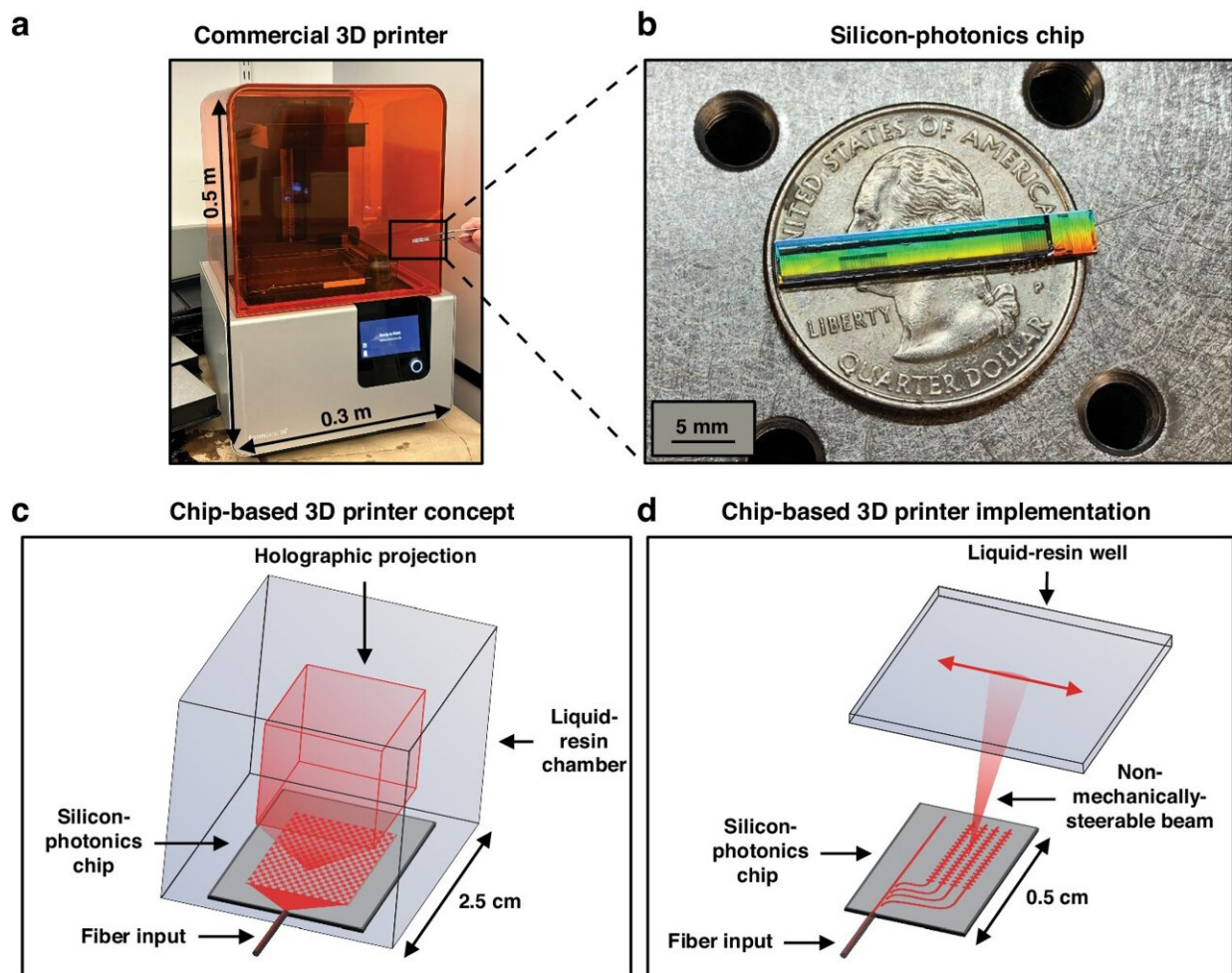


Best of Last Week—Gravity existing without mass, a chip based 3D printer and the driver of IBS discovered

June 10 2024, by Bob Yirka



The chip-based 3D printer concept. Credit: *Light Science and Applications* (2024). <https://doi.org/10.1038/s41377-024-01478-2>

It was an interesting week for physics research as Richard Lieu, a professor at the University of Alabama, proposed that [gravity can exist without mass](#), mitigating the need for dark matter in hypothetical theories that have been developed to explain certain gravitational effects. And Naman Kumar, a researcher at the Indian Institute of Technology, developed a new model suggesting that [a partner anti-universe could explain accelerated expansion without the need for dark energy](#)—a finding that could upend theories developed to explain the accelerated expansion of the universe.

Also, a team at Columbia University, working with a colleague from Radboud University, discovered [a new state of matter](#) when they took molecules to a new ultracold limit. And a team at the Weizmann Institute of Science's Physics of Complex Systems Department found that [photon collisions can result in the creation of vortices](#)—a find that could have a major impact on quantum computing.

In technology news, a combined team of engineers from the University of Texas and MIT demonstrated [the first chip-based 3D printer](#) small enough to fit in the palm of the hand. And another combined team, this one made up of engineers from Texas A&M University and Ho Technical University, found that new ransomware attacks based on an evolutionary generative adversarial network [are able to evade security measures](#).

Also, a team of roboticists at ETH Zurich's Robotic Systems Lab demonstrated [an autonomously navigating wheeled-legged robot](#), giving it more abilities than traditional robots. And a collaboration between researchers from Mexico's National Institute of Astrophysics, Optics and Electronics (INAOE) Institute in Puebla resulted in the development of [an AI system that laid the groundwork for decoding dog vocalizations](#).

In other news, a team of public health researchers affiliated with

multiple institutions in China [found microplastics in every sample of human semen they tested](#). Also, a massive rare fish thought to live only in temperate waters in the southern hemisphere [washed up on shore along Oregon's northern coast](#). And finally, a team of medical researchers at the Francis Crick Institute, working with UCL and Imperial College London, discovered [a new biological pathway that is a principal driver of inflammatory bowel disease](#) and related conditions.

© 2024 Science X Network

Citation: Best of Last Week—Gravity existing without mass, a chip based 3D printer and the driver of IBS discovered (2024, June 10) retrieved 15 July 2025 from <https://sciencex.com/news/2024-06-week-gravity-mass-chip-based.html>

<p>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.</p>
--