

# ***GTS & its Products***

***Technology leaders in 3D TCAD simulation***



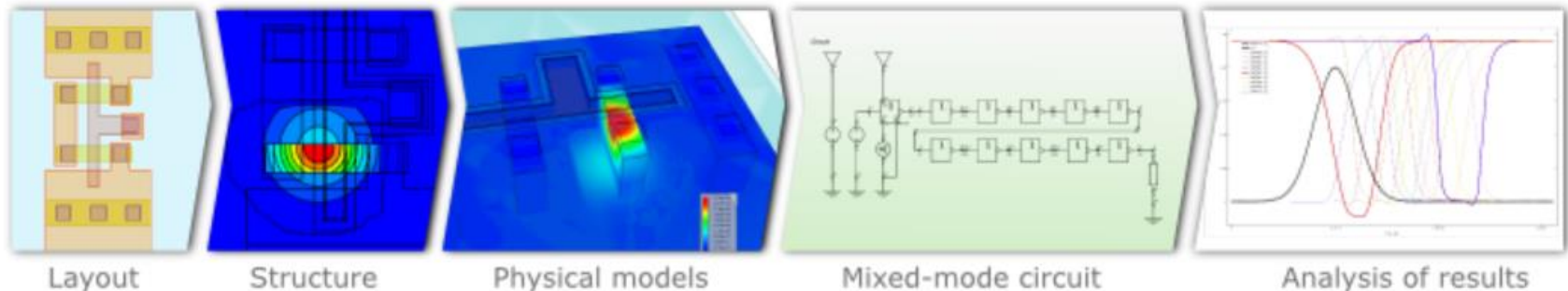
***Markus Karner, and Chen-Ming Tsai***

# GTS – Company Overview

Independent **TCAD Software** vendor in **Vienna**



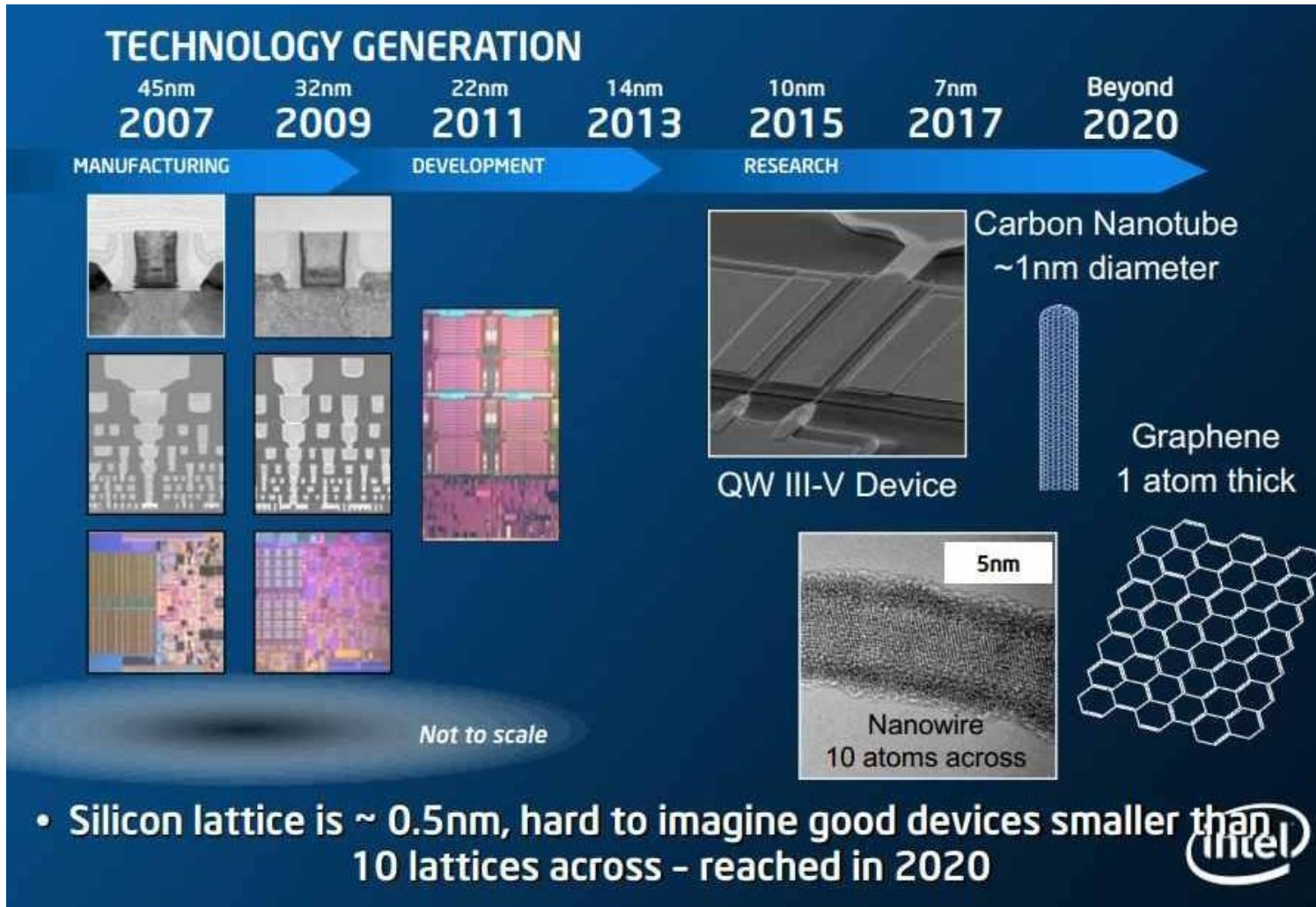
- *Founded as TU Wien spin-off in 2008*
- *From scientific background, developing full-3D TCAD software package for industrial use: Reliability & Variability, PPA analysis, DTCO*
- *Active in national, European, and international research projects (MoRV, WAYTOGO FAST, ...)*



