



# The life sciences industry in Flanders



**Flanders Investment & Trade**  
Government of Flanders - Belgium

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10 reasons why Flanders is in pole position



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*Innovation is at the core of life sciences, more than in any other industry. Flanders has always proved to be a region that shows new ingenious ways of putting science to good use for the benefit of millions of people worldwide. In pharmaceuticals, in biotechnology and in all kinds of specialized supporting activities.*

*By way of illustration: Flanders only comprises 13,500 km<sup>2</sup> and houses no less than 115 companies with biotech activities, employing over 10,000 employees and generating a total turnover of close on €2.9 billion. Together they are responsible for ca. 20% of the total private R&D expenditure in Flanders. The money is well invested: 33 of these companies own 941 patents, resulting in a powerful patent position of 29 patents, on average, per company. Since 2005, 5 Flemish biotech IPO's have raised, between them, €213 million. Life sciences is a booming business in Flanders.*

*With this brochure we provide you with an inside look on why Flanders is the ultimate location in Europe for any life sciences company. We let local and overseas companies testify to their successful operations in and from the region.*

*You will hear them speak about close collaborations with the local knowledge institutes and the widely available possibilities for funding. Crucial factors like these have conducted to turn Flanders into a flourishing life sciences cluster in which a wide range of SMEs and international corporations are active. They find themselves well surrounded by organizations that uphold their interests and by a flexible government with a listening ear and wide-open eyes on the future.*

*If you have any questions, want to know more or would like to get in touch with one of the organizations featured here, please do not hesitate to contact us. Flanders Investment & Trade is always glad to help.*

# The life sciences industry in Flanders

## 10 reasons why Flanders is in pole position

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#### Flanders' Life Sciences strenghts in a nutshell

# Flanders' Life Sciences strengths in a nutshell

**“The climate in Flanders is very positive for the life sciences sector. The policies of the government here are open and proactive and its leaders listen to the needs of the companies in the sector.”**

*Patrik De Haes, CEO, ThromboGenics*

*“Flanders is the world’s most significant cluster in the area of agricultural biotechnology. There are almost no corporate failures to report among fledgling Flemish life sciences companies. The percentage of successful start-ups is very high.”*

*Johan Cardoen, CEO, CropDesign*

*“A lot of international food groups have a strong presence in Flanders. The region is also at the European top as far as the chemical industry is concerned. In the collaboration between these industries, based on the widely present expertise in biotech here, lies a huge potential.”*

*Frans Van Londersele, Plant Manager, Genencor Bruges*

*“Because of the large concentration of cutting-edge pharmaceutical companies here, we can easily find qualified personnel. The high quality of life in Flanders also makes it an attractive region for expats.”*

*Kris Motmans, Corporate Communications Manager, Tigenix*

**“An approval for Phase I trials can be reached in Flanders in a mere two weeks. This is a major advantage compared to other countries.”**

*Robert Lins, Business Manager Benelux, SGS Life Science Services*

*“In life sciences, we focus on risk sharing. Our funding is available to both SMEs and larger companies. These can benefit from IWT’s flexible and pragmatic approach, one of our standout advantages.”*

*Dirk Veelaert, Scientific Advisor, IWT*

**“The well-conceived policy of the Flemish government has made Flanders a unique biotech region in Europe.”**

*Patrick Van Beneden, Executive Vice-President Life Sciences, Gimv*

# Advantage 1: Unrivaled expertise in plant biotechnology

*Flanders is the birthplace of plant biotechnology as we know it today. In the 80s Flemish scientists, for the first time, mapped out a gene sequence and a genome sequence of a plant. The technology to alter plants genetically is a Flemish discovery that is being used on a global scale today. The expertise that has been built up is unrivaled anywhere in the world. This is why Flanders is considered a good breeding ground for a wide range of plant-biotech companies. The region's scientific lead enhances the possible return for both local SMEs and multinationals active in a wide range of plant-biotech fields.*

## CropDesign: world-class player in agronomic traits development

CropDesign delivers agronomic biotech traits for the commercial seed markets. The Flemish firm's trait discovery and development program focuses on enhancing the grain yield of crops, such as corn and rice. Since June 2006,

CropDesign has been operating as a BASF Plant Science Company, following its acquisition by the German chemical giant.

Only ten years after its incorporation, CropDesign has grown into a world-renowned, agro-biotech company. It raised €42 million of venture capital until 2006 and was planning to go public on the stock exchange. In the same year however, BASF acquired CropDesign, for CEO Johan Cardoen the ultimate acknowledgement of CropDesign's value: "Our company was very interesting to BASF because of our unique knowledge base in the area of crop yield and our exclusive research platform, TraitMill™."

### First products by 2012

Throughout the world, the entire food sector is looking for new ways to enhance the productivity of crops. Less and less farming lands are available and many are used nowadays for the production of biofuels. In addition, grain prices are rising rapidly. On the other hand, the growing world population needs good-quality food, where crops are less infected by drought and less dependent on fertilizers.

