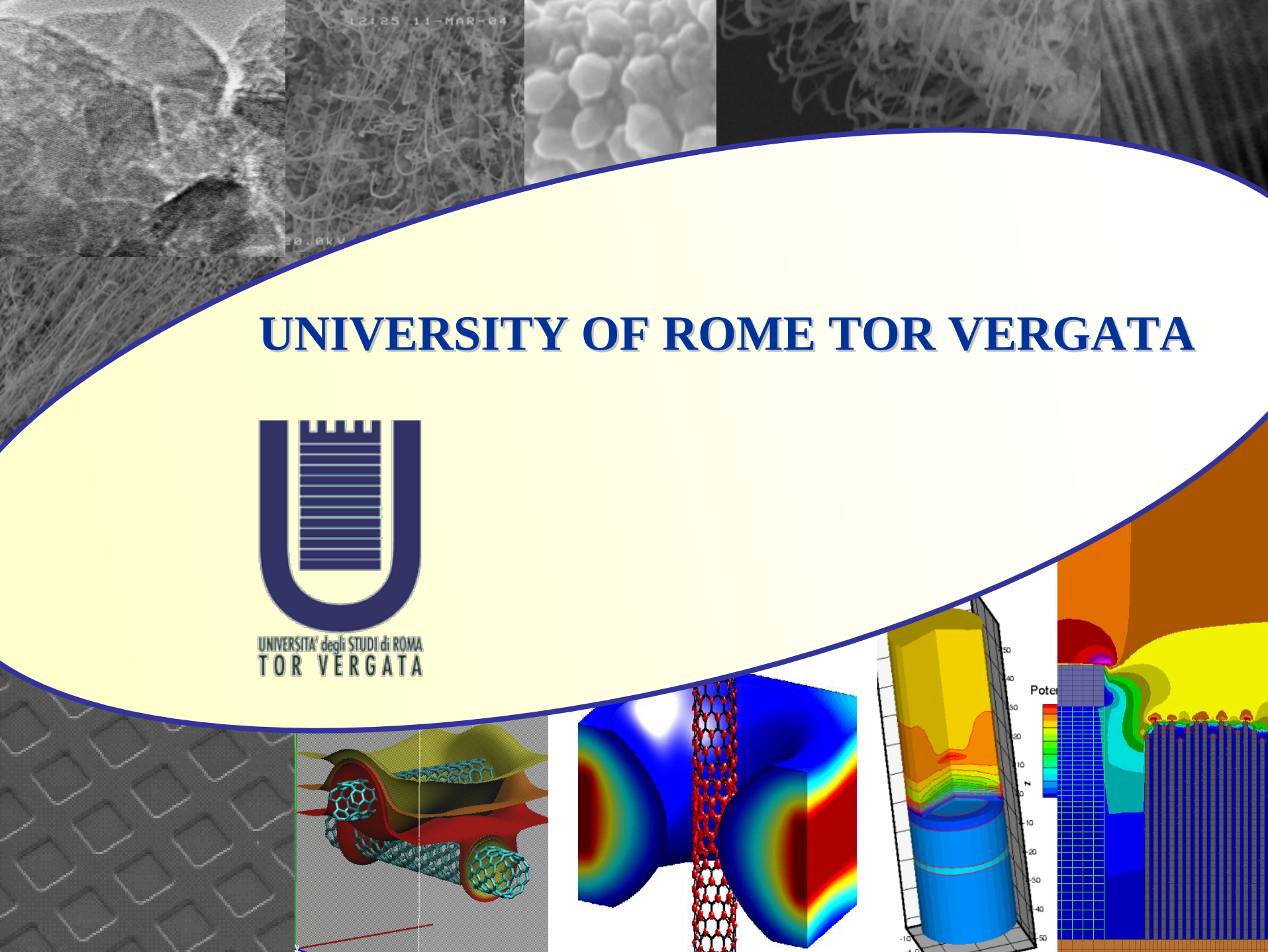
UNIVERSITY OF ROME TOR VERGATA

UNIVERSITA' degli STUDI di ROMA
TOR VERGATA



SCIENTIFIC TEAM

Dep. of Science and Chemical Technology

Prof. M.L.Terranova

Dr. V.Sessa

Dr. S.Orlanducci

Dr. E.Tamburri

F. Toschi (PhD)

A.Ciorba (PhD)

