



RESEARCH2REALITY

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Caution: Algae Working

| An Interview with Professor David Sinton
| Biofuel Engineer, University of Toronto

How does nature inspire energy research?

Our big inspiration comes from nature, and that is, you look at solar energy really provides the earth with its main energy source and actually powers the ecosystem. So if you think about our developed environment and then how we use energy, and can we reflect on that, can we learn from that, can we develop better technologies?

So we built this incredibly impressive modern world with all these wonderful things in it, but we've done it by digging things out of the ground and burning them. It's really all solar energy, but it's just solar energy that's been stored for a long time. So how can we get from there to a more sustainable system? So can we do what plants do? Instead of burning fuels to produce CO₂, can we take CO₂ and put energy and produce those fuels that we like so much that fly airplanes and heat this room and do all those useful things?

How can we use algae to make fuel?

These are photosynthetic microorganisms, they work like plants. They take solar energy, CO₂, and produce useful products. And perhaps most excitingly, some of the products they produce are fatty materials, lipids, that look a lot like these fuels that we're addicted to, or these oils. These guys do a good job of that, but they're fussy. Can we give them the wavelengths they need, can we give them the fluids they need, the CO₂ they need, and keep them happy so they're productive?

CO₂ is a global issue. It doesn't respect boundaries or tariffs or all these sorts of things. It really is a question of how can we work together, and you know, to be fair, our global record of working together isn't great. Canada is an energy super power, and I think we need to pull our weight and really demonstrate leadership in this larger question of CO₂ and how we can produce new technologies to do a better job.