CropDesign's trait discovery program is powered by the TraitMill™ platform – a unique platform to test the effect of genes on plant growth. Through TraitMill™, the company has discovered a range of proprietary leads for yield-enhancement,



## CropDesign factsheet

- Founded in 1998 as a spin-off from VIB (Flanders Institute for Biotechnology)
- Acquired in 2006 by BASF
- Employs about 100 people of 16 different nationalities
- Situated in a technology park among other biotech businesses in Ghent
- Collaborating with big-name companies like Monsanto, DuPont and Honda, among others



drought tolerance and improved nutrient use efficiency, and is further testing and developing those leads in rice and corn with a view to launching commercial products in these crops. Johan Cardoen: "We expect to launch a product for the enhancement of corn yields in 2012, in close cooperation with Monsanto. The results of our research on rice are also very promising."

***"The biotech cluster in Flanders increases the incubation possibilities and the local presence of talented scientists results in an area with a large amount of expertise and state-of-the-art infrastructure."***

*Johan Cardoen, CEO CropDesign.*

The TraitMill™ platform is CropDesign's show-piece, Cardoen continues: "TraitMill™ is the world's largest platform for these kinds of analyses. It investigates the influence one specific gene has on crop yields. We introduce a single candidate gene into a rice plant to examine the effect. On a daily basis, 50,000 digital pictures are taken, ready to be analyzed by our computers and top-level scientists."

## **Flanders: the ultimate biotech area**

The importance of Flanders as a biotech area is not valued properly, according to Johan Cardoen: "Flanders is the world's most significant cluster in the area of agricultural biotechnology. It's something we all should feel more proud about. There are almost no corporate failures to report among fledgling Flemish life sciences companies. The percentage of successful start-ups is very high."

A first wave of biotech companies in Flanders appeared in the 80s with Plant Genetic Systems and Innogenetics as the main examples. A second biotech wave happened ten years ago, when successful businesses like Ablynx, Devgen, Tigenix, Thrombogenics and CropDesign came on the scene.

## **Four reasons behind CropDesign's success**

Johan Cardoen distinguishes four main reasons for the success of CropDesign. The first one is the role that VIB (Flanders Institute for Biotechnology) has played in the company's story. He praises their expertise and professional attitude. The second beneficial factor was the financial aid they got from the Flemish investment company Gimv and their long-term vision. "A third success factor was the funding provided by the Institute for the Promotion of Innovation by Science and Technology (IWT)," Cardoen explains. "The fourth and last reason is the existence of the biotech cluster in Flanders. It increases the incubation possibilities and the local presence of talented scientists results in an area with a large amount of expertise and state-of-the-art infrastructure."

## Devgen: leading seed and crop technology business

The Ghent-based agro biotech firm Devgen is a global player in trait technology for crop protection and in the development, production and commercialization of new hybrid seeds resulting in higher yield. It also develops a safer and eco-friendlier nematocide, an agro-chemical protecting crops against nematodes. To illustrate the company's success, Devgen today is selling to farmers all over India new hybrid seeds resulting in higher yields despite increasing challenges with respect to the availability of water, land and labor.

Devgen has its roots at Ghent University where gene technological research is conducted into possible parallels between different types of genetic information in animals and plants. This search for applications to decipher this genetic information resulted in the spin-off company Devgen.

### Devgen fact sheet

- Founded in 1997 by Prof. Thierry Bogaert of Ghent University
- Headquartered in Ghent with regional offices in Singapore, Delaware (USA) and Hyderabad (India)
- A total workforce of more than 200 people
- Listed on Eurolist by Euronext Brussels since June 2005

### Crucial funding from Flanders

Two Flemish organizations were vital to the initial growth of the company: Flanders' major private equity and venture capital provider Gimv and the Institute for the Promotion of Innovation by Science and Technology (IWT). "Both organizations provided us with the necessary funding and expertise," recalls Devgen's CEO Thierry Bogaert. "From Gimv and its biotech fund we obtained the necessary funding to create a solid financial base for our basic research. And, over the years, we could count on ca. €10 million of funding from IWT, essential for the high-risk research that we would otherwise be unable to perform. They have proven to be flexible organizations with a long-term view and the ability to think along with our projects."

### Strategic alliance with Monsanto

With the help of these major partners, Devgen further expanded its technology with a sharp focus on the agro industry. In 2007, Devgen and American agricultural biotech company Monsanto entered into a five-year research and technology agreement, thereby giving Monsanto access to Devgen's RNAi crop protection technology for various applications in corn, cotton, soy and vegetables. Through the same agreement, Devgen has now access to Monsanto technology for application in its crops of interest.

### From technology to 3 kg bags of seeds

For other crops, such as rice, pearl millet, sorghum and sunflower, Devgen has built up its own hybrid seed business with a focus on the Asian market. The company owns the complete chain, from R&D to selling 3 kg bags of seeds to farmers. "We have set up our own subsidiaries



to market our technology in countries such as India, the Philippines and soon in Indonesia too," Bogaert continues. "Flanders is the technological dynamo and engine for our business and the place from where we coordinate our global operations."