V.Guglielmotti (PhD)

D. Sordi (PhD)

Dept. of Physics

Group of superconducting devices and systems

Prof. M.Cirillo

Dr. M.Lucci

I.Ottaviani (Ph.D)

Dep. of Electronics Engineering

Prof. A.Di Carlo

Dr. C.Paoloni

Dr. F.Brunetti

Dr. A. Pecchia

R.Riccitelli (PhD)

G.Ulisse (PhD)

MANAGEMENT TEAM

Dep. of Electronics Engineering



Prof. Aldo Di Carlo (Scientific)

Dr. Silvia Pecora (Administrative)

Secr. Giorgia Di Lorenzo

The Rectorate
The International Relations Office

Director : Dr. Marina Tesauro

Activities

Financial assistance (Budget)

Legal Assistance (Cons. Agreement)

Audit consulting

Fiscal and accountant assistence



The Labs @ Physics







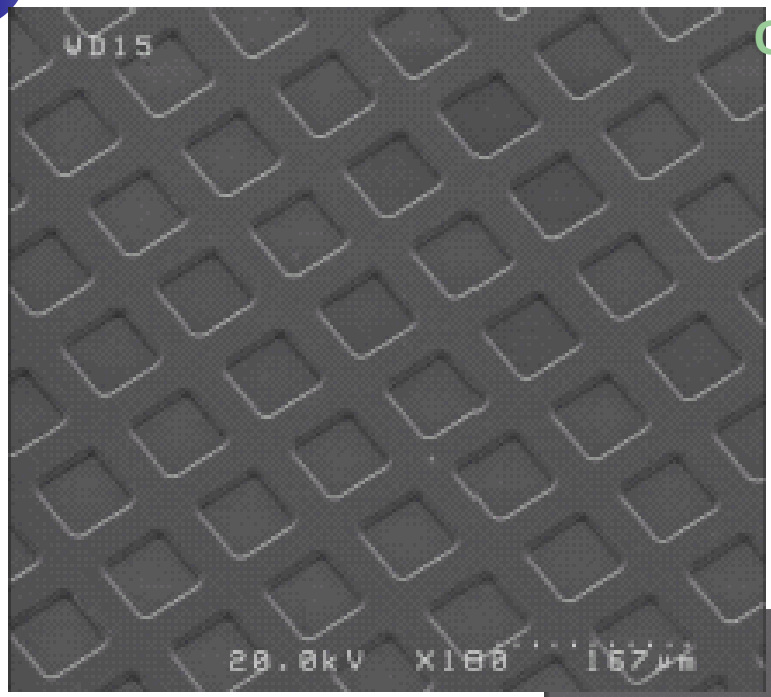


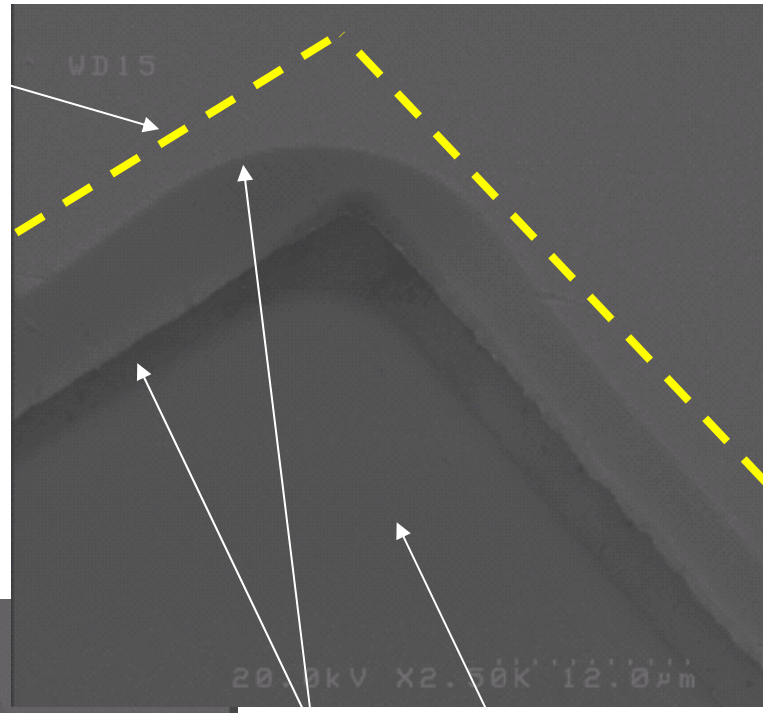


Laboratorio
M. Cirillo

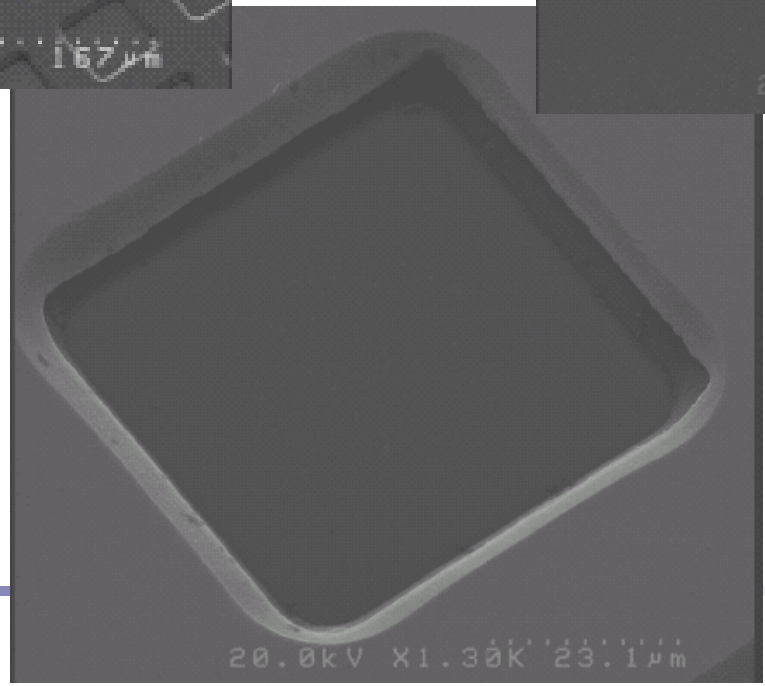
70 *sqmt class 1000 clean room with a 6 sqmt class 100 box. Down to 1 micron planar line resolution : UV Pattern generator and stepper (in class 100) for the fabrication of photomasks, UV mask aligner, spinner, reactive ion etching, ion gun milling, high resolution optical microscope, film thickness measurement set up, chip dicer and chip bonder. Several high vacuum systems (sputterings, evaporators).*

