

Video Article

JoVE Monthly Highlights: March 2018

Caitlin McAllister¹, Dipesh Navani¹

¹JoVE Content Production

Correspondence to: Dipesh Navani at dipesh.navani@jove.com

URL: <https://www.jove.com/video/6051>

DOI: [doi:10.3791/6051](https://doi.org/10.3791/6051)

Keywords: This Month in JoVE, Issue 133,

Date Published: 3/6/2018

Citation: McAllister, C., Navani, D. JoVE Monthly Highlights: March 2018. *J. Vis. Exp.* (133), e6051, doi:10.3791/6051 (2018).

Abstract

Here's a look at what's coming up in the March 2018 issue of [JoVE](#): The World's Premier Video Journal.

As wearable fitness trackers become more integrated into our daily lives, our authors in JoVE [Engineering](#) present a specs-tacular protocol describing glasses that can detect motion in the temporalis muscle while subjects read, exercise, and eat. Using this technique, researchers can get a closer look at ingestive behaviors and physical activity patterns in practical settings.

From 3D printed glasses to 3D printed lungs, JoVE [Bioengineering](#) showcases a methodology to fabricate optical tissue phantoms. These tissue-mimicking optical phantoms provide a standard to evaluate and calibrate optical systems - circumventing expensive animal studies. This technique is highly adaptable and allows scientists to create phantoms of any structure that can be made with a 3D printer.

Moving over to JoVE [Behavior](#), our authors describe a novel model of contagious depression in animals. While some studies have investigated social contagion of psychiatric illnesses, the phenomenon is not fully recognized. Using this technique, our authors successfully induced depression-like symptoms in naive rats exposed to depressed rats.

Finally, over in JoVE [Chemistry](#), our authors added a splash of color to this month's issue with a simple chemical spot test to identify an emerging class of drugs. Using only three reagents and a hotplate, our authors confirmed the presence of synthetic cathinones with a color change from light blue to yellow-orange. With further development, this technique could be utilized for law enforcement in both laboratory and field testing settings.

You've just had a sneak peek at the March 2018 issue of JoVE. Visit our website to see the full-length articles, plus many more, in JoVE: The World's Premier Video Journal.

Video Link

The video component of this article can be found at <https://www.jove.com/video/6051/>

Protocol

Color Spot Test As a Presumptive Tool for the Rapid Detection of Synthetic Cathinones

Morgan Philp¹, Ronald Shimmon¹, Mark Tahtouh², Shanlin Fu¹

¹Centre for Forensic Science, [University of Technology Sydney \(UTS\)](#), ²[Australian Federal Police \(AFP\)](#)

Here we present a simple, inexpensive, and selective chemical spot test protocol for the detection of synthetic cathinones, a class of new psychoactive substances. The protocol is suitable for use in various areas of law enforcement that encounter illicit material.

Fabrication and Characterization of Optical Tissue Phantoms Containing Macrostructure

Madeleine S. Durkee¹, Landon D. Nash¹, Fatemeh Nooshabadi¹, Jeffrey D. Cirillo², Duncan J. Maitland¹, Kristen C. Maitland¹

¹Department of Biomedical Engineering, [Texas A&M University](#), ²Department of Molecular Pathogenesis and Immunology, [Texas A&M College of Medicine](#)

Optical tissue phantoms are essential tools for calibration and characterization of optical imaging systems and validation of theoretical models. This article details a method for phantom fabrication that includes replication of tissue optical properties and three-dimensional tissue structure.

Design and Evaluation of Smart Glasses for Food Intake and Physical Activity Classification

Jungman Chung¹, Wonjoon Oh², Dongyoub Baek³, Sunwoong Ryu², Won Gu Lee⁴, Hyunwoo Bang²

¹School of Mechanical and Aerospace Engineering, **Seoul National University**, ²**Envisible, Inc.**, ³**Curiosis, Inc.**, ⁴Department of Mechanical Engineering, **Kyung Hee University**

This study presents a protocol of designing and manufacturing a glasses-type wearable device that detects the patterns of food intake and other featured physical activities using load cells inserted in both hinges of the glasses.

A New Method for Inducing a Depression-Like Behavior in Rats

Vladimir Zeldetz^{*1}, Dmitry Natanel^{*2}, Matthew Boyko², Alexander Zlotnik², Honore N. Shiyntum³, Julia Grinshpun², Dmitry Frank², Ruslan Kuts², Evgeni Brotfain², Jochanan Peiser²

¹Department of Emergent Medicine, Soroka University Medical Center, **Ben-Gurion University of the Negev**, ²Division of Anesthesiology and Critical Care, Soroka Medical Center, **Ben-Gurion University of the Negev**, ³

This protocol describes a new model by which healthy rats could contract depression over a given time period through contagion by exposure to chronic unpredictable stressed (CUS) rats.

Disclosures

No conflicts of interest declared.