*Simulation of a single-event transient (SET) on an inverter chain  
(From **device layout** to **circuit simulation**, all set up in less than **1 hour**)*

# Semiconductor - Roadmap

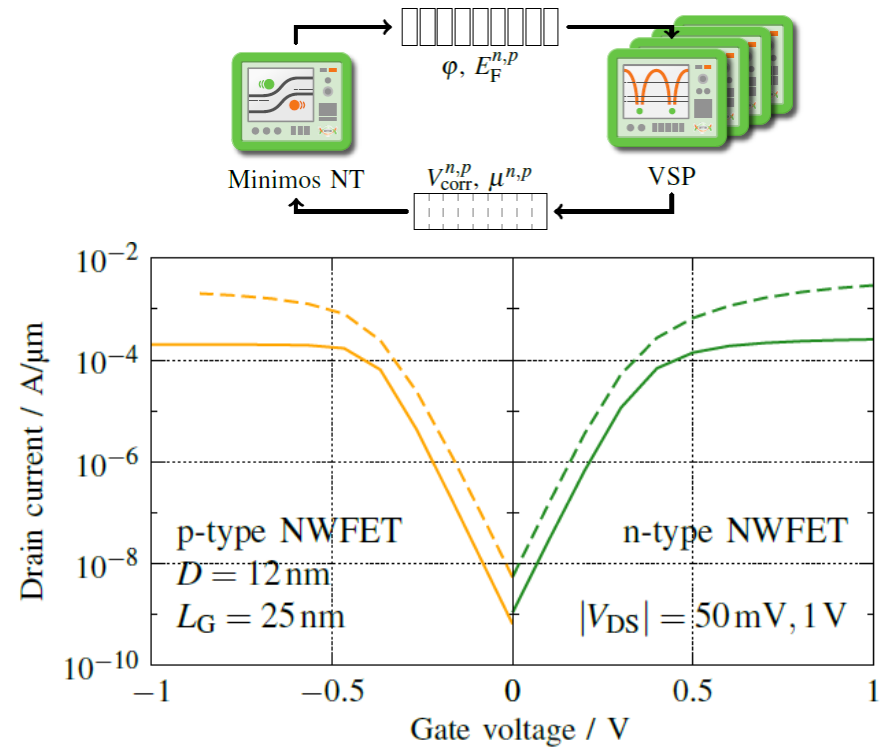
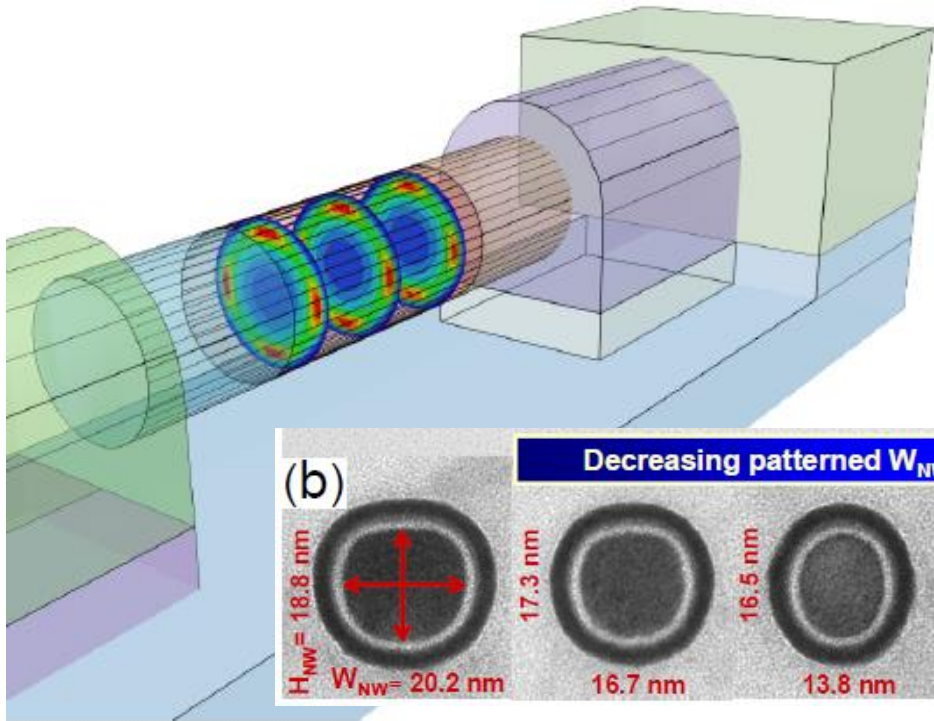
\* Intel 2013