Integrazione griglia-anodo nell'array

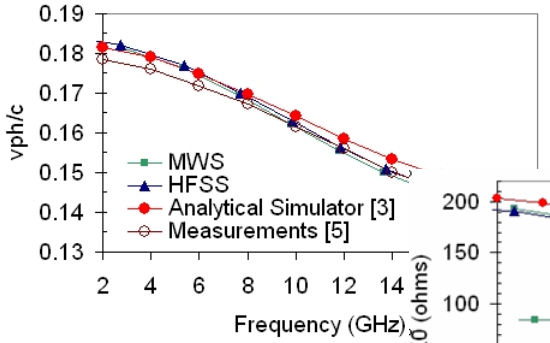


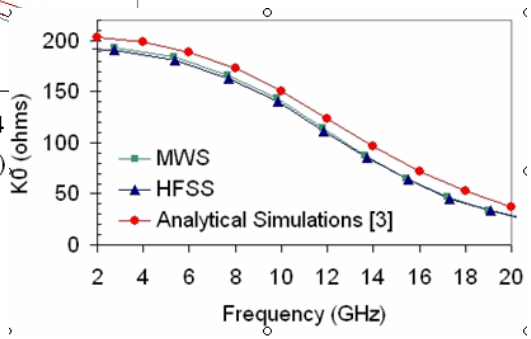




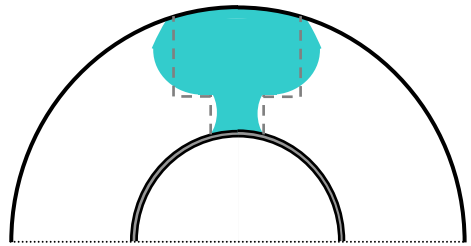


Travelling Wave Tube

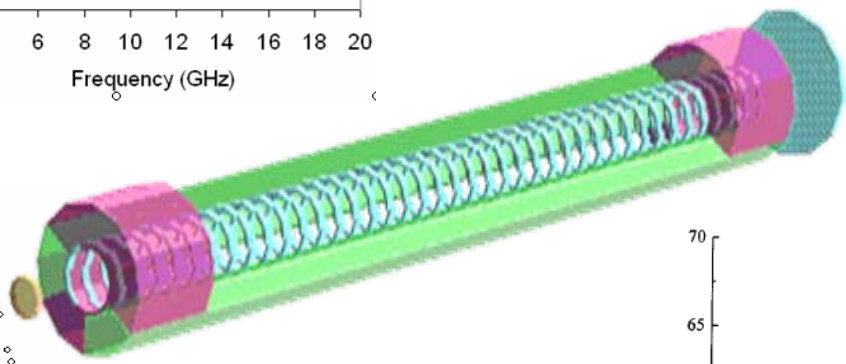


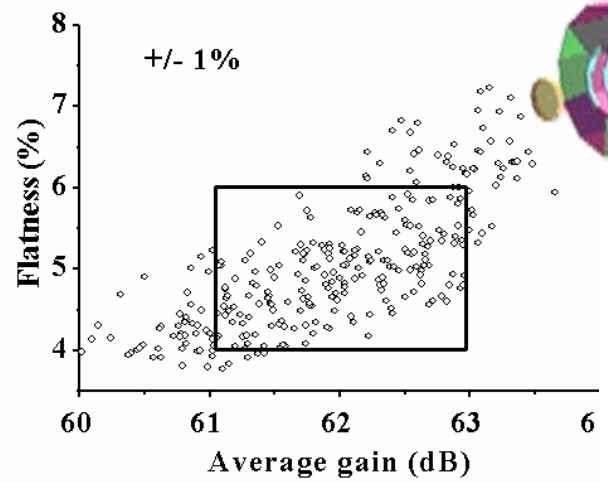


Cold parameter analysis

