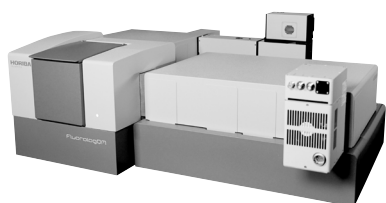


## NIR Fluorescence Spectrum Measurement



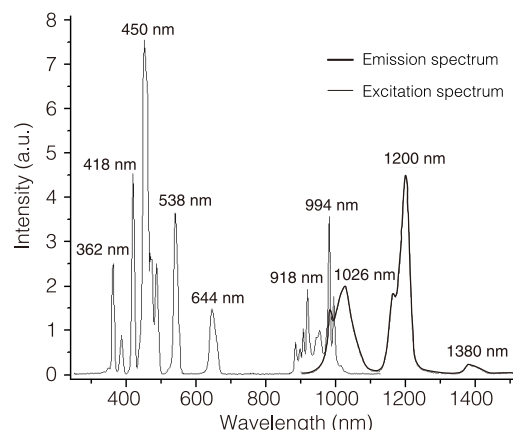
### Fluorolog-QM

Fluorolog-QM is the super sensitive NIR steady-state Spectrofluorometer (Spectrum range 190-550nm)



### Duetta

Duett is a 2-in-1 spectrofluorometer (Fluorescence and absorbance, spectrum range 250-1100 nm)

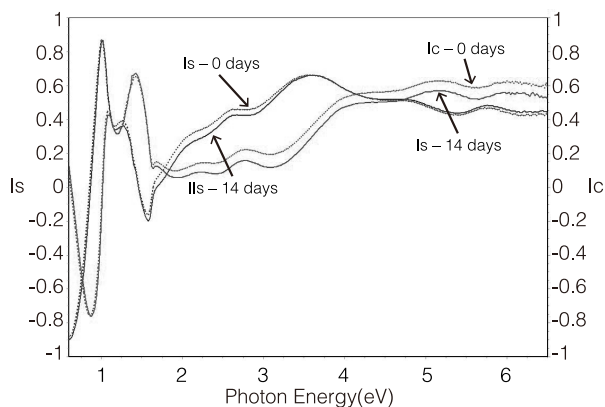


Ho ion emission and excitation spectra measured by Fluorolog-QM

## Thin Film Analysis and Depth Profile in perovskite solar cells



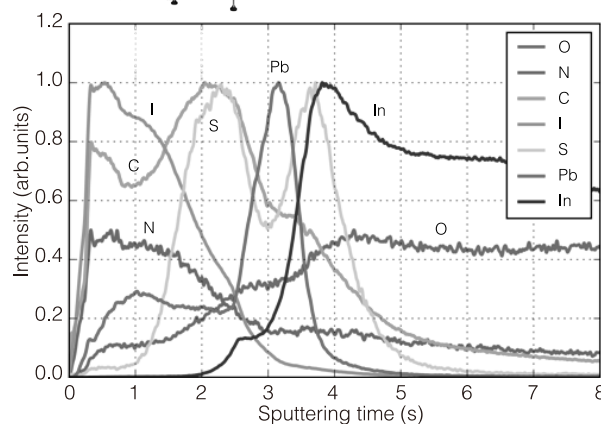
### Ellipsometer UVISEL Plus



The difference of ellipsometric responses of the structure  $\text{CH}_3\text{NH}_3\text{PbI}_3/\text{PEDOT}/\text{ITO}/\text{glass}$



### GD-OES GD-Profiler2



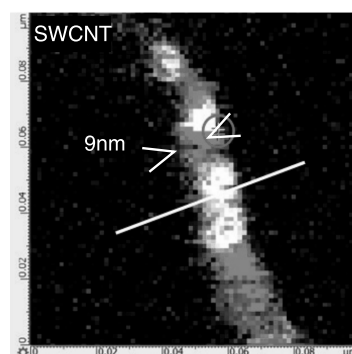
Qualitative elemental depth profile after 14 days of the perovskite material

## Nano Scale Mapping of Nanomaterial



### AFM+Raman XploRA Nano

XploRA PLUS/INV integrated with Scanning Probe Microscopes (SPM) can provide nano imaging spectroscopy of Raman and SPM simultaneously. This system can get high speed TERS imaging at nano scale.



Hyperspectral TERS map (100 nm x 100 nm, 1.3 nm step size) of an isolated CNT