***"We have set up our own subsidiaries to market our technology in countries worldwide. Flanders is the technological dynamo and engine for our business and the place from where we coordinate our global operations."***

*Thierry Bogaert, CEO, Devgen*

Devgen offers crop protection against a broad range of pests. It has developed a hi-tech seed plant breeding technology to market hybrid and transgenic seeds. And it has come up with a chemical solution to fight nematodes (microscopic worms that damage the roots of crops). Devgen's nematocide, applicable to a broad group of high value specialized crops such as tomatoes, carrots, cucumber, melons, and other key industrial crops is estimated to be launched in 2010.

"We are proud to be one of the few independent biotech companies that has successfully developed its own market niche in an industry with a high consolidation level," Bogaert concludes. "The seed business in India and other target markets is growing rapidly and we are further developing our technology here in Flanders to underpin that growth. Worldwide, Devgen enjoys an outstanding reputation for excellence with major industrial players. Successful R&D collaborations, like the one with the Japanese chemical concern Sumitomo, are proof of this."



## **Emeritus Professor Marc Van Montagu: founder of today's plant biotechnology**

Flanders is truly the birthplace of plant biotechnology as we know it today. At the roots of our outstanding reputation in this field, lies the scientific research of Emeritus Professor Marc van Montagu, a former researcher at Ghent University.

Together with his colleague Prof. Jeff Schell, Marc Van Montagu discovered the gene transfer mechanism between *Agrobacterium* and plants. This led to the development of methods to alter *Agrobacterium* into an efficient delivery system for gene engineering and to create transgenic plants.

He developed plant molecular genetics, in particular molecular mechanisms for cell proliferation and differentiation and response to abiotic stresses (high light situations, ozone, cold, salt and drought) and constructed transgenic crops (tobacco, rape seed and corn) resistant to insect pests and tolerant of novel herbicides.

Prof. Van Montagu has more than 1,000 scientific publications to his name in international and national journals and books and holds six honorary doctoral degrees. He has received numerous awards for his pioneering work, including the coveted Japan Prize.

### **Want to...?**

*... benefit from Flanders' unrivaled expertise in plant biotechnology?*

*If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11*

*or email us at [invest@flanders.be](mailto:invest@flanders.be)*



## Advantage 2: A global market leader in pharmaceutical production and R&D

*Flanders is a world-class player in human healthcare. The region is ahead of the game when it comes to the production of pharmaceuticals: over 5 per cent of the global output of pharmaceuticals is made in Flanders. Big names in the worldwide pharmaceutical industry have a range of facilities in the region. But Flanders offers much more than this. A wide range of promising biopharma companies, spun off from Flemish universities or from subsidiaries of international concerns, find Flanders an ideal environment in which to foster sustainable growth.*

### Tigenix' Flemish base offers further advantages

"Because of the large concentration of cutting-edge pharmaceutical companies here, we can easily find qualified personnel," says Kris Motmans. "The high quality of life in Flanders also makes it an attractive region for expats." "For a company such as Tigenix, which is still completely dependent on outside capital, the subsidy programs of the Institute for the Promotion of Innovation by Science and Technology (IWT) provide a welcome source of revenue. The tax breaks for IP earnings – limiting the tax rate to 6.7% – are another major plus."

### Tigenix: groundbreaking cell therapy

The Leuven-based biotech company Tigenix develops groundbreaking cell therapy applications in the field of regenerative medicine. Its focus is on the repair of cartilage defects in the knee joint. Tigenix is researching cell-based therapeutics that could delay or prevent the onset of arthritis and offer a long-term cure. In our ageing society there is increasing demand for treatments such as these.

The company is a prime example of the growing synergy between the academic and business world in the field of biochemistry in Flanders. Tigenix has a strong link with the universities of Ghent and Leuven, generating the fertile soil needed for revolutionary research.



## ChondroCelect: impressive breakthrough

Tigenix hopes to obtain approval to sell ChondroCelect in the EU from EMEA, the European health authority, in the first half of 2009. It is also Tigenix' intention to submit the dossier in the second half of 2009 to the Food and Drug Administration (FDA) for approval in the USA. Kris Motmans, in charge of communications at Tigenix, explains that "ChondroCelect is based on the Autologous Chondrocyte Implantation (ACI) technology. A biopsy is done to remove articular cartilage cells from the patient's knee joint. These are then placed in a culture where they replicate. The new cells are reimplanted in the patient, where they develop into cartilage cells and repair the tissue." With conventional ACI treatments there is no guarantee, however, that the cartilage will revert to its original state. When cartilage cells are placed in a culture, they lose their phenotypic properties after a few divisions. This means that they will not necessarily keep their characteristics as cartilage cells.

Tigenix has made an impressive breakthrough in this area. "Using advanced research methods (Marker analysis), we were able to establish a

quality score for 'good' cartilage cells," explains Kris Motmans. "There is a high correlation between a positive quality score and the ability of the cultured cells to form stable cartilage in vitro. Patient data, collected three years after treatment, proves that ChondroCelect is better suited to repairing cartilage injuries than microfracture, which is the current standard treatment."

