



Agence d'Etudes et de Promotion de l'Isère

AEPI 2011

Grenoble isère-france

Micro-Nanoelectronics

A proven breeding ground for technological breakthroughs and a major centre in Europe. Companies and public research constantly innovating for designing new applications in emerging markets.

Recent investments on a par with future ambitions

- ➔ From 2002, **€9 billion invested** in the nanoelectronics sector in Grenoble-Isère: Alliance-Crolles2, Minatec, Minalogic, Nanosmart Center (Soitec), Nano 2012, etc.
- ➔ Between 2005 and 2011, €535.3 million in public subsidies invested in 155 research and development projects via the **Minalogic** world-class competitiveness cluster.
- ➔ Grenoble-Isère ranks second in France, after Paris area, for the number of micro-nanoelectronics patents published by inventors.
- ➔ Ongoing program: **Nano 2012**. Between 2008 and 2012, STMicroelectronics, IBM, CEA plan to invest €3.5 billion at the STMicroelectronics fabrication and R&D unit in Crolles, outside Grenoble. Central and local government will be investing €457 million.
- ➔ Ongoing program: **Nanoelectronics IRT**. €460 million invested for 10 years (half of it financed by the private sector), starting in 2011, as part of the French government's economic stimulus package, Invest in the Future (Investissements d'avenir).

Key figures in Information and Communication Technology

- 500 companies
- 39,000 jobs in ICT
- 5,000 jobs in public research
- 6,800 students



Top companies: STMicroelectronics, Schneider Electric, Soitec, e2v Semiconductors, Radiall, Sofradir, Thales Electron Devices, Trixell, 40-30, Thales Avionics LCD, Atral, Mentor Graphics, Atrenta, Dolphin, Tronics, Synopsys, etc.

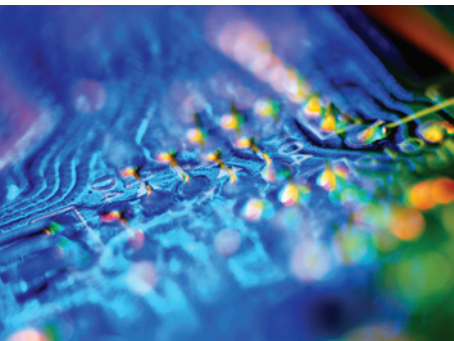
Key assets

- A high-tech, industry-oriented business environment, with a longstanding tradition of cooperation between research, industry, university and local government.
- Industrial fabric reaching all the way from component design to production, through equipment manufacturers and service providers.



Key figures in micro / nanoelectronics

- Companies: 21,800 jobs
- Public research: 3,000 jobs



Key figures in micro / nanoelectronics

- 2,800 students
- 1,200 degrees per year

➡ With more than 39,000 jobs in Grenoble-Isère, ICT is one of the largest sectors in the area, thanks to spectacular growth over the last 15 years. Grenoble-Isère is France's top centre for micro / nanoelectronics, with superior training potential and a solid industrial base. It has forged an international reputation in micro and nanotechnology, drawing on powerful, complementary skills in information technology and software. Grenoble-Isère is consequently a key European centre for innovation.

Grenoble is an ideal location to:

- Rise to new technological challenges, streamline innovation and anticipate future demand;
- Deploy major interdisciplinary projects through international organizations such as Minatec, Minalogic, etc.;
- Find multidisciplinary skills serving nanoscience and electronics.

Research

➡ Public and private research in micro and nanoelectronics brings together a total of 4,500 people in world-class laboratories and companies such as CEA-Leti, STMicroelectronics and Soitec, giving Grenoble-Isère a leadership position in France for the registration of patents in such field.

An international dimension:

- One of the world's largest centres for micro and nanoelectronics R&D.
- Numerous European programs.
- Major international research facilities (ESRF, ILL).
- International cooperation and major partnerships with Dresden's Nanotechnology competence centre, Imec in Belgium, CSEM in Switzerland, Fraunhofer Gesellschaft in Germany, VTT in Finland, IBM in the US, etc.
- In close co-operation with a major IT research cluster: PILSI (International Cluster for Smart Systems & Software)

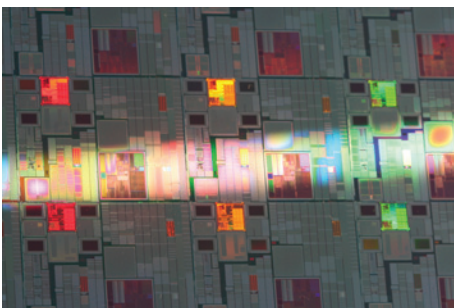
Public research: CEA-Leti, CEA-Liten, CNRS, Inria, associated university laboratories (Imep-LAHC, Simpa, Institut Néel, Spintec, TIMA, etc.), CRI-PILSI

Private research: ST and IBM within the CMOS Technology Alliance, Nanosmart Centre (Soitec), bioMérieux, Mentor Graphics, Atrenta, etc.

Higher Education

➡ Grenoble-Isère's higher education system, with a total of 65,250 students, is home to a well-known scientific university -Grenoble University- that attracts large numbers of foreign students (9,000). Local industry is actively involved in the training programs, too.

