

# Grenoble Isère Report

## Faits marquants

Les entreprises grenobloises mettent leurs connaissances en réseau



## Dossier

Comment l'Isère mise sur les biotechs

## Bloc-notes

Label international pour Grenoble Ecole de management  
Un nouvel élan pour l'aéroport isérois  
Grenoble attire les congrès scientifiques

## INTERVIEW

**Françoise Charbit and Patrick Boisseau, Nanobio project leaders at CEA Grenoble**

# When Nano meets Bio

**Nanobio, the forthcoming nanobiotechnology innovation cluster, is set to make Grenoble-Isère a unique centre in Europe for the development of new miniaturized life science tools.**

### What does the Nanobio project involve?

In Grenoble we have one of the best micro and nanotechnology clusters in Europe, with unique skills in system miniaturization. In addition, we have more than 1,100 biology researchers. Much as with Minatec, for micro and nanotechnology, Nanobio sets out to connect two worlds – nano and biotechnology – and develop new tools for exploring living organisms. We aim to get researchers from a range of

disciplines – engineers, biologists, physicists, chemists and doctors and technologists – working together. This will help boost the pace of innovation and create a ratchet effect.

### How can miniaturization benefit biologists?

Thanks to microtechnology, they have new tools to explore cells and their components – biochips being the first example. The potential is huge and has yet to be exploited. We can also draw inspiration from living things to make nanosystems more efficient. And using these tools, we will be able to identify new targets for treatment faster, try out new delivery techniques, penetrating the cells directly... Integrating the two fields means this work can all be done at a lower cost.

### What returns are you hoping for?

The key challenge for Nanobio is to attract major players in pharmaceuticals, diagnostics, environmental applications and medical instrumentation to Grenoble-Isère, and to hatch startups driven by our research. Indeed Nanobio has acquired immediate European stature by building the Nano2Life network of excellence. Teams from 23 research organizations, mainly in Germany, the United Kingdom, Spain and Sweden, together with more than 20 private-sector companies, have already joined the programme, which we are coordinating.

## UPDATES

## Axane finds fuel-cell application in airships

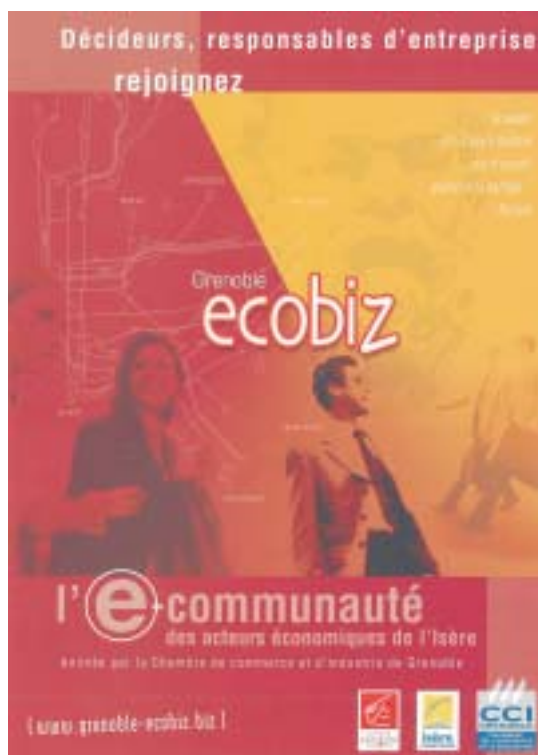
Pierre Chabert, who heads up Airstar (€4.2m in revenue in 2002-03, of which 75% in exports, 62 employees worldwide), has made a name for himself in the film industry with his lighting balloons. Now the intrepid trailblazer intends to scale new heights with his latest brainchild: a featherlight electric airship that sails at 40 to 50 kph and will ultimately be powered by a fuel cell. To realise this dream Chabert has just founded the Compagnie des Dirigeables Electriques in partnership with Axane, a recently launched subsidiary of Air Liquide, also based near Grenoble and dedicated to developing PAC fuel-cell power generators. Their common objective is to provide a machine for reaching protected or hard-to-access sites. Potential customers of course include filmmakers on shoots, but also scientists wishing to carry out botanical surveys or animal censuses.