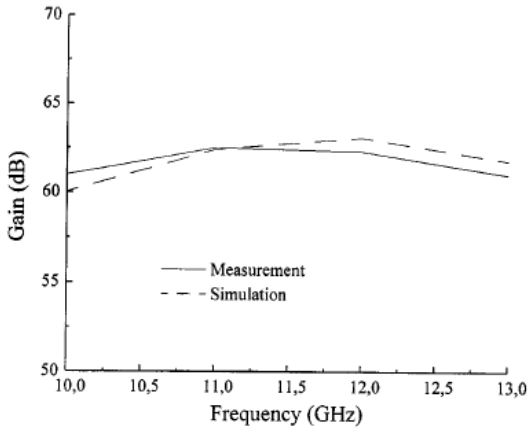


Rod shape optimization



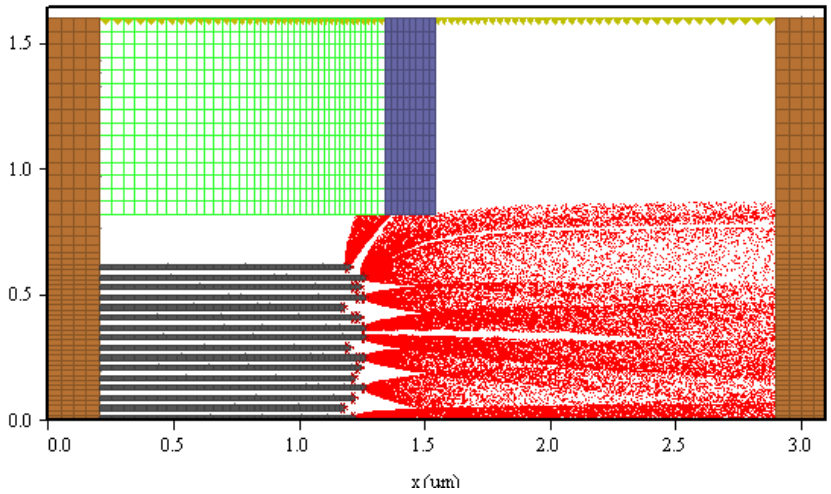


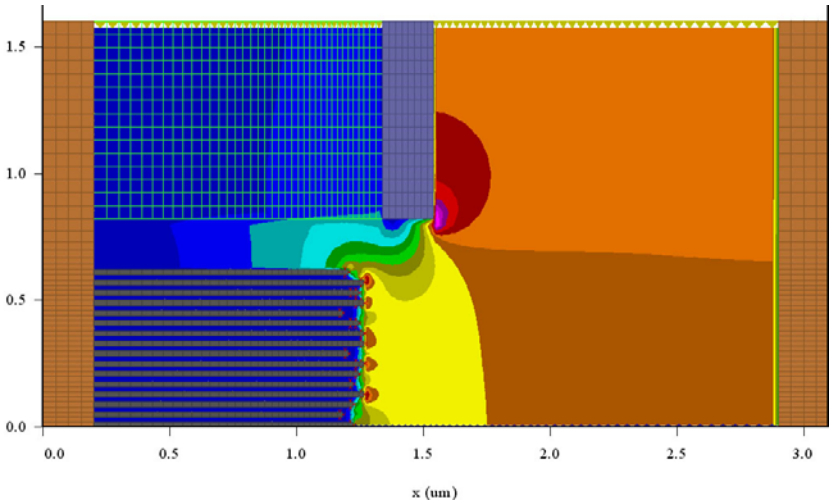
Statistical tolerance analysis

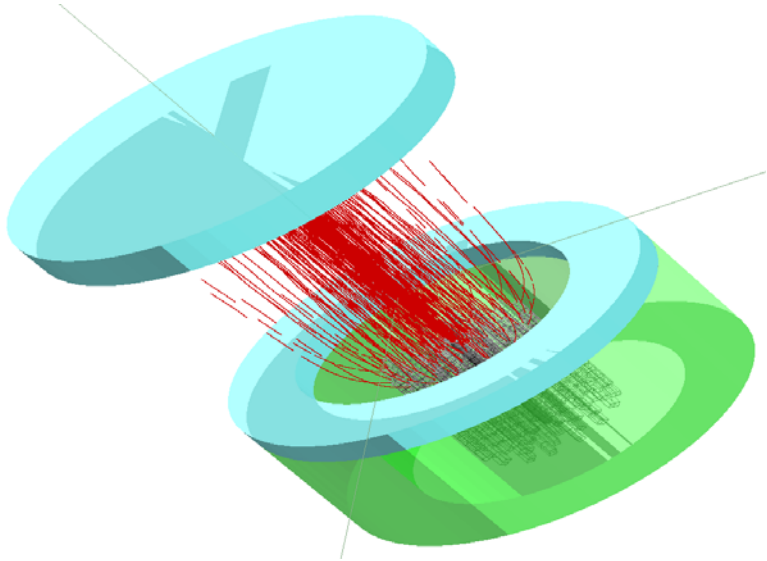


Small signal gain

MAGIC 2D/3D (Particle in cell simulator)







