

Institute for Chemicals and Fuels from Alternative Resources

The *Institute for Chemicals and Fuels from Alternative Resources* (ICFAR) at Western University is committed to being a leader in the development of technologies and processes that produce chemicals and fuels from alternative resources – with an emphasis on green engineering and environmental sustainability. The Institute's researchers strive to quickly move research from the laboratory to large demonstration projects at ICFAR and on to industry – paving the way for Canadian biofuel and chemical leadership in the global marketplace.



ICFAR brings together academia, government and industry to collectively accelerate 'green' innovations, driving Canada toward a profitable and sustainable future.

What is ICFAR?

- Launched in 2008 to promote environmental protection by addressing global problems of energy deficits, pollution and waste
- Creates next-generation biofuels and chemicals using forestry residues, non-food crops and other sources of biomass, like municipal solid wastes
- Houses a state-of-the-art, 20,000-square-foot research facility that allows researchers to take laboratory concepts and scale them up using several pilot plants and demonstration units
- Based in Ilderton, Ontario, in close proximity to the heartland of southwestern Ontario's agricultural and petrochemical industries

Partnerships

- Interdisciplinary effort with researchers from the faculties of engineering and science, the Richard Ivey School of Business and Western's Research Park
- Has the capacity to train more than 60 undergraduate and graduate students at any given time
- Students and postdoctoral fellows are engaged with industry partners to gain unique training experience and to help create sustainable solutions for a better tomorrow
- Has formed partnerships with more than 25 companies worldwide, offering both technical services and collaborative projects
- Industry partners include: *Dynamotive*, *Syncrude Canada*, *Total* and *Agri-Therm*, which was founded by ICFAR directors Franco Berruti and Cedric Briens to develop a mobile pyrolysis unit being tested at the institute
- The Agri-Therm unit transforms agricultural biomass from byproducts like corn stalks or wood into usable bio-oils, chemicals and other products, such as insecticides and pharmaceuticals
- ICFAR is the coordinating centre of the **Agricultural Bioproducts Innovation Network** (ABIN), a national venture that brings together more than 70 researchers from 26 institutions to develop integrated biorefining processes for effectively and economically converting renewable biomass into energy, fuels and chemicals
- Sharing common goals, ICFAR and Sarnia Ontario's **Bioindustrial Innovation Centre** also work collaboratively to establish Canada as a global leader in the development of sustainable biorefining and biofuel industries

Current Projects

ICFAR's researchers are currently working on a number of projects, including:

- Supporting biomass conversion projects
- Converting biochar and bio-oil to syngas
- Converting biomass to liquid fuels
- Developing natural pesticides through fast pyrolysis of biomass
- Developing fast pyrolysis of palm oil residues
- Developing a new reactor for catalyst testing

For more information, please visit: www.icfar.ca



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