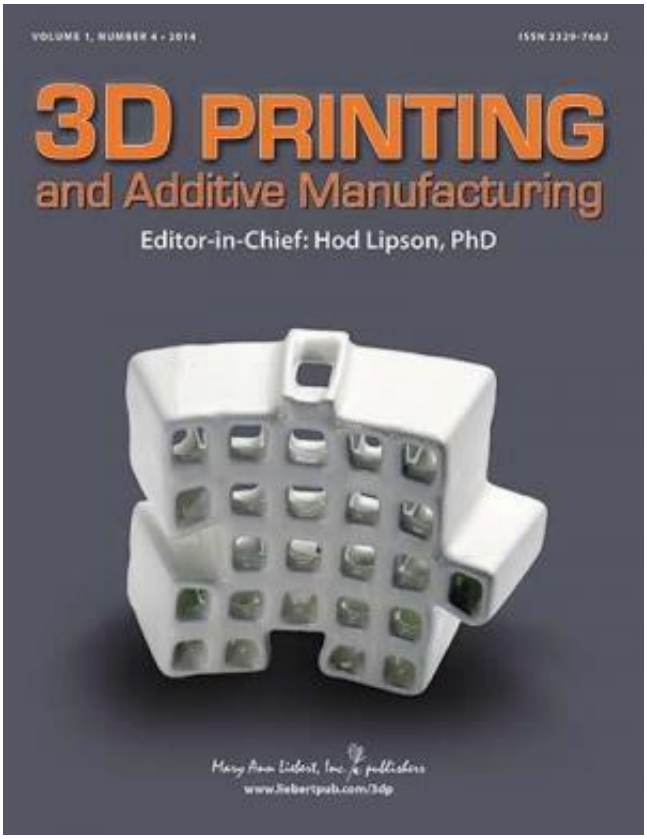
# Lower-cost metal 3-D printing solution available

February 10 2015




Credit: Mary Ann Liebert, Inc., publishers

3D printing of plastic parts to prototype or manufacture goods is becoming commonplace in industry, but there is an urgent need for lower-cost 3D printing technology to produce metal parts. New substrate release solutions that offer easy, less expensive alternatives to aluminum

parts removal during gas metal arc weld 3D printing are described in an article in *3D Printing and Additive Manufacturing*.

A team led by Paul Sanders and Joshua Pearce from Michigan Technological University (Houghton, MI), tested several surface treatment methods for releasing 3D-printed aluminum parts from the reusable substrate on which they are deposited. In the article "Substrate Release Mechanisms for Gas Metal Arc Weld 3D Aluminum Metal Printing" the authors compare the printing and parts removal technologies based on cost and need for additional coating steps, warping of the substrate, interlayer adhesion strength, and ease of use. The experiments were all performed on Michigan Tech's open-source metal 3-D printer.

"We found that careful selection of substrates and coatings could result in the complete elimination of expensive tooling for the release of 3D printed aluminum components," says Joshua Pearce. "This approach cuts the cost of aluminum 3D printing, while the recycling of the substrates further enhances the ecological footprint of the technique."

"Metal printing has been one of the key drivers to industrial adoption of additive manufacturing, and aluminum part production has been particularly challenging. It's good to see new approaches being developed," says Editor-in-Chief Hod Lipson, PhD, Professor at Cornell University's Sibley School of Mechanical and Aerospace Engineering, Ithaca, NY.

**More information:** The article is available free on the *3D Printing and Additive Manufacturing* website until March 10, 2015.

Provided by Mary Ann Liebert, Inc

Citation: Lower-cost metal 3-D printing solution available (2015, February 10) retrieved 25 April 2024 from https://phys.org/news/2015-02-lower-cost-metal-d-solution.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.