



# SINANO

« Silicon-based Nanodevices »

European Network of Excellence of the sixth Framework Programme  
(2004-2006)



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⇒ 41 Partners from 16 European Countries :  
main european labs and research centres

⇒ About 150 permanent researchers and 130 PhDs



⇒ Unprecedented collaboration in this field in Europe

[www.sinano.org](http://www.sinano.org)



## SINANO pursues the following objectives :

- ⇒ Push the limits of Si integration down to nanometric dimension
- ⇒ Work on long term and multidisciplinary objectives for the Nanoelectronics of the next 2 decades
  - ⇒ Overcome the number of research challenges of ultimate CMOS and post-CMOS devices and speed up technological innovation
- ⇒ Prepare the path for future industrial applications in the field of communication and computing

## Objectives (2) :

⇒ All the relevant topics for nanodevice optimisation :

- \* Top-down and bottom-up Nanotechnologies
- \* Physics of nanodevices
- \* Modelling and simulation
- \* Nano-characterisation
- \* New materials for Si-based device integration

## General presentation of the SINANO NoE

- **4 Scientific and Technical Workpackages :**
  - \* **New channel materials** for ultimate CMOS (SiGe, Strained Si, SGOI, SSOI, SiGe:C, Ge, ... + high k/metal gate)
  - \* **Non-classical nano-MOSFET architectures** (SOI, SON, double-gate, GAA, FinFET, vertical structures, ...)
  - \* **Emerging post-CMOS logic and memory nanodevices** (*Single electron devices* : SET, SET & CMOS hybrids, SEM, Nano-floating gate memory, QCA-cells; *Quantum devices* : Quantum wires, RTD, Ballistic junction devices, Spin-polarization devices)
  - \* **Modeling and simulation of CMOS and post-CMOS Nanodevices**

## General presentation of the SINANO NoE

- 2 horizontal Workpackages :
  - \* **Integration and Spreading of excellence** (Exchanges, Training, Workshops, Joint processing and characterization facilities (JPF/JCF), Joint modeling activities (JMA), communication-web site)
  - \* **Organization and Management** (Financial and Administrative management, Scientific and Project management, Knowledge management)

## SINANO Committees :

- **Executive and Scientific Committee** (every 3 months) :  
scientific coordinator (*head*), WP leaders, main industrial partners

=> proposes the following actions:

- \* Joint research projects (joint process/ characterization/ model. activities)
- \* Integration / spreading (use of JPF/JCF, exchange, training, Workshops, communication-web site)
- \* Joint activities with other european projects

## SINANO Committees (2):

- **Governing Board** (every year) :

A high level representative of each partner (*head*: Director of STIC-CNRS)

=> *strategic orientation and validation of E/S proposals*

- **Workpackage Committees** (when needed) :

for 4 WPs with all the WP partners (*head* : WP leaders)