➡ Numerous international specialized Master degrees and Ph D. can be found, such as Nanotech, CSE, Fame, International semester in design & industrial engineering, Nanoscience & nanotechnology Master, MOSIG, etc.

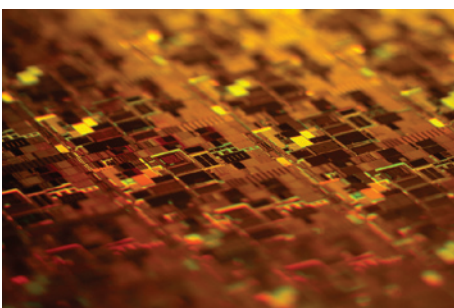


Major investments

- ➔ **Minatec:** Europe's top centre for micro and nanoelectronics innovation. 4,000 jobs, 10,000 sq m of clean room space, an investment of €1 billion over five years. Minatec is at the heart of the GIANT program.
- ➔ **ST/IBM CMOS Technology Alliance:** a new partnership starting in 2008 on 32 and 22 nm CMOS technologies.
- ➔ **Minalogic:** World-class competitiveness cluster. Close to 200 members to merge chips and software, develop smart miniaturized solutions and capitalize on technological progress in industrial sectors that can achieve a competitive advantage from such gains. €535.3 million in public subsidies invested in 155 R&D projects since 2005.
- ➔ **Nano 2012:** Between 2008 and 2012, STMicroelectronics, IBM, CEA plan to invest €3.5 billion at the STMicroelectronics fabrication and R&D unit in Crolles, outside Grenoble.
- ➔ **Nanoelectronics IRT:** €460 million invested for 10 years (half of it financed by the private sector), starting in 2011 as part of the French government's economic stimulus package, Invest in the Future (Investissements d'avenir).
- ➔ **Grenoble-Dresde partnership:** A joint force for European competitiveness. A cooperation to promote the excellence of the microelectronics industry in Europe.

Micro and Nanoelectronics Industry

➔ With 12,400 industrial jobs in micro and nanoelectronics, Grenoble-Isère is one of Europe's largest centres and among the most active worldwide. Grenoble-Isère boasts microelectronics firms working in fields that extend all the way from component design to fabrication, including all the essential equipment manufacturers and service providers.



- **Microelectronics and microsystems:** STMicroelectronics, Soitec, Sofradir, Ulis, Trixell, Thales Electron Devices, Xenocs, e2v Semiconductors, Memscap, Tronics, etc.
- **Electronic design automation:** Synopsys, Mentor Graphics, Dolphin Integration, CWS, R3Logic, Maxim, Actel, Wind River/Intel, Atrenta, Tiempo, Maya Technologies, EASII IC, etc.
- **Equipment manufacturers:** Applied Materials, LAM Research, Tokyo Electron, ASM France, ASML, Novellus, KLA-Tencor, Verigy, Teradyne, etc.
- **Clean room manufacturers and service providers:** 40-30, Air Liquide Electronics Systems, Omega Concept, Cegelec, Elyo, Entegris, Mondiaquartz, Presto Engineering, Vêpres Constructions, MW Group, etc.

Grenoble-Isère is not only a centre of excellence of global renown for micro-nanoelectronics, but it can also rely on solid, complementary skills in information technology and software.

- Key leaders in IT technologies : HP, Bull, Xerox, Oracle, CapGemini, Atos Origin, Orange Business Services, etc.

Grenoble-Isère is also well placed to address emerging sectors such as biotechnology and new energy technologies. The synergy and growing collaboration between the various fields holds the prospect of further development for Grenoble-Isère.



Grenoble-Isère: the smart move

- ➔ **Consumer market** with 9 million inhabitants within a 200 kilometre radius
- ➔ **Young, well qualified population**
 - 33% of population under 25 years
 - No. 1 in France for engineers, as a percentage of total employment
 - No. 1 in France for research
- ➔ **Higher education and research**
 - 22,800 jobs in research
 - 65,250 students
 - 4 international research institutes: ESRF, ILL, EMBL, Iram
 - 9 national research organizations: CEA, Cemagref, CEN, CNRS, CRSSA, Inra, Inria, Inserm, IRD
- ➔ **Diversified economic fabric**
 - 469,000 jobs of which 177,900 jobs in Industry & Business Services
- ➔ **International dimension**
 - 453 foreign-owned companies, representing 41,000 jobs including 122 US companies, accounting for 13,400 jobs
 - 9,000 foreign students
 - International reception facilities
- ➔ **A location of 1,212,000 inhabitants**, on a human scale, at the heart of the Rhône-Alpes region
- ➔ **Exceptional natural setting** to enjoy skiing, hiking, climbing, hang gliding, water sports, etc.
- ➔ **Diverse, cosmopolitan cultural life**

The Isère economic development agency, AEPI

AEPI provides complimentary information, introductions and services to assist companies in exploring business opportunities in the Grenoble-Isère area of France.

AEPI provides complementary services adapted to your needs:

- Information about economic environment;
- Selection of land, offices, industrial buildings for sale and for lease;
- Organization of site visits and meetings with local decision-makers;
- Technical support with financial aspects (business plan, incentives, grants, etc.);
- Introductions to the local scientific community;
- Reception of new personnel from abroad.



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