## Evidence-based medicine an advantage

Kris Motmans explains that the strong results are partially due to Tigenix's focus on 'evidence-based medicine'. "Even before European legislation imposed advanced quality control and clinical studies for cell therapy, similar to those for traditional medications, Tigenix had already chosen to go this road. ChondroCelect is the first and so far only cartilage repair product for which Phase III studies have been successfully completed." With EMEA now requiring clinical studies from the competition, this means that Tigenix has a significant lead. Tigenix is now ready to expand its product pipeline. Using the same evidence-based philosophy, it is planning to develop a treatment for meniscus defects, among others.



### Tigenix fact sheet

- Founded in 2000 as a spin-off from the universities of Leuven (K.U.Leuven) and Ghent (UGent)
- Employs ca. 80 people
- Headquarters in Leuven and production in Leuven and Memphis (USA)
- Investment of ca. €8 million in R&D in 2007
- IPO in 2007, listing its shares on the Euronext Brussels stock exchange

## ThromboGenics: an emerging force in eye and vascular medicine

Established in the 80s, ThromboGenics focuses on the development of therapeutics for conditions related to the vascular system. It has developed a strong pipeline of promising drug candidates for the treatment of visual disorders, cardiovascular diseases and cancer. With Microplasmin, its lead product, ThromboGenics is hoping to develop a non-surgical treatment of a visual disorder called focal vitreomacular adhesion.

ThromboGenics could count on the widely present academic expertise in Flanders to develop its cure. "In Flanders, there is a strong link between the scientific and industrial world. Next to our in-house expertise, we also rely on solid collaborations with research institutions and universities to map out certain targets for us," explains CEO Patrik De Haes.

### Microplasmin: high potential

Focal vitreomacular adhesion is a condition in which the vitreous gel in the center of the eye has an abnormally strong adhesion to the retina at the back of the eye. These adhesions can cause vessel and retinal distortion, resulting in deterioration of the patient's vision. This condition now requires major eye surgery, a risky and costly (up to 10,000) intervention that is carried out no less than 600,000 times a year. With Microplasmin, which is also used in the treatment of stroke, ThromboGenics is aiming for a simple one-off procedure that would eliminate one in three of the conventional interventions.

### A milestone: in-house clinical trials

ThromboGenics generally shows proof-of-concept for its products by taking them through to completion of Phase II clinical trials, and then licenses the products to its pharmaceutical partners. However, ThromboGenics recently started its own Phase III clinical trials for Microplasmin. "Undertaking Phase III clinical trials is a major milestone in ThromboGenics' corporate development," says Patrik De Haes.

## Flanders offers pretty picture for the life sciences

According to Patrik De Haes, "ThromboGenics is a company with a very international perspective, but it has never considered shifting its focus away from Flanders. The climate here is very positive for the life sciences sector in general. First of all, the policies of the government are open and proactive and its leaders listen to the needs of the companies in the sector. Secondly, institutions such as VIB (Flanders Institute for Biotechnology) which fuels collaboration between the government, the academic world and industry, and FlandersBio, which lobbies and networks on the sector's behalf, create considerable added value. There is a very productive interaction with the academic world possible here, not to mention that it provides us with a source of highly educated talent." Patrik De Haes is also enthusiastic about the tax advantages for IP (tax rate limited to 6.7%) and the subsidies from the Institute for the Promotion of Innovation by Science and Technology (IWT). "Add the relatively low cost of real estate to this and you get a very pretty picture," he concludes with conviction.



## ThromboGenics fact sheet

- Employs around 50 people
- Spin-off from the University of Leuven (K.U.Leuven)
- Market capitalization of over €200 million
- Headquarters in Leuven and subsidiaries in New York (USA) and Dublin (Ireland)



"It is unique for a relatively small company such as ours to run these trials. They are expected to be finished by the end of 2010."

Other very promising products in the pipeline are drugs based on antibodies such as TB 402 (Anti-factor VIII, a blood thinner for the prevention of thrombosis) and TB 403 (anti-PlGF, which counters the growth of tumors by preventing the formation of new blood vessels). It is ThromboGenics' long-term ambition to develop a commercial organization large enough to market Microplasmin for its first indication.

## Pfizer: has its second largest production site in Flanders

The Flemish town of Puurs is home to Pfizer's largest European production and packaging facility. It is the second largest production site of Pfizer worldwide. Using the most advanced technology, over 200 million units of sterile, mostly injectable therapeutics, are produced and packaged annually in bottles, ampoules and syringes. Over 1,400 people are employed at the site. Over 96% of the production has a destination outside Flanders, to 170 countries worldwide.

## Janssen Pharmaceutica: the single biggest investor in R&D in Flanders

The Flemish company Janssen Pharmaceutica was established by Dr. Paul Janssen (1926-2003). Today, it is a worldwide company and a major part of the third largest pharmaceutical company in the world, Johnson & Johnson. The site in the Flemish town of Beerse is, within the Johnson & Johnson group, the largest for pharmaceutical R&D.

