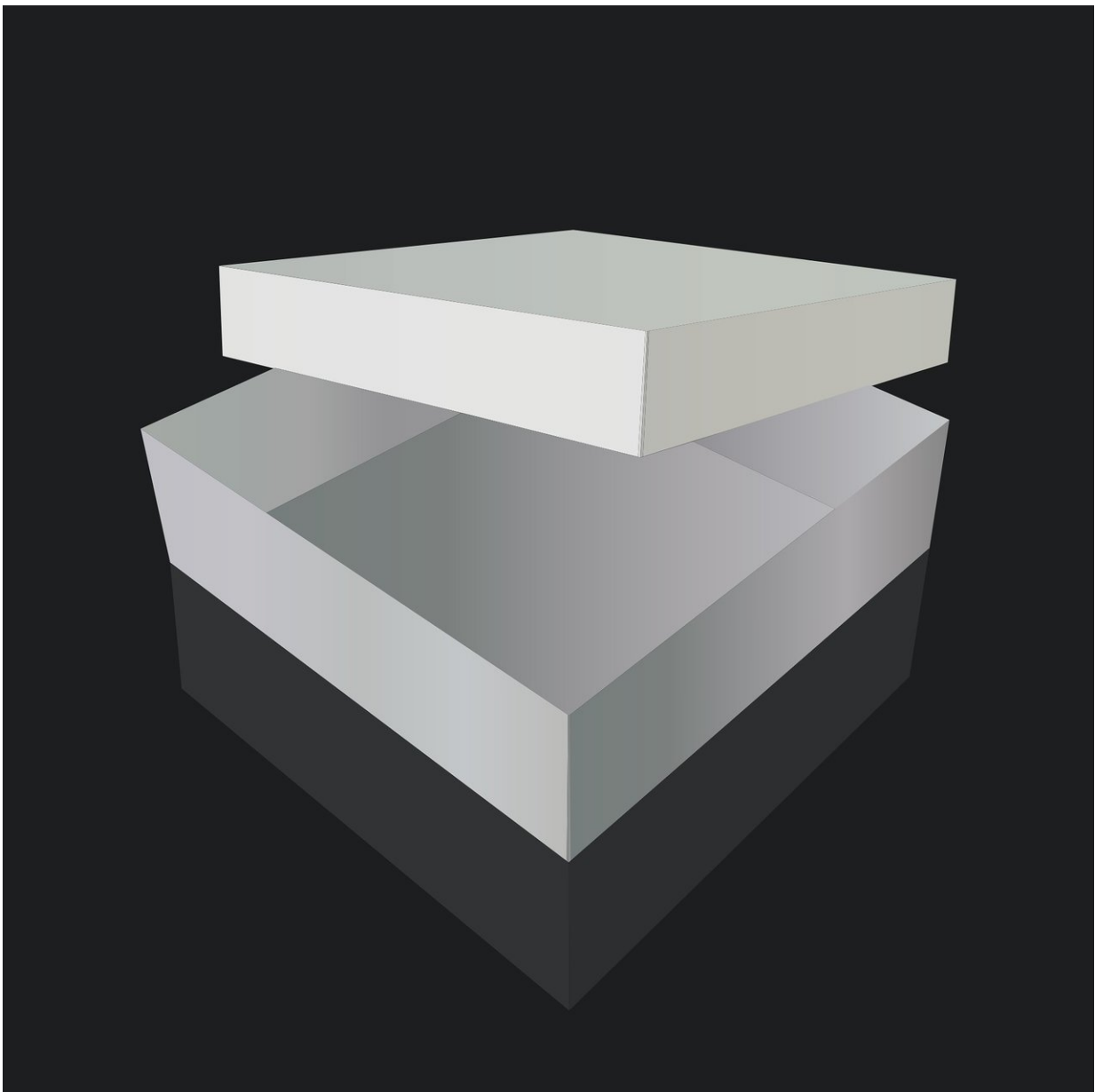


Researcher creates 'minimal chair' that can ship flat, take seconds to assemble with no tools

January 9 2019, by Chris Adam



Credit: CC0 Public Domain

A Purdue University researcher has designed what he calls a "minimal chair" that can be shipped in a thin flat box, taking only seconds to assemble without tools, as part of an effort to create furniture design processes that could significantly change lean manufacturing across the world.

Tong Kim, an associate professor of industrial design in Purdue's College of Liberal Arts, says his [chair](#) reduces waste and is easy to ship. A video demonstration of the chair is available [here](#).

Kim, who has worked with the Purdue Office of Technology Commercialization

to obtain patents for multiple innovations, says his chair has foldable hinges and is made from thin and light metal, wood and leather materials. It ships in a flat package to reduce shipping costs by more than 50 percent. According to Kim, shipping costs typically account for one-third of the overall costs for [manufacturing](#) goods.

The chair could be modified for different sizes, dimensions and weight bearing, depending on the need of a manufacturer.

"We want to take giant leaps in sustainable manufacturing," Kim said. "This chair represents only one small piece of our overall goal to streamline lean manufacturing and reduce energy waste."

The work aligns with Purdue's Giant Leaps celebration, celebrating the

university's global advancements in sustainability as part of Purdue's 150th anniversary. The chair fits Purdue's goal of sustainability, which is one of the four themes of the yearlong celebration's Ideas Festival, designed to showcase Purdue as an intellectual center solving real-world issues.

Kim also created a patented "Sharing Chair," which is a stackable style of furniture that can be used by up to three people at the same time. He also founded Wonder Maker Space, a product development and commercialization platform with users in multiple countries to collaborate on [product development](#) and manufacturing.

"I continue working on processes for smart manufacturing, including an Internet of Things-based system to transfer [digital data](#) such as 3-D CAD and specifications between manufacturing locations so items can be produced locally and save time, costs and reduce waste," Kim said.

Provided by Purdue University

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