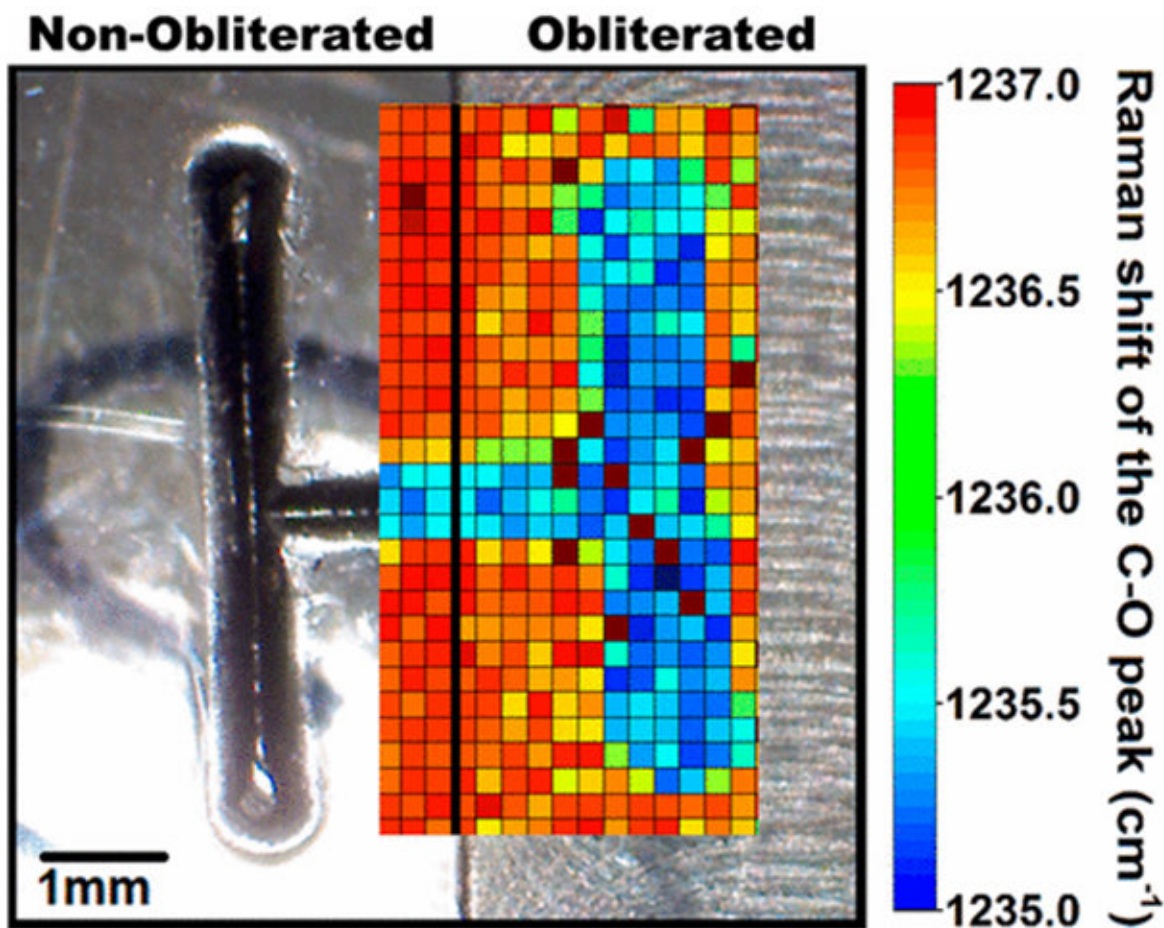


A method to recover obscured serial numbers from polymer products

November 2 2017, by Gisèle Bolduc



Recovering erased serial numbers in a polymer . Credit: American Chemical Society

Polymers are widely used in industry and increasingly deployed as replacements for metals in the manufacture of automobile parts, firearms and other products. Such parts are marked with serial numbers for security and traceability purposes. The numbers may, however, be partially or completely erased, and although there are techniques for recovering them from metal parts, this is not the case for polymers. Now, in an article published in *Analytical Chemistry*, researchers have demonstrated the potential of a non-destructive method for making abraded serial numbers on polymers visible again.

Cédric Parisien, an INRS master's student in energy science and materials, used Raman spectroscopy to reconstruct erased information from a sample of polycarbonate, a [polymer](#) that figures prominently in the manufacture of bulletproof products. The technique could be of great benefit to forensics, since it requires no pre-treatment and does not damage the sample.

"The stamping technique used to engrave serial numbers creates deformations deep in the material," said INRS professor and study coauthor Andreas Ruediger. "We used Raman spectroscopy to reveal those changes and get a kind of fingerprint for use in recovering erased images, without recourse to thermal, chemical, or other treatments."

Other studies are underway to test the reliability of this new method on various other polymers and materials such as ceramics, both for security applications and in quality control.

More information: Cédric Parisien et al, Reconstruction of Obliterated Characters in Polycarbonate through Spectral Imaging, *Analytical Chemistry* (2017). [DOI: 10.1021/acs.analchem.7b03069](https://doi.org/10.1021/acs.analchem.7b03069)

Provided by Institut national de la recherche scientifique - INRS

Citation: A method to recover obscured serial numbers from polymer products (2017, November 2) retrieved 20 July 2024 from

<https://phys.org/news/2017-11-method-recover-obscured-serial-polymer.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.