

# The Fly Test of Pushbroom Hyperspectral Imager on the Unmanned Aerial Vehicle and its application for the Health of Banana

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**Abstract.** The lightweight pushbroom hyperspectral imager developed for UAV (unmanned aerial vehicle). The specification is the spectral range of 400 to 1000nm and the spectral resolution about 5nm, the imaging lens can be replaced for the other purpose of specific application. The hyperspectral imager with the weight of 0.5 kg was set on the vehicle combined with internal measurement unit for recording the position status on the fly. The vehicle fly at the height below 300m and spectral image is grabbed with the rate of 30 frame/sec as the view of field at 80°. The primary result of hyperspectral image studied the growing area and health of banana at the southern Taiwan, especially the disease of yellow leaf on the banana tree. .

**Keywords:** Hyperspectral Imager, Spectral Image Analysis, Precision Farming