TiberCAD Simulator

TIBER CAD

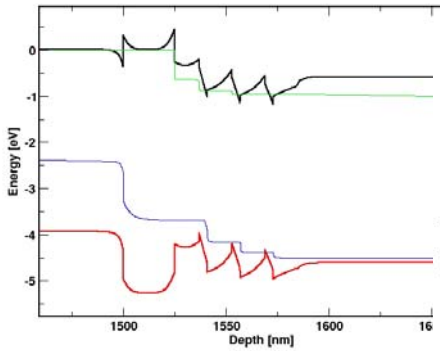
Simulations of LEDs



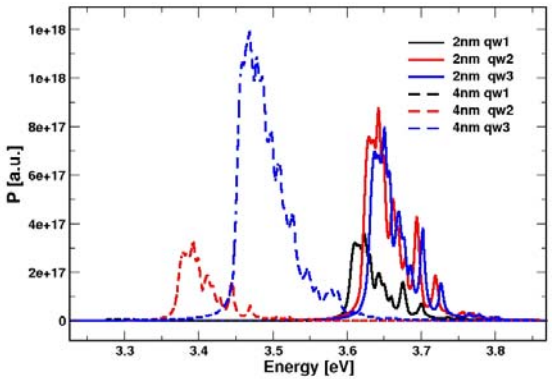
3 AlGaN/GaN QW

LED GaN/AlGaN

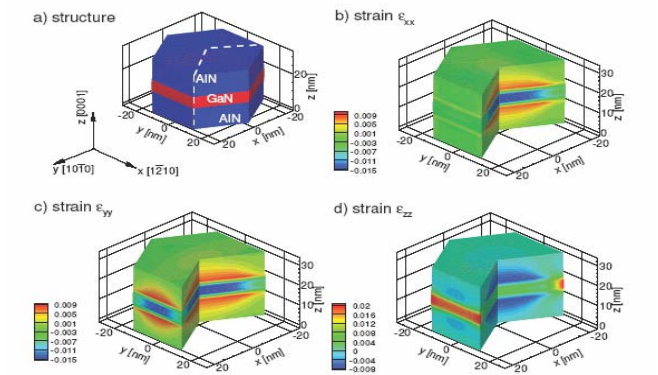
Quantum calculations



Emission Spectra

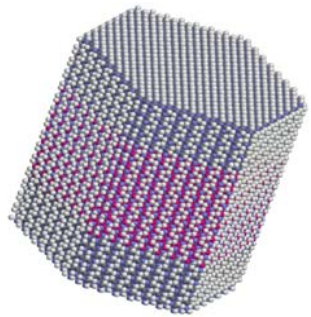


Continous Models strain field

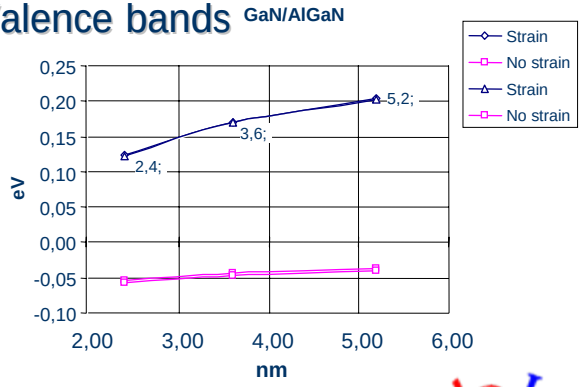


a) Deformed AlN/GaN/AlN quantum disc; b), c), d) contour plot of the diagonal strain components ε_{xx}, ly over the structure section. The section is indicated in subfigure a) by white dashed lines.