Four Janssen drugs – Haldol, Ergamisol, Daktarin and Vermox are included in the World Health Organization's most recent Model List of Essential Drugs, of which there are presently about 300.

For several decades now Janssen Pharmaceutica has been the single biggest investor in R&D in Flanders. In 2008 the company turned over €1,787 million and ploughed back €1,137 million into R&D in Flanders.

## Dr. Paul Janssen: the most successful researcher into new medicines of the 20th century

For hundreds of millions of patients, the drugs & medicines that Dr. Paul Janssen and his teams discovered continue to make the difference between life and death, pain and comfort, disease and health. He is generally recognized as one of the most successful investigators into new medicines of the twentieth century. Together with his teams of research scientists, he developed numerous innovative medicines effective in an extensive range of diseases and disease-related areas, among them pain control, psychiatry, gastroenterology and various infectious diseases in humans, animals and plants.

In the course of his life, he received many prestigious honors from institutions of learning around the world, including 22 honorary doctorates and 5 honorary professorships, for his groundbreaking work in the discovery and development of new medicines.

## A random selection of other successful human healthcare companies in Flanders

- ActoGenix
- Alcon
- AstraZeneca
- Barrier Therapeutics
- Diatos
- Genzyme Flanders
- Innogenetics
- Movetis
- Schering-Plough
- Tibotec
- TorreyPines Therapeutics

## Galapagos: major breakthroughs in drug discovery and development

The neurodegenerative disease Alzheimer's affects 28 million people worldwide. Up till now, no cure has been found to this terminal disease which elderly people are suffering in ever greater numbers. The Dutch-Flemish biotech firm Galapagos has been making great strides to cure Alzheimer's. The drug discovery and development company runs small molecule programs in bone and joint diseases, bone metastasis, cachexia,

## Galapagos factsheet

- Established in 1999 as a joint venture between the Dutch firm Crucell and the Flemish biotech company Tibotec
- Global headquarters in the Flemish city of Mechelen
- Has entered into strategic alliances with GSK (osteoarthritis), Janssen Pharmaceutica (rheumatoid arthritis), Eli Lilly (osteoporosis), Merck (diabetes and obesity) and MorphoSys (for an antibody in bone and joint diseases)
- Employs 470 people operating in facilities spread over 6 countries
- Listed on the Euronext Brussels and Euronext Amsterdam stock exchanges and on the U.S. OTC market

anti-infectives and metabolic diseases. In bone and joint diseases Galapagos has one of the largest drug discovery programs in the world.

Galapagos has entered into long-term alliances for most of its research programs with top-ten pharmaceutical companies. These risk sharing alliances enable it to build a pipeline of drugs in its disease areas, based on the proprietary targets that it has identified.

### Breakthrough in Alzheimer's research

In February 2009, Galapagos announced the discovery of a human drug target, called GPR3, that plays a key role in Alzheimer's disease. This breakthrough was published in Science, one of the world's most prestigious scientific journals. The data presented in Science is a result of the collaboration between Galapagos and the academic group of Professor Bart De Strooper at VIB (Flanders Institute for Biotechnology) and the Flemish university K.U.Leuven. The U.S. Patent Office has granted Galapagos a patent on this discovery.

### Crucial funding from Flanders

Galapagos identified novel targets, such as GPR3, in Alzheimer's disease using its proprietary adenoviral-based discovery platform. This work was supported by a €1.4 million grant from the Institute for the Promotion of Innovation by Science and Technology (IWT).

In February 2009 the company was awarded another €837,000 grant from IWT. Galapagos will elucidate the structure of novel drug targets and related small molecules in its bone and joint disease portfolio. The two-year project focuses on Galapagos' novel drug targets and the candidate drugs that bind to these targets. The company will collaborate on this project with the renowned Structural Biology Brussels group at VIB (Flanders Institute for Biotechnology).

### Interested...?

*... to learn more about Flanders' world-leading position in the production and R&D of pharmaceuticals? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at [invest@flanders.be](mailto:invest@flanders.be)*

## Advantage 3: Industrial expertise and pioneering power in industrial biotechnology

*In addition to being a unique life sciences cluster, Flanders is home to Europe's largest chemicals cluster and to a large number of international food concerns. Together with a modern transport infrastructure these form the ideal surroundings for companies active in industrial biotech. Several leading players focus on converting renewable raw materials, intermediary products and process tools with the aid of biological systems. In addition, Flanders also has some unique pioneering projects in its portfolio that are fast propelling industrial biotech activities in the region to a place in the European elite.*

### Genencor: world-leading enzyme producer in Flanders

What started out as a local distillery in the historic city of Bruges in 1880, has evolved into a Genencor benchmark production facility for industrial enzymes. With close on 1,500 employees and worldwide operations, Genencor is the world's second largest industrial biotech organization, pioneering in enzyme innovation and a leading force in industrial biotechnology. Its products and solutions are sold across a broad range of industries, from textiles to biofuels, and from laundry detergents to animal nutrition. Since 2005, Genencor has been part of the Danish company Danisco, one of the major global producers of ingredients for food and other consumer products.

