WAFER PROFILER CVP21

ECV Measurement of Doping Profiles

Patents: DE-10256821, US-7026255 (further pending)

CVP21 including option FP: Footprint 60*80cm
for minium required clean room space

Wafer Profiler CVP21:
The *COMPLETE* Solution.

COMPLETE Material Range:

Group IV: Si, Ge, SiC
Standard III-V: GaAs, InP, ...
Ternary: AlGaAs, GaInP, ...
Quaternary: AlGaInP, ...
Nitrides: GaN, AlGaN, AlInN, ...
II-VI: ZnO, CdTe, CdHgTe, ...

COMPLETE Sample Range:

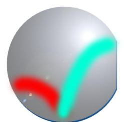
Stacked layers no problem
No restrictions concerning substrate
Sample size: 4*2 mm² ... 8" Wafer

COMPLETE Resolution Range:

$< 10^{12}$ cm^{-3} ... $> 10^{21}$ cm^{-3} (*)
1 nm ... 100 µm (*)
(*) may depend on material type/ sample quality.
Please ask for sample measurements.

COMPLETE System:

HiRel - Calibration-free - Easy-to-Use
Wafer-Stepping - Camera-Control
Recipes - Auto-Load/Unload/Reload
Manual/SemiAuto/FullAuto



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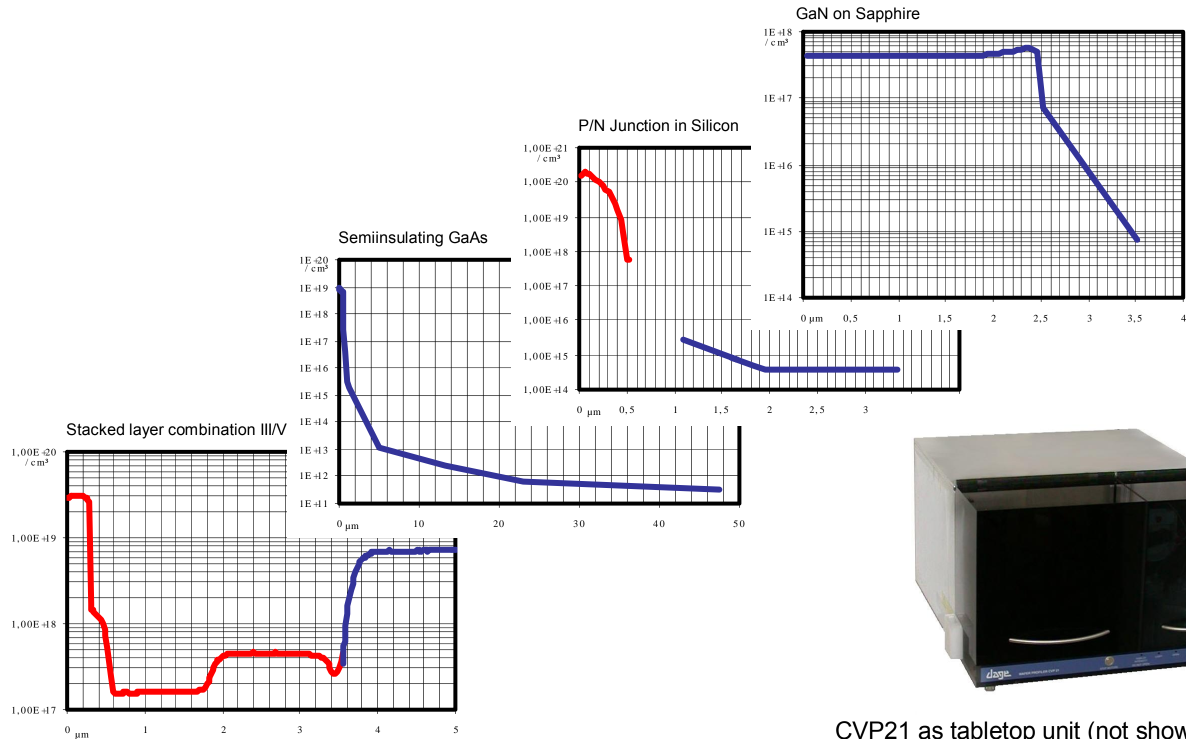
Typical results:



CVP21 as tabletop unit (not shown:
Drain can and PC with monitor and printer)

ECV Profiling - Solution Advantages:

	Hall	SIMS Secondary Ion Mass Spectroscopy	SRP Spreading Resistance Profiling	ECV Electrochemical CV-Profiling
Monitor the doping concentration	✓	✓	✓	✓
Monitor the electrical activation of dopants, including doping type n/p	✗	✗	✗	✓
Monitor the crystalline quality of the sample	✗	✗	✗	✓
Easy sample preparation	✗	✗	✗	✓
The substrate may be conductive	✗	✓	✓	✓
The thickness of the epi layer may be unknown	✗	✓	✓	✓
The depth profile may be measured with a resolution down to 1nm	✗	✓	✗	✓
Several layers may be measured	✗	✓	✓	✓
A wide range of materials may be analyzed	✓	✓	✗	✓
Concentrations below 10^{14} cm^{-3} may be measured	✓	✗	✗	✓
Easy equipment preparation (no tedious calibration required)	✓	✗	✗	✓
Wafer topography may be measured on a complete wafer	✗	✗	✗	✓
PEC etching (Photo-Electrochemical etching) may be evaluated	✗	✗	✗	✓
The surface may be etched/passivated at start of the measurement	✗	✓	✗	✓

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