineering

Chemical and Biological
Engineering



Photos courtesy of David Taylor

Falling under the umbrella of Clean Technologies, “Renewable Energy” is defined as energy derived from resources that are able to be regenerated or cannot be depleted. About 25% of worldwide human energy use is contributed from renewable energy sources. The major source of renewable energy is solar radiation, i.e., sunlight.

Humankind has traditionally used wind, water, and solar power to produce energy. More recently, however, the exhaustion of fossil fuels, the effects of climate change and the environmental, social and political impact of using fossil fuels and nuclear power have triggered a massive research effort in the production of energy from renewable sources.

The Department of Chemical and Biological Engineering at the University of Ottawa has become a leader in renewable energy research having embarked on projects related to bioethanol and biodiesel production over more than ten years ago and is still continuing to expand in this area of research by starting new collaborations with different companies.

Experts

- * Dr. Marc A. Dubé
- * Dr. William Hallett (Mech. Eng.)
- * Dr. Kevin Kennedy
- * Dr. Kathlyn Kirkwood
- * Dr. Boguslaw Kruczek
- * Dr. Christopher Lan
- * Dr. Arturo Macchi
- * Dr. Marten Ternan (Adjunct)
- * Dr. Handan F. Tezel
- * Dr. Jules Thibault
- * Dr. André Tremblay
- * Dr. Jason Zhang

Partners

- * Iogen Corp.
- * EnPross Inc.
- * Menova Energy Inc.
- * NRCan-Varenes
- * AirScience Corp.
- * Biotechnology Research Institute
- * BioDiesel Reactor (BDR) Technologies Inc.



Some Current Projects

- * Development of a novel membrane reactor for biodiesel production
- * Efficient in situ recovery of ethanol (adsorption, gas stripping, membrane)
- * Design of equipment for the collection of water vapour from the atmosphere
- * Energy storage systems for solar energy applications
- * Ethanol production from cellulosic biomass obtained from agricultural waste
- * Energy recovery from wastes using microbial fuel cells