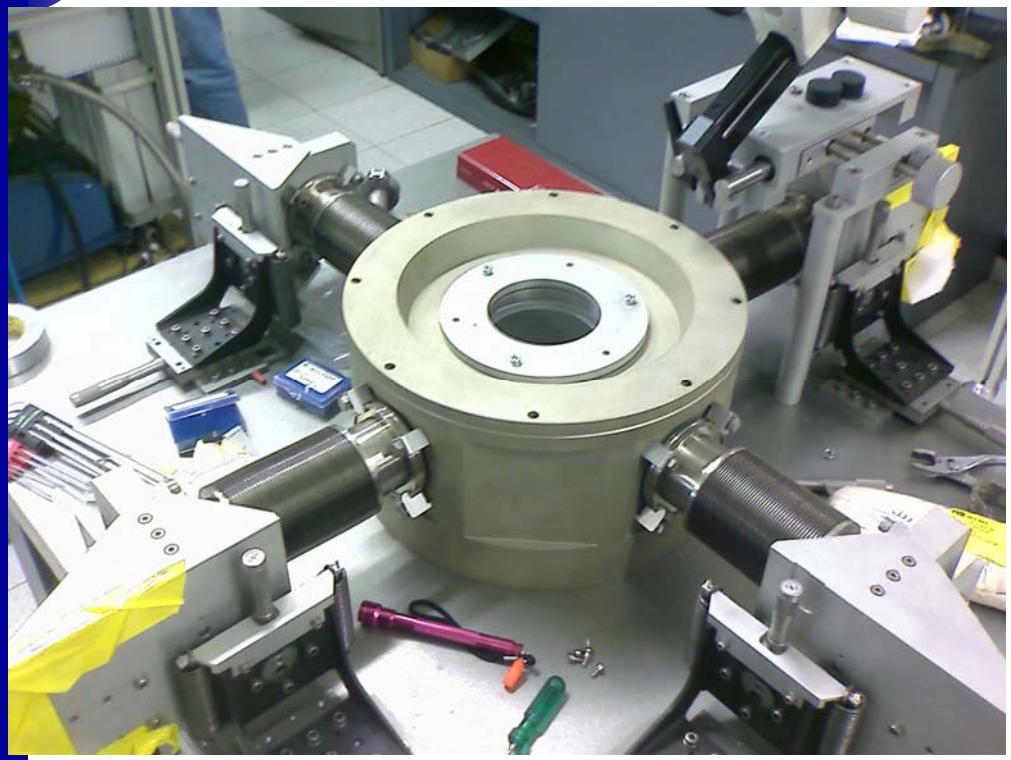
Atomistic TB Models



Valence bands GaN/AlGaN



Measurement Set-up @ TorVergata (E. Limiti)



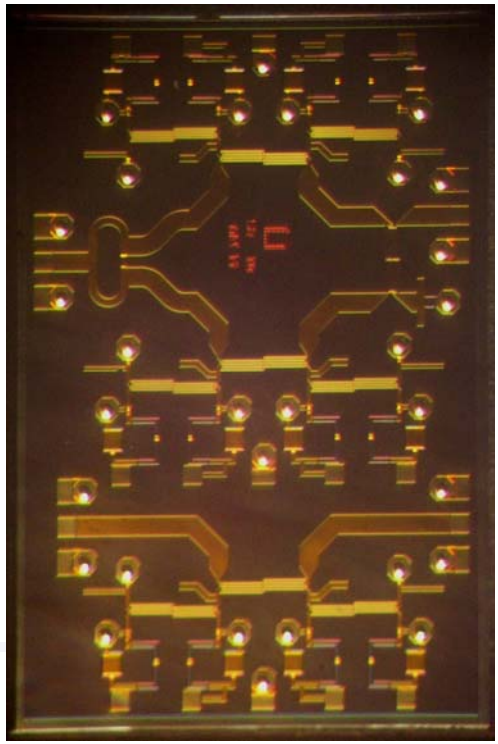
Thermally controlled characterisation

- Coplanar probing capabilities on wafer, under vacuum (10^{-7}) and cryogenic conditions (20K)
- Measurement frequencies: DC-40 GHz and eventually higher (via waveguide extensions)

Room-temperature capabilities for characterisation

Coaxial and on-wafer room temperature measurements DC-110 GHz under completion

Waveguide extensions planned up to 325 GHz



100 GHz modulator