

Students shine light on dark, impoverished living conditions

February 4 2014, by Bryan Alary

A team of University of Alberta industrial design students have a bright idea to help the 1.6 billion people worldwide living without electricity to find a cheap light source and reduce waste.

Students Russell Davidson, Jiayi Li, Fren Mah, Mikenna Tansley and Kapil Vachhar turned to recycled e-waste, bicycles and readily available motor technology to design MiON, a pedal-powered lamp that could provide a [light source](#) for people without electricity. Their design efforts were part of an advanced product design class project—one that recently earned gold in the product category of the International Sustainable Electronics Competition.

"Electronic waste is a fairly current concern, and I thought it would be an interesting challenge for the [students](#) to research various aspects of the problem associated with this kind of waste and combine what they're learning in product design," said instructor Greig Rasmussen, who restructured his industrial [design](#) class this year to give students experience with more practical problems and a taste of the competitive atmosphere they can expect in the workforce.

MiON is a lighting system that attaches to a bicycle, with a small dynamo motor that generates and stores electricity using pedal power. Designed to be built from recycled plastics and electronics, MiON can provide ambient or fixed lighting in homes without power that would otherwise rely on costly kerosene lamps.

Design helps solve ecological, social problems

MiON not only takes aim at an ecological problem that was part of the class project, but also addresses a social issue in the developing world—one that resonated with many of the teammates, said Mah, who came up with the idea of blending the two goals.

"I looked at lighting situations in some cultures; some people don't have sufficient lighting at night to do their studies or homework, and I thought if we could produce a product, it could help alleviate the situation," he said.

"Since bikes are a main form of transportation, we liked the idea of using something where we could allow people to charge it throughout the day while riding and use it at night. It seemed like a plausible solution," added Tansley.

The students created a video animation that introduces MiON and illustrates the scope of the problem, with some of the narration told in Hindi from the perspective of a boy living in India. The quality of storytelling and blending of goals—reducing waste and social good—was impressive and a credit to the students, said Rasmussen.

Provided by University of Alberta

Citation: Students shine light on dark, impoverished living conditions (2014, February 4)
retrieved 27 April 2024 from
<https://phys.org/news/2014-02-students-dark-impoverished-conditions.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.