The Genencor site in Bruges turns out 20 different enzymes, the largest number of enzymes by any plant in the Genencor group worldwide. The lion's share thereof is destined for food and animal feed. Other parts of the output go, among other things, to the starch processing industry, applications in the textile industry and to the production of detergents and bioethanol. This makes Genencor in Bruges one of the most versatile and flexible manufacturing operations in the overall organization.

#### Excelling in process optimization

Genencor dedicates around 13 per cent of its revenue to R&D, which is a high level for a non-pharmaceutical company. Research is done in other facilities but, in Flanders, crucial process development and testing takes place at the unit



in Bruges. A small team of development engineers makes a valuable contribution to the plant's efficiency. "They excel at their job of continually optimizing our processes and they transfer their knowledge to other plants within the Genencor group," says Plant Manager Frans Van Londersele. "Here in Flanders, engineers receive a broad academic training. They think beyond their specific field of fermentation technology and are driven to realize innovations that

***"Within the Genencor group, we have been recognized as a benchmark plant for our cost-efficiency and our process optimization."***

*Frans Van Londersele, Plant Manager, Genencor Bruges*

are then shared with other plants in the group. The fact that almost our entire staff speaks English facilitates the efficiency of this knowledge transfer."

Genencor Bruges excels in handling the extremely complex internal logistic process that is inherent to a multipurpose plant. "Our facility played a key role in implementing a highly advanced planning ERP system," Frans Van Londersele adds. "New challenges are tackled head-on at our plant. Within the Genencor group, we have been recognized as a benchmark plant for our cost-efficiency and our process optimization."



### **Well surrounded by the right industries**

Besides the right people, Flanders provides Genencor with the ideal industrial surroundings for its sustained success. "Technology, raw materials, know-how and logistic support for operations, all this can be found close by in the heart of Europe. This makes for cost-effective transport," Van Londersele continues. "We deliver our enzymes all over Europe and to certain parts of Africa and the Middle East. This strategic location, close to our target markets and to the suppliers of our raw materials, is an extra advantage we get by running our operations from Flanders."

Van Londersele sees great potential for industrial biotech in Flanders. "A lot of international food groups have a strong presence in our region," he concludes. "Their stream of waste products is a huge source of base materials for the biotech industry. Flanders is also a European top region as far as the chemical industry is concerned. In the collaboration between these industries, based on the widely present expertise in biotech here, lies a huge potential for the further development of industrial biotech in Flanders. Bio-catalysis - where new catalysts and new processes are developed through tight integration of chemistry, process technology and biotech - is a fine example of this."

## Bioethanol production at the heart of Europe

The first company to make bioethanol in Flanders is the French-owned leading sugar group Tereos – through its subsidiary Syral. Following permission by the Federal government to annually produce 32,000m<sup>3</sup>, the Syral wheat processing plant in the town of Aalst has now invested €20 million in a new unit dedicated to bioethanol production.

With an annual production of 1.5 million m<sup>3</sup>, Tereos is the European leader and the global number five when it comes to bioethanol production. At its Syral plant in Aalst, wheat is processed into flour and subsequently into starch and pro-

teins for the food industry and into fibers for the paper industry. “The resultant starch-containing by-products are the base products for our bioethanol operation,” says Ortwin Callewaert, Plant Manager of the Syral site in Aalst. “Our new processing unit yields a significant improvement in adding value to these by-products.”

### Expertise in process technology

If a bioethanol producer wants to be successful, it needs the right yeasts and the right enzyme preparations. Syral does not develop these itself but draws on the expertise of pure biotech companies to do this. “We focus on optimizing production at the process level,” Callewaert explains. “We have our in-house specialists to do this. Here, in Aalst, we have close on 140 years of grain processing experience. Thanks to this, we stay on top of the technological development when setting up these production lines.”

Today, first-generation biofuels based on grains are being produced worldwide. Production processes are being optimized and the market is developing rapidly. For the second-generation bioethanol, specific crops will be cultivated. “It is crucial that we lay a solid foundation for the further development of bioethanol,” he continues. “Demand is growing and the industry is developing fast. Flanders is doing an excellent job at building up the necessary expertise, both in R&D and in production processes.”

The production of bioethanol is a highly-automated process and therefore requires highly skilled people to operate the production lines.

## Ghent Bio-Energy Valley: developing the bio-based economy of the future

Ghent Bio-Energy Valley is a joint initiative of Ghent University, the city of Ghent, the Port of Ghent, the East-Flanders Development Agency and a number of industrial companies based in the Ghent region that are active in the fields of bio-energy generation, distribution, storage and use.

Private partners in Ghent Bio-Energy Valley:

- Biochemical producer Genencor
- Biofuel producers Alco-Bio Fuel, Oleon Biodiesel and BIORO
- Energy suppliers Electrabel and SPE
- Storage and transport specialists, such as Oiltanking, Sea-Invest, AXTOLL and Lalemant
- Engineering and construction companies like Fabricom, BnS Engineering and Geodetics Construction Maintenance (GCM)
- Food group Cargill
- Waste treatment specialist Organic Waste Systems
- Consultancy firm Ernst & Young
- Venture capital firm Capricorn Venture Partners

The partnership promotes the development of a bio-based economy through collaborative programs, joint initiatives and synergy creation between the project partners in the fields of Research & Development, structural measures and policy, logistics and communication towards the general public.



