MBM-2201

NON-CONTACT MOBILITY & SHEET RESISTANCE METROLOGY SYSTEM

MBM series provide results **for compound semiconductor device manufacturers**, having critical need to know the uniformity of mobility and resistivity.

MBM-2201 is a **non-contact** and non-destructive system for the **characterization of** charge carrier **mobility and sheet resistance** of compound semiconductors with high resistivity substrates **up to 200 mm** sample sizes.

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Technology

In compound semiconductor device manufacturing there is a **critical need to know the uniformity of resistivity and mobility of samples.** This directly impacts device performance and almost always, **higher mobility leads to better** device **performance**, while other parameters are equal. Knowing these positions on a sample by creating a wafermap is critical for process optimization.

MBM-2201 is the ultimate choice for characterizing the conductive properties of compound semiconductors **on the entire sample surface**. It provides a **non-destructive** and **non-contact** method that **characterizes mobility** based on RF reflectance and a permanent magnet; and **sheet resistance** using Eddy Probe measurement **of samples up to 200 mm** sample sizes.

MBM-2201 fulfills industrial standards with **factory automation** and its non-damaging design allows

- **fully-automated wafer handling** capability,
- **no monitor wafers** are needed,
- **high sampling frequency**.

Features

Improved measurement ranges:

Wide measurement ranges with excellent repeatability

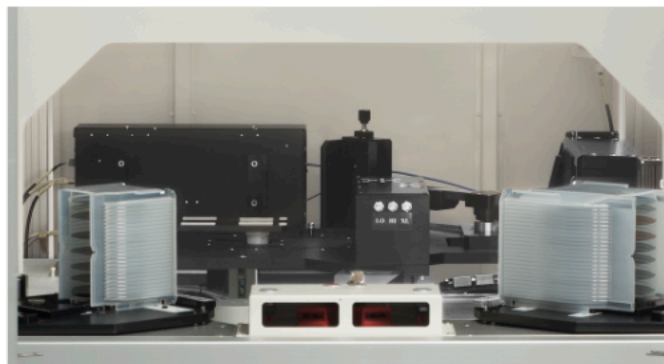
- Mobility range: 100-20.000 $cm^2/(V\text{-}s)$
- Sheet resistance range: 0,035-3000 Ω/sq

Platform:

- Auto-loading of 4”-5” or 6”-8” samples, manual loading of 3” samples
- Dual loading station
- 200 mm mapping stage
- Designed for ISO Class 1 cleanroom without FFU
- SAM2 based software compliant to SEMI® standards

Options:

- SECS/GEM communication capability
- Ionizer
- OCR capability for transparent samples
- Calibration setup wafers



Applications

- Mobility measurement
- Sheet resistance measurement
- Charge carrier density measurement

Measured Parameters

On wide variety of **compound semiconductor** samples:

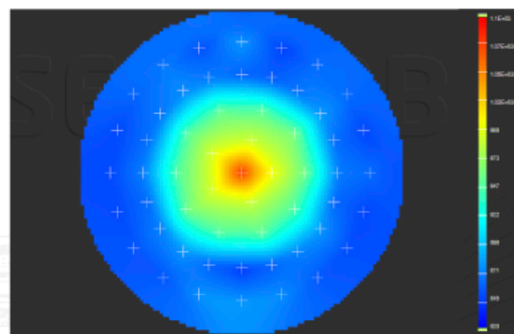
- GaN / AlGaN, GaAs, InP, InAs, InGaAs, Graphene, SiC

Mobiliy measurement

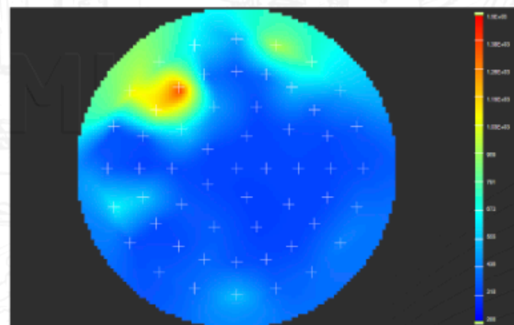
- Microwave Hall power
- Microwave reflectance

Sheet resistance measurement

- HI, LO, XLO Eddy current



Mobility measurement map



Sheet Resistence measurement map

This material is for information purposes only. Equipment acceptance is based on contracted specifications.

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