

#### Video Article

# **JoVE Monthly Highlights: March 2018**

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#### **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 cathenones 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 Philp<sup>1</sup>, Ronald Shimmon<sup>1</sup>, Mark Tahtouh<sup>2</sup>, Shanlin Fu<sup>1</sup>

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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**

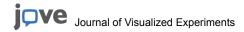
Madeleine S. Durkee<sup>1</sup>, Landon D. Nash<sup>1</sup>, Fatemeh Nooshabadi<sup>1</sup>, Jeffrey D. Cirillo<sup>2</sup>, Duncan J. Maitland<sup>1</sup>, Kristen C. Maitland<sup>1</sup>

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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 Chung<sup>1</sup>, Wonjoon Oh<sup>2</sup>, Dongyoub Baek<sup>3</sup>, Sunwoong Ryu<sup>2</sup>, Won Gu Lee<sup>4</sup>, Hyunwoo Bang<sup>2</sup>



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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\*<sup>1</sup>, Dmitry Natanel\*<sup>2</sup>, Matthew Boyko<sup>2</sup>, Alexander Zlotnik<sup>2</sup>, Honore N. Shiyntum<sup>3</sup>, Julia Grinshpun<sup>2</sup>, Dmitry Frank<sup>2</sup>, Ruslan Kuts<sup>2</sup>, Evgeni Brotfain<sup>2</sup>, Jochanan Peiser<sup>2</sup>

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

### **Disclosures**

No conflicts of interest declared.