"Flanders stands out, compared to other European countries, as far as the skills of blue-collar workers are concerned," says Callewaert. "On top of that, they are multilingual, which is a valuable asset for an international company."

***"Flanders' central location in Europe plays a major role in the long-lasting success of the Aalst-based plant. We are simultaneously located close to Europe's industrial centers and to the large agriculture areas."***

*Ortwin Callewaert, Plant Manager, Syral Aalst*

### **Central location in Europe is crucial to the logistics**

The bulk of the output at Aalst is destined for the production of ethyl tertio-butyl ether, better known as ETBE, which is an additive in the production of gasoline. "Our main customer is the Total-Petrofina refinery in the port of Antwerp," Callewaert explains. "We ship out bioethanol on barges via the river Dender here at the plant. Flanders' highly developed inland waterway network perfectly lends itself for this kind of eco-friendly transport."

The central location in Europe plays a major role in the enduring success of the Aalst-based plant. "We are simultaneously located close to Europe's industrial centers and to the large agriculture areas," Callewaert concludes. "Flanders can boast four reputed international seaports and a high-density network of excellent road, railroad and inland waterways for transportation from and to the European hinterland. This means the supply of base materials and the delivery of our bioethanol is both cost-effective and just in time."

### **Want to...?**

*... benefit from Flanders' industrial experience and pioneering work in industrial biotech? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you.*

*Call us on +32 2 504 87 11 or email us at*

**[invest@flanders.be](mailto:invest@flanders.be)**



## **Bio Base Europe: Europe's first open innovation and education center for the bio-based economy**

Flanders and its neighbor, the Netherlands, have joined forces to build state-of-the-art research and training facilities for bio-based activities. The goal? To speed up the development of a sustainable bio-based economy in Europe. Both governments have allocated, between them, a total of €21 million to this unique project.

Bio Base Europe is the result of a strategic alliance between Ghent Bio-Energy Valley (Ghent port area, Flanders) and Biopark Terneuzen (Terneuzen port area, the Netherlands). With a combined production of 1.2 million tonnes of bio-fuels per year, the 'Ports Group of Ghent and Terneuzen' is already market leader in Europe. The new project is set to transform the region into the main bio-economy gateway in Europe.

### **Pilot Plant and Training Center**

The Bio Base Europe Pilot Plant will focus on second generation technologies to convert agricultural waste products and non-food crops, such as wheat straw, corn cobs, wood chips, jathropa and algae oil into bio-fuels; bio-plastics and other bio-products. The facility will be located near Ghent and is expected to be operational by 2010.

Bio Base Europe's state-of-the-art Training Center will address an industry-wide shortage of skilled process operators and technical maintenance specialists, especially for the bio-based economy. It will feature training facilities for bio-based activities and operate according to an open education model, providing standard as well as company-specific training and education. The center will be located close to Terneuzen. The projected opening date is in 2011.

## Advantage 4: All the innovative suppliers and support services close by

*The flourishing life sciences industry in Flanders has resulted in a rich landscape of innovative suppliers and support services. These experienced players specialize in a wide range of services. From services for clinical testing over state-of-the-art product development and lab equipment suppliers to life sciences patent bureaus and specialized logistics players. Together they form an indispensable link in the sustainable success of the life sciences industry in the region.*

### SGS: performing clinical trials in Flanders

Headquartered in Geneva, Switzerland, SGS is the world's leading inspection, verification, testing and certification company. SGS employs ca. 55,000 people and operates a network of more than 1,000 offices and laboratories around the world. As far as life sciences is concerned, SGS has a global staff of 1,300. In Flanders, around 300 people contribute to the success of SGS as a contract research organization (CRO) in the product development process of a wide range of local and international pharmaceutical, biotech and medical device companies.

*The hospital testing infrastructure in Flanders is excellent and the trial publications are of high quality. It is a top trial region for us in western Europe."*

*Robert Lins, Business Manager Benelux, Life Science Servicesr*

SGS' clinical trials services assists these companies in creating their product development plan and in the execution of the different research phases; from the early development stages until the commercialization of the finished product. The testing activities help improve efficiency, reduce costs and ensure the safety of pharmaceutical products. "Flanders is an ideal region for this kind of activity," says Robert Lins, Business Manager Benelux at Life Science Services.

### Fast approval for Phase I trials

SGS performs its Phase I research mainly at two Antwerp-based hospitals, the Stuyvenberg Hospital and the University hospital. SGS' further trials, Phases II through IV, and some phase I trials take place in Flanders and in coun-

tries the world over. "An approval for Phase I trials can be reached here in a mere two weeks," says Lins. "This is a major advantage compared to other countries. The federal government here has also made great efforts to draw up - very early in 2007 - a Belgian guidance document for early exploratory trials. Not only do we benefit from the short approval time span, we also reap the fruits of the excellent collaboration that exists between the government and the phase I trial centers active in the region, which are united in the Belgian Association of Phase I Units (BAPU)."

