

Guiding Prototype Development for Clean Energy Tech

BY ANDREA MENDIZABAL



Southern Alberta innovators are taking the next step in their entrepreneurial journey with the help of a prototype facility and program that supports clean energy technologies.

The Kinetica Innovation Centre at SAIT (KICS) is helping innovators move their ideas from testing and experimentation to prototype development.

Ben Reed is principal hardware hacker at Veerum Inc., an Industrial Internet of Things (IIoT) startup focused on removing rework from the world's largest, capital-intensive remote projects.

“Capital projects have many moving parts involved in the planning, designing, manufacturing, shipping, testing and commissioning of sub-components of remote construction sites,” says Reed. “Rework is a persistent problem in capital projects affecting productivity, cost and schedule. It is caused by mismatches between the physical site and manufactured components, missing tools and misplaced assets. This can lead to a 10 to 30 per cent overall increase in project cost and schedule growth.”

Veerum is in the process of developing their first version of a comprehensive product that will help remove waste and track assets from the most complex construction sites and manufacturing facilities by creating a digital twin of reality and matching it to the project plan. The technology has the potential to eliminate cost and schedule overruns, improving efficiencies in the global energy industry.

Innovations that address the energy sector's needs are

increasingly attractive as industry looks to improve efficiencies and minimize environmental impact.

Karen Canon-Rubio, research assistant with the University of Calgary's Solar Biocells project, is also working out of the KICS facility. The team, comprised of graduate students and researchers, is collaborating to commercialize a patent-pending technology that produces a sustainable biofuel and captures carbon dioxide in the process.

“Looking at existing research on biofuels, there were challenges that still needed to be conquered,” says Canon-Rubio. “The challenge is to produce a biofuel at an affordable price with commercial potential that can be scaled up and implemented.”

Current biomass production systems have high operational costs associated with CO2 supply and high capital costs associated with the growth of algae as dilute suspension.

Solar Biocells uses naturally occurring phototrophic microorganisms and sunlight as an alternative for converting solar energy into a fuel which can then be converted into either methane, a liquid fuel or biomass pellets. This has resulted in very high, sustainable and scalable productivity at an extremely low cost.

The 2,200-square-foot KICS facility allows innovators to take the next step by providing economical bench space, a project planning framework, access to SAIT's facilities and talent, and the support needed to move their technology forward.

Visit innovatecalgary.com/kics to learn how to apply for the KICS program. **B**

ABOVE: THE KINETICA INNOVATION CENTRE AT SAIT (KICS).
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