## Nanotechnology course for engineers

Grenoble's National Polytechnical Institute (INP Grenoble), the Federal Polytechnical School of Lausanne (EPFL) and Politecnico di Torino have joined forces to set up the first European degree in nanotechnology engineering. Between 45 and 60 places will be on offer in September 2004 for students from the three universities. Teaching, for tomorrow's nanotechnology specialists, will be dispensed in French, English and Italian and range from microsystems to microelectronics design and nanotechnology. The Grenoble part of the course will be based at Minattec.

## SPOTLIGHT

# Grenoble firms and the knowledge network



In the age of globalization, the exchange of information and the ability to create local skills networks are decisive factors in business. Ecobiz, an online platform created by Grenoble's Chamber of Industry and Commerce with backing from the Isère Departmental Council and 30 local decision-makers, aims to develop a mesh of companies by using new technology. For a small membership fee firms join one of seven virtual business communities, where they can access all sorts of privileged information, expert advice, a business centre and also share best practices and experience in human resources, business startups, exporting and training. Since the scheme launched last December, more than

2,000 business people – including SME chiefs, top managers of large groups, and shopkeepers – have already joined up. The eventual target is 5,000 making Ecobiz France's biggest virtual community.

**Address:** [www.grenoble-ecobiz.biz](http://www.grenoble-ecobiz.biz)

## FOCUS

## Pomagalski primes Paradiski

Grenoble-based Pomagalski, the world's leading manufacturer of ski lifts, has just launched the biggest cable car ever. The Vanoise Express takes just three minutes to travel 1,800 metres between the ski areas of Les Arcs and La Plagne resorts, offering record-breaking capacity of 2,000 passengers each way. To build the facility, the cable-transport star rose to a major technological challenge: the cables between the two stations are not supported by a single pylon, and feature a hydraulic swing platform and dual-cable system so the two cars can

operate independently. The Isère firm, which was acquired in 2000 by Seeber of Italy, posted 2002 revenue of €189m, of which 49% in exports, with 750 employees worldwide. Since it was founded in 1936, Poma has built more than 7,500 cable transport systems in 69 countries, carrying more than a billion passengers a year.



Over the next few years  
Grenoble and Lyon aim  
to become one of Europe's top  
five centres for biotechnology.  
And the two cities have some  
serious assets in their favour.



## How Grenoble–Isère is banking on biotechnology

For many years there was a clear-cut distribution of roles between Grenoble and Lyon. One enjoyed a reputation as a major centre of physics, information technology and microelectronics. The other was well known for its biological and medical expertise. But in these days of genomics, biochips and molecular biology such differences are completely outdated. To develop new drugs pharmaceutical laboratories need, for instance, to carry out research at the European Synchrotron Radiation Facility (ESRF) in Grenoble using its X-ray beams to study the structure of proteins in microscopic samples. Experts in biology and genetics need help from information technologists to store and analyze their vast databases. As for treatment, new computerized imaging and modelling tools are giving surgeons and physicians much improved visualization capability and previously unheard of diagnostic precision. In all these fields the various disciplines overlap, prompting a completely new approach to healthcare with enormous market potential. In less than three years about 20 startups have emerged from the Grenoble-Isère incubator, some indication of the dynamic created by the encounter between IT and medicine. The challenge now is to achieve enduring growth and sales, and to drum up interest with the big names in biotechnology. bioMérieux is a good example of what can be achieved. This Lyon-based firm is one of the leading proponents of in vitro diagnosis for infectious diseases (€944m revenue in 2002, with 5,450 employees

