Technology datasheet

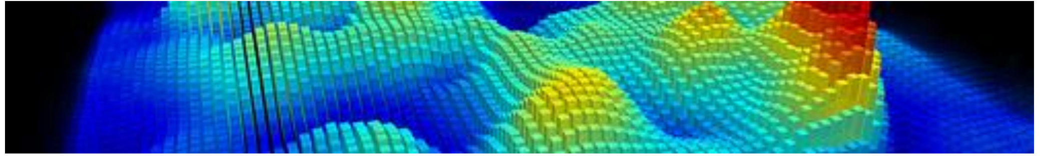
Electronics

Microelectronics & Nanoelectronics

SATT NORD

Technology Transfer Office

Measurement of the surface electric potential of operating devices



keywords

Atomic Force Microscope (AFM)

Surface electric potential

Operating devices

Capacitance second derivative

Semiconductors

contact

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Our laboratory has developed a new Atomic Force Microscopy (AFM) based technic to **accurately measure the surface electric potential profile** of devices in their **operating conditions (biased)**.

It is a **nondestructive** process.

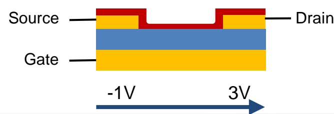
Measurements can be performed in **ambient conditions**, thanks to :

- Using a dual pass method (lift)
- Synchronizing of the device and tip biasing with second pass only *patented*
- Using a force gradient sensitive method (EFM phase shift)

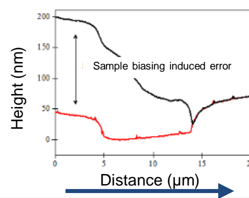
benefits

Accurate and **non-destructive** method

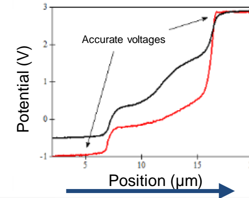
Thin film transistor application



topography



potential



Current technology

Our technology

applications

- Semiconductor device characterization
  - R&D
  - Quality Control
  - Fundamental research

Source of the technology

Pr Louis Giraudet
Laboratoire de Recherches en Nanosciences

development status

TRL5 : demo available in our lab

patent status

Patented

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Reference NANOPOTELEC – 12/2014 – version 1.0