

# Extremely compact hyperspectral camera for drone and smartphone

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**Abstract** To advance IoT (Internet of Things) technologies, we proposed two kinds of revolutionary compact hyperspectral camera for UAV (Unmanned Aerial Vehicle) such as drones, or smartphones. The palm-size 2-dimensional spectroscopic imager was able to be applied for mid-infrared lights and to be mounted on the multicopter drone. The thumb-size 1-dimensional snapshot hyperspectral camera has the high time-resolution and is configured with very simple optics without mechanical movements. Thus, the one-shot-type hyperspectral camera will be developed into built-in spectroscopy for smartphones.

**Keywords:** Fourier spectroscopy, hyperspectral camera, spectroscopic imaging, smartphone, UAV, drone