BUNKOUKEIKI Model CMM-250

High Sensitivity Carrier Mobility Measurement System

The Model CMM-250 has been designed to measure the electron and hole mobilities which are very critical to evaluation of the thin film to be used for the EL elements and solar cells. The system consists of a short pulse nitrogen excitation die laser for carrier generation, high speed sampling electronics, sample compartment and data processing system. Our noise prevention measures and unique signal processing have reduced noise significantly so that fast response such as nano-second order and high detection sensitivity have been achieved in order to measure the electron and hole mobilities. Changing different die (as an option) of the die laser enables the system to oscillate the wavelength range from 337nm to 730nm with pulse width shortened in 600 pico second. In addition to this TOF method measurement, the system with an optional unit is capable to measure mobilities by FET method.

Features

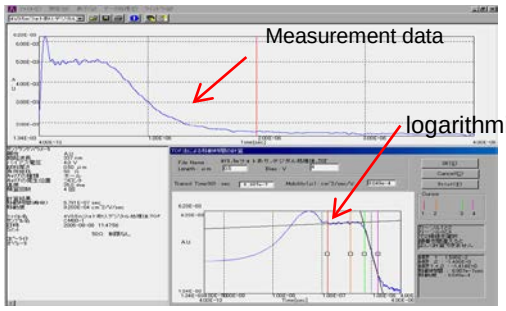
- Achievement of time resolution at nano-second enables the system to measure mobility such as 10^{-7}–10^{-1}cm^2/V·sec.
- Easy Operation with probe/sample compartment
- New designed optics and data processing enabled to obtain high SN ratio data

Measurement

Mobility calculation

While checking the measurement data, mobility can be easily calculated.

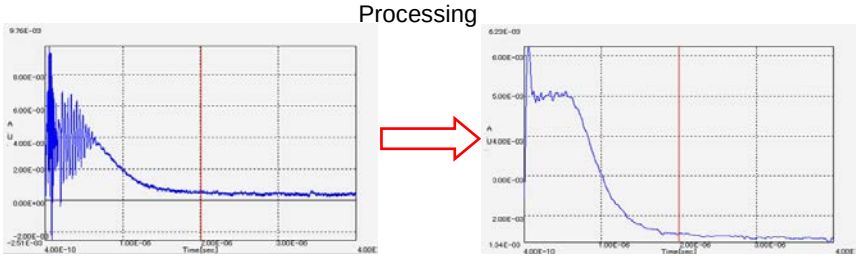
By putting cursor on the inflection point, mobility can be calculated automatically while seeing the logarithmic converted data.



Signal processing

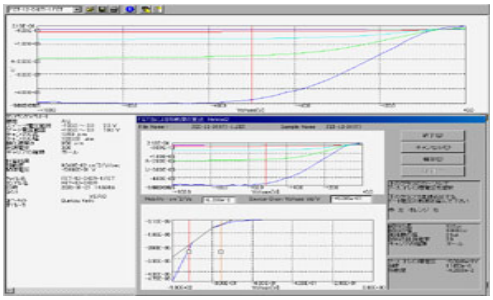
In addition to noise prevention, our unique signal processing enables the system to calculate very small signal data with large noise. The measurement can be applied to the thinner film or high mobility sample, which extends the measurement range.

Processing



FET Measurement (Option)

Installing the optional probe and software,the system is enabled to measure mobility measurement for FET type element.



Specifications

Light source: nitrogen excitation die laser
Nitrogen laser pulse width: 600psec
Nitrogen laser output: 250KW@10Hz
Output wavelength: 337.1nm
360～720nm(die is optional)
Die laser pulse width: 400psec at 480nm
Measurement time resolution: less than 10 nsec
Measurement mobility range: 10-7 ~ 10-1cm 2/V･sec
Bias voltage : 0～±500V
Load resistance: 50Ω～100KΩ 5 steps

Y axis time resolution: 8 bits（11 bits in averaging ）
Synchronization: Excitation light monitoring system by PIN photodiode
Personal computer
Laser control : Laser ON/OFF
Data acquisition: 1shot ~256 shots
Data analysis: Data display, save
Y and X axis logarithmic conversion
Calculation of transit time and mobility

**Product specifications and external appearance are subject to change without prior notice.*

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