



Université du Québec en Outaouais

– Département d'informatique et d'ingénierie –

C.P. 1250 - Succ. Hull (PQ) - Gatineau J8X 3X7

Téléphone: (819) 595-3900

Télécopieur: (819) 773-1638

Champs d'intérêt et de recherche :

Prof. Ahmed Lakhssassi

Intégration des systèmes microélectronique VLSI (Very Large Scale Integration), WSI (Wafer Scale Integration), SoC (System on Chip), MEMS (MicroElectroMechanical Systems).

Implantations dans des systèmes numériques programmables FPGA. IC Packaging. Technique de dépôt des couches minces par ablation laser LAD (Laser Ablation Deposition). Conception par la méthode des éléments finis FEM.

Collaboration à l'UQO et à l'extérieur

Yvon Savaria,	École Polytechnique de Montréal,
Mohamad Sawan,	École Polytechnique de Montréal,
Yves Blaquièrre,	UQÀM
Ricardo Izquierdo	UQÀM
Daniel Massicotte,	UQTR
Marek Zaremba,	UQO
Wojtek Bock,	UQO
Larbi Talbi,	UQO

In-situ Thermo-mechanical Stress and distortion Sensors for VLSI Systems (SoC, WSI, MEMS etc..)

Prof. Ahmed Lakhssassi
Université du Québec en Outaouais (UQO)

- Advanced telecom systems need increase of the speed operation and the IC's components miniaturization.
- Stress and distortion behavior is crucial during development of the VLSI (Very Large Scale Integration) systems, WSI (Wafer Scale Integration) , SoC (System on Chip), MEMS (MicroElectroMechanical Systems) circuits for their safe operation.
- The thermo-mechanical design aspect remains a major obstacle in front the most required performances of the electronic an telecom systems: increase of the speed operation and the components miniaturization.
- In both cases those results by junction overheating and associated induced higher thermal stress.
- The design of reliable large and powerful integrated systems requires the whole device *insitu* thermal stress measurement by array of sensors.
- The research program concern development of in-situ sensors that are capable of measuring locally thermo-mechanical induced and/or externally applied stress.

Research interest

- VLSI devices
- FPGA applications
- RF & Telecommunication Applications
- Optics/Photonics
- VLSI-Biomedical applications
- Sensors, Actuators and MEMS devices
- RF IC Design
- Integration of wireless transceivers on Chip
- SoC systems integration
- WSI
- MEMS
- IC Packaging
- Packaging-induced stressing effect on microelectronic devices
- FEM (Finite Element Method)
- LAD (Laser Ablation Deposition)
- Thin film deposition