worldwide). In 2003 it decided to invest €10m in a new facility in Grenoble manufacturing lab-on-chips, full-scale laboratories packed onto a single integrated circuit. Other firms will no doubt soon be following suit. And for good reason. Grenoble-Isère anticipated the current upsurge in interest in biotechnology to lay solid foundations. In 1990 a white paper published by AEPI, the Grenoble-Isère enterprise board, detailed the impressive life science potential of local scientific and university laboratories (CEA, Université Joseph Fourier [UJF], CNRS, etc.) and the major research facilities (ESRF, with its X-ray beams; Institut Laue Langevin, and its neutron flux reactor; the European Molecular Biology Laboratory, with its molecular and structural biology expertise; the Institute of Structural Biology [IBS]). Another study, in 1999, concluded that there were already some 5,000 jobs in biotechnology, particularly in medical instrumentation, thanks to major firms such as Becton Dickinson, Thales Tubes or Plastic Omnium Medical. Five years later the workforce has risen to 7,000, with a cross-the-board growth dynamic affecting every segment of the industry. But it is still early days. Public research (1,500 people) is being reorganized around large pluridisciplinary projects such as Canceropole Lyon Rhône-Alpes, the Partnership for Structural Biology (PSB) or Rhône-Alpes Génopole, all of which hold the promise of new discoveries. The launch of Minatec, the top European centre for micro and nanotechnology, and close on its heels

Nanobio (see interview on page 1), will help to attract new biotechnology firms, drawn by the area's miniaturization talent pool. Local authorities are ready to give new arrivals a warm welcome. Just one hour down the road from Lyon, Grenoble-Isère has set its mind on becoming a major biotechnology centre.



### Biotechnology in Grenoble–Isère

- 1,500 people in public research in biology (CEA, IBS, UJF, CNRS, Inserm, etc.)
- 5,000 students in higher education
- 7,000 jobs in industry: 2,700 in medical instrumentation (of which 1,300 at Becton Dickinson, including the global headquarters of the Pharmaceutical Systems division), 1,600 in subcontracting and services, 1,000 in pharmaceuticals and chemicals for healthcare, 900 in biology, 500 in implants and prostheses, 300 in medical computing.
- Some 20 startups in biochips, genome sequencing, cell culture, medical computing, etc.

## WIDE-ANGLE

## International accreditation for Grenoble School of Management

Grenoble School of Management has just qualified for Association to Advance Collegiate Schools of Business (AACSB) accreditation, alongside Toulouse's Graduate Business School (ESC). It thus becomes one of the few French business schools with AACSB accreditation, notably Essec, HEC and ESC Paris.

## Grenoble Airport gets new thrust

Vinci Airports and Keolis have fixed an impressive five-year traffic target for Grenoble Airport: 500,000 passengers annually compared to 200,000 at present. Isère Departmental Council has appointed the consortium to achieve growth in traffic and cater for the needs of the area stretching from Geneva to Valence, which accounts for 50% of the population of Rhône-Alpes and generates 60% of the region's outgoing trade. Now endowed with a brand-new terminal built to the latest safety standards, a runway capable of handling large aircraft and improved road access, the facility has plenty to offer airlines. Competition from the high-speed TGV train on the Grenoble-Paris line has impeded its development in recent years. The new operator will start by focusing on the Paris route, but also try to open new routes as soon as possible serving other destinations France and abroad. Grenoble Airport is the first regional airport in France to be privatized.

## Grenoble an attractive venue for scientific congress-goers

La concentration de matière grise dans les high-tech mais aussi, le somptueux écrin naturel de montagnes, font de Grenoble une destination de prédilection pour les organisateurs de congrès scientifiques. Parmi les manifestations d'envergure internationale attendues prochainement dans la capitale des Alpes : le 10<sup>e</sup> sommet international "micromachine center", du 3 au 5 mai prochain ; les experts mondiaux du SOI (silicon on insulator) se donnent rendez-vous à Grenoble pour le prochain "Migas" du 26 juin au 7 juillet ; "Esonn'04", l'université européenne des nanosciences, prendra ses quartiers du 22 août au 10 septembre 2004. Quant à la 12<sup>e</sup> conférence européenne sur l'optique intégrée, autre spécialité locale, elle a déjà pris date en avril 2005. Sans oublier les 4<sup>es</sup> rencontres internationales des micro et nanotechnologies, Minatec, attendues en septembre 2005.



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