Sensor for Animal Monitoring (Ramot)

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It is clear today that brain activity of a restrained (or sedated) animal is completely different from that of a freely behaving animal. That is why neuroscientists are seeking to find ways to study animals freely behaving on their natural grounds. TAU's interdisciplinary research has led to the development of the MULTI SENSORS – Multi Modal Recording Systems for small animals, which are designed to enable recording the world as the animal senses it, without the need of transmitting the information.

SMALL IN SIZE AND WIDE IN FUNCTIONALITIES

The Multi Sensors were developed by Dr. Yossi Yovel from the Department of Zoology and the Sagol School of neuroscience, and Dr. Gabor Kosa from the School of Mechanical Engineering. The devices come in two models:

Super-Light Multi Sensor

The smaller of the two sensors (2.1x1.5x0.4 cm) weighs only 1.7 grams together with the optional GPS and ultrasonic microphone. An 9 DoF inertial measurement module (0.3 gr) can be attached on demand. Additional sensory modules can be easily attached allowing to record any analogue signal such as: EEG/EMG, heartbeat , temperature, etc. The additional module weight is 0.4 gram.

Cam-Plus Multi Sensor

The larger device is less than 10 grams in weight and includes a camera, an ultrasonic microphone, an accelerometer (9 DoF sensor) and 4 analogue channels that can record physiological data such as neural activity (or EEG/EMG), heart-rate or body temperature and can be easily carried by a rat. Its design allows neuroscientists to enjoy the benefits of gathering on-board long term high quality behavioral data from freely moving animals.

Multi Sensor Advantages:

- Minimized design - smallest of its kind!: The Multi Sensors were specially designed to meet the requirements of lightweight (