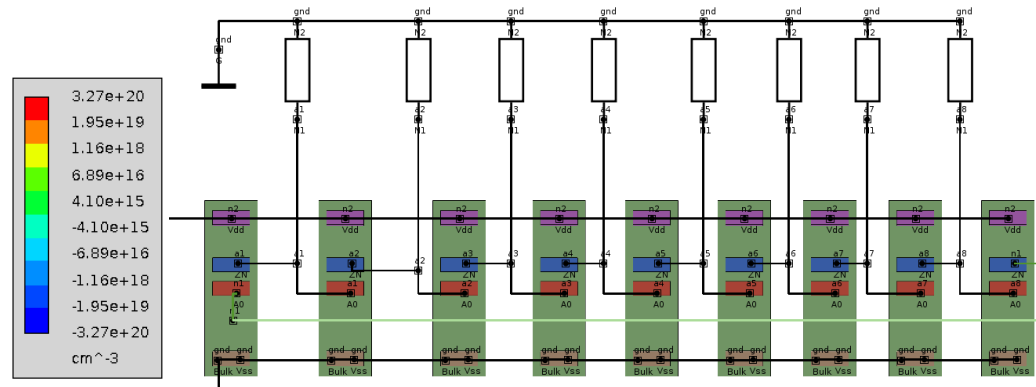
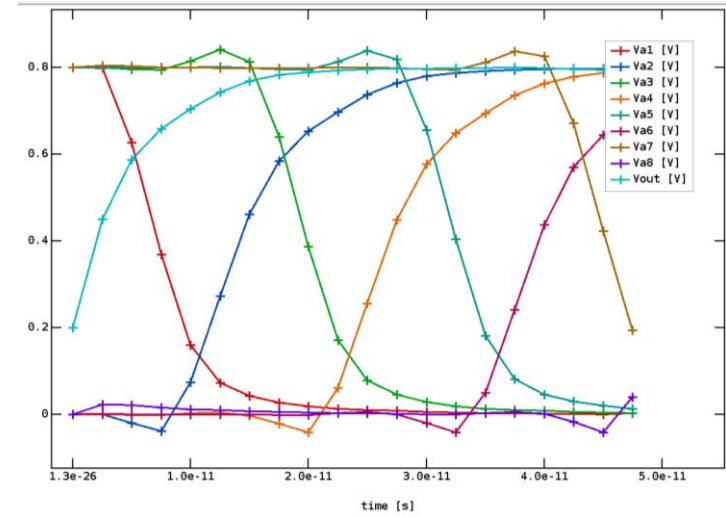
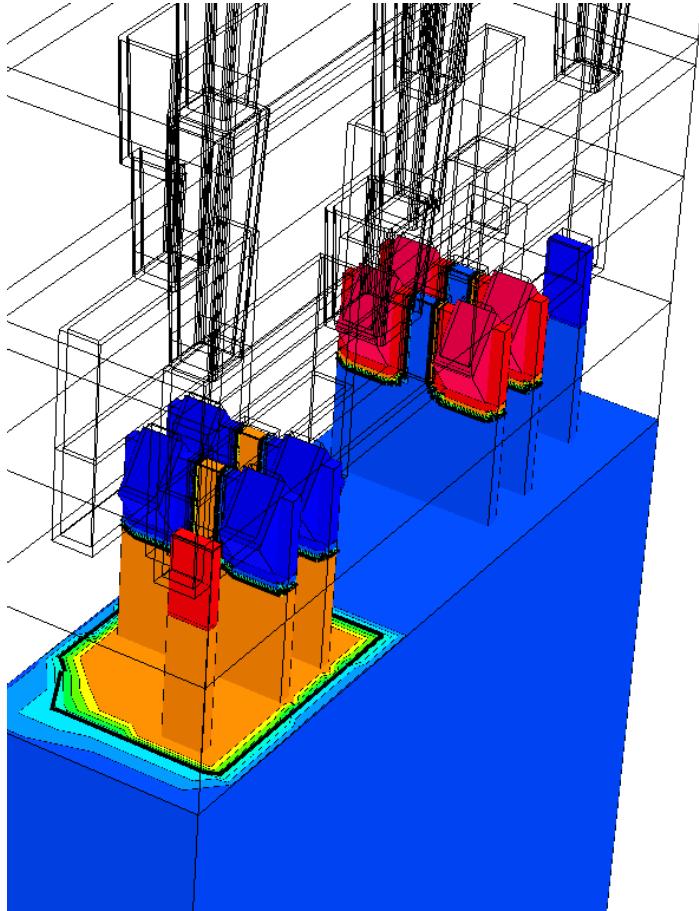
# Application: Path-finding

## FinFET & Nanowire transistors

- Scalable for  $L_g < 10$  nm
- Utilize quantum confinement as performance booster
- Hierarchical modeling chain including physical models



