

Making aluminum shine like gold: Laser-induced Color Printing on Nanostructured Metal Films

Track Code: 2019-NYGA-68517

Categories:

- Materials and Manufacturing
- Micro & Nanotechnologies

Keywords:

- Color
- Printing

Researchers at Purdue University have developed a method for color printing that are resistant to fading and less toxic. The method involves creating nanostructured metal films where the thickness of the film determines the overall background color. Regions of the film are then structurally modified with a laser to create different color features. Compared to other laser-induced printing technologies, a much larger area can be printed, allowing for large-scale fabrication. In a proof-of-concept study, the researchers printed a two-colored checkered pattern and a gold-colored alphabet P using silver films. Recently the same technology has been also demonstrated with less expensive aluminum. The available colors include blue through green, and orange up to red. Applications of the printing technology include a very diverse palette of applications ranging from full-color printing and anti-counterfeit marking to decorate art and jewelry.

People:

- Nyga, Piotr (Project leader)
- Boltasseva, Alexandra
- Chowdhury, Sarah Nahar
- Kildishev, Alexander V.
- Kudyshev, Zhaxylyk
- Shalaev, Vladimir M

Intellectual Property:

Application Date: February 19, 2020

Type: Utility-Gov. Funding

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Application Date: February 19, 2019

Type: Provisional-Patent

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Contact OTC:

Purdue Office of Technology Commercialization

1801 Newman Road

West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org