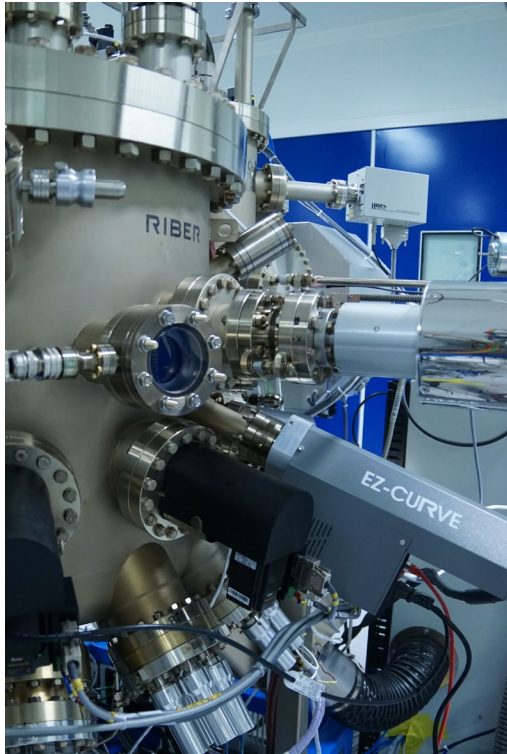
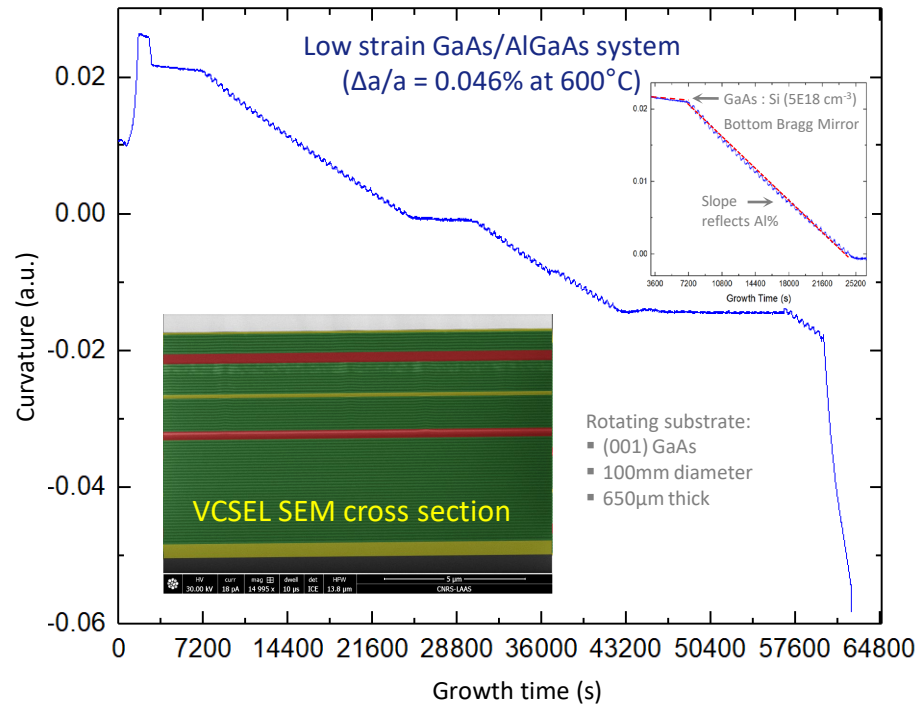


EZ-CURVE® Real-time curvature measurement

Monitor your thin film deposition and vacuum treatment process in real-time with Riber Magnification Inferred Curvature (MIC) tool



EZ-Curve® MIC equipment installed on Riber MBE412 system



Continuous observation of a complete structure 17 hours growth, 7.5µm thick VCSEL + modulator

L. Marigo-Lombart - PhD thesis - LAAS-CNRS - 2018

MAIN BENEFITS

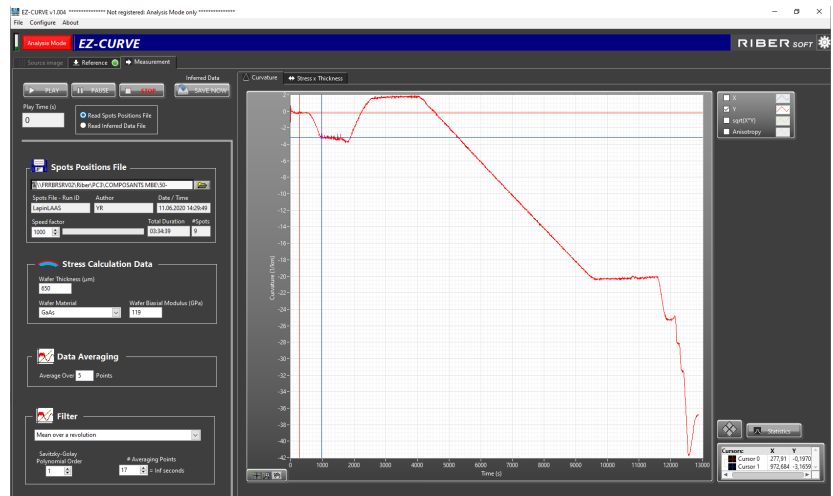
- **In situ** stress, bow and curvature measurement, **in real time**
- Set precise growth patterns and **monitor deviations**
- **Detect specific growth events** and **retrieve fundamental knowledge** about growth mechanisms
- Suitable for **various thin films deposition techniques** (CVD, MBE, PVD,...) and **vacuum treatment process** (plasma etching, annealing, quenching ...)
- **Unrivalled** curvature **sensitivity**
- **Simultaneous** spherical and cylindrical bowing, **anisotropy measurement**
- Compatible with **low lattice mismatch systems** like AlGaAs/GaAs
- **Thick wafer** compatible - up to few mm
- **Highly stable** & alignment-free measurement
- Wide-range wavelength source – **immune to reflectivity change**, no need to adjust exposure time
- **Immunity to wafer flatness** – possible use with patterned wafer

KEY FEATURES

Parameter	Specifications
Curvature range (min - max)	0,0008 - 200 000 km ⁻¹
Sensitivity (1-std dev)	Up to 8x10 ⁻⁷ m ⁻¹ (5x5 matrix, 5s integration / 500 points – θ = 70°)
Measured standard deviation	8.33x10 ⁻⁶ m ⁻¹ (θ = 0°) // 2.85x10 ⁻⁶ m ⁻¹ (θ = 70°)
Radius range (max – min)	1 250 000 - 5x10 ⁻³ m
Source lifetime	50 000 h
Measurement frequency	100 Hz
Rotation speed range	0-100 rpm
Viewport to sample distance	Adjustable from 75 mm - depending on vacuum chamber dimensions
Flexible installation angle on the reactor	0 - 70°

SOFTWARE

- Curvature, Stress, Phase and Anisotropy measurement & display
- Intuitive data acquisition
- Powerful data saving functions
- Real time mode up to 100 fps
- Flexibility to share data with other software incl. Riber Crystal XE
- Post-processing and data treatment
- Remote modbus interface



EZ-Curve software interface