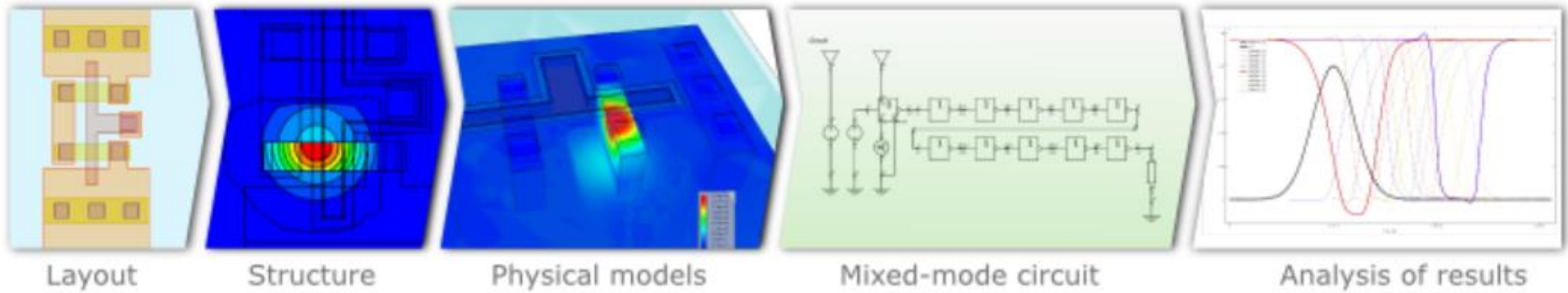
# Application: DTCO



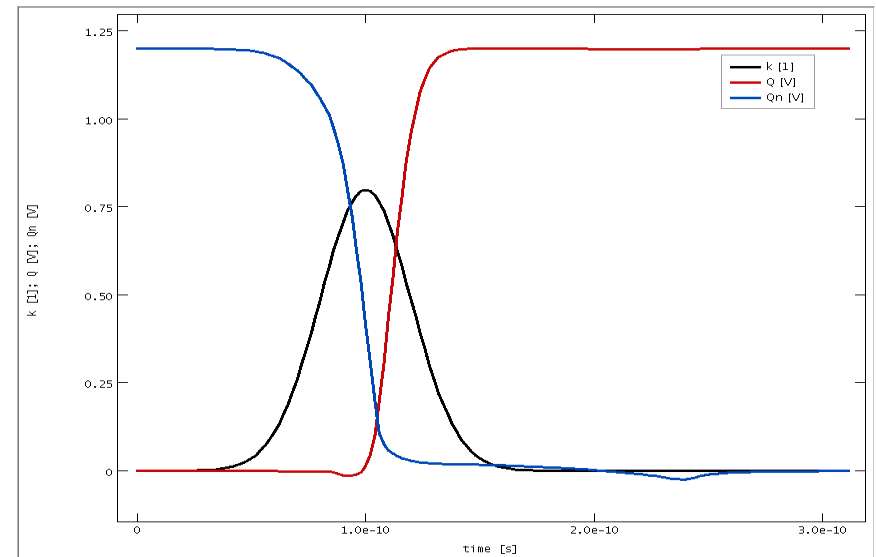
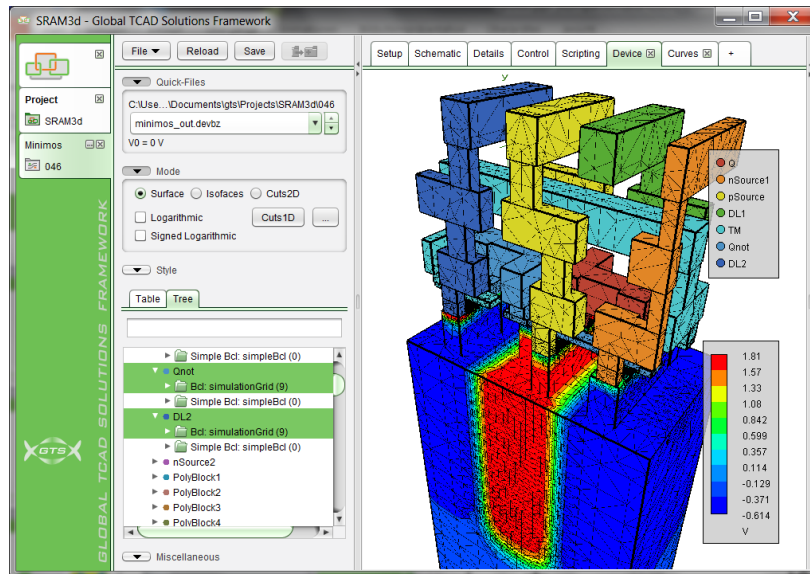
Mixed-mode simulation of a 9-states RO



# Application: Irradiation Reliability



Simulation of a single-event transient (SET) on an inverter chain  
(From **device layout** to **circuit simulation**, all set up in less than **1 hour**)



Simulation of a single-event upset (SEU) on a 90nm 6T-SRAM

# Summary

## Global TCAD Solutions

- High-tech SME with H.Q. in Vienna
- R&D cooperation's world-wide
- Local representative office in Hsinchu (Taiwan R.O.C.)

## Applications

- Path finding research
- Design technology co-optimization
- Reliability prediction



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