The city of Mechelen is SGS' operations base for all organizational aspects of the clinical trials. From project management and data management through to pharmacovigilance and regulatory aspects with local and national authorities and regulatory bodies, such as the American Food & Drug Administration (FDA) and the European Medicines Agency (EMA).

### And other major advantages in Flanders

Flanders has a high number of clinical trials per capita. "Although the region has a relatively small population, the recruitment of high-quality trial subjects runs smoothly," Lins continued. "In addition, the hospital testing infrastructure is excellent and the trial publications are of high quality. It is a top trial region for us in western Europe."

One of the major strengths of SGS is its enormous flexibility. "We have grown out of a number of small enterprises," Lins explains. "This has always given us the advantage of dealing flexibly with our customers. This flexibility is also reflected in the many SMEs Flanders' business landscape is composed of. Another key benefit of this high-density life sciences region."

## Verhaert Masters in Innovation: bringing life sciences companies state-of-the art innovation

Where do organizations find new ways to create added value for their customers? From automotive and aerospace over chemical and materials to ICT, healthcare and pharmaceutical? Well, they can count on a wide range of innovative products and services designed by

*“In Flanders we can find the right highly-skilled people to staff our operations in life sciences. In addition, the hospitals in the Flemish region are the perfect partners to set up research programs with.”*

*Frederik Wouters, Sales Coordinator, Verhaert Masters in Innovation*

the Flemish firm Verhaert, Masters in Innovation. Established in 1969 in Antwerp, the globally operating company, has developed more than 500 products.

When existing products fail to deliver added value in the market and need improving, Verhaert is there to provide innovative services. Through state-of-the-art technical problem-solving, which results in patents for its customers. But also by inventing new technical and user experience features and through improved product design, which makes for a more diversified and unique product on the market.

### Knowledge is key

As far as healthcare is concerned, Verhaert has invested heavily in technology and can draw upon its in-house expertise. “We perform development for a wide range of local and international customers in life sciences, such as Philips Medical Systems, Baxter, Pfizer and Schering-Plough. Others we offer our expertise in their particular field of application to enhance existing products,” says Frederik Wouters, Sales

Coordinator at Verhaert. “Enhancing the imaging capacity of confocal microscopes and optimizing blood pressure monitors, are just a few examples. But also paramedical applications for the elderly, such as fall detection and tracking & tracing systems.”

Verhaert works closely with centers of knowledge from around the world, but mostly with those from Flanders. Wouters explains: “The Flemish universities and colleges of higher education provide us with the right scientific expertise to add to ours. For example, in collaboration with the University of Antwerp we developed a mobile device that allows lab staff to control the temperature in cell cultures. In this way the cell cultures can grow under the same optimal conditions as their natural habitat. Together with Ghent University, we invented a revalidation device that helps patients with their exercises when recovering from a shoulder fracture. Starting from a medical protocol we turned it into a highly-efficient device that can be taken home from the physiotherapist to work with.” Up till now, Verhaert’s innovations have led to in excess of 140 patents with its customers.



## Flanders is an excellent base for activities in life sciences

Verhaert is perfectly happy to operate internationally from Flanders. "We can easily reach our customer bases in Germany, the Netherlands, France and the UK. But also those further away, like in Russia," says Wouters. Verhaert is strongly anchored in the region. Through training programs at a number of universities and colleges of higher education Verhaert returns its acquired knowledge to the community. "And in Flanders we can find the right highly-skilled people to staff our operations in life sciences," Wouters adds. "In addition, the hospitals in the Flemish region are the perfect partners to set up research programs with."

## A random selection of other suppliers and supporting businesses to the life sciences industry in Flanders:

- Agfa Healthcare
- Barco
- Becton Dickinson
- Cochlear
- Collette
- Creax
- Cyberonics
- LabCorp
- Msource Medical Development
- Tubes Souples
- Van Looy Groep
- Xeleos Consulting

## Ranbaxy: optimizing European logistics operations from Flanders

Ranbaxy is India's largest pharmaceutical company. In 2008 it generated a global turnover of more than €1.138 billion. In the concern's ambitious growth strategy, Flanders plays a key role: in 2007 Ranbaxy chose Antwerp to locate a European distribution center for pharmaceutical products. Today, between 100-150 tonnes of pharmaceutical products per month are being processed and distributed out of Antwerp to wholesalers and distribution points around Europe.

Neeraj Sharma, General Manager, Ranbaxy Belgium: "With its recent expansion into Europe, Ranbaxy's activities had grown organically across several European countries. To obtain more synergy in terms of freight and to have a better volume rebate, we decided to centralize our logistics operations. For the location of our new Combined Import, Processing & Distribution Center, Ranbaxy opted for Flanders and the Port of Antwerp. The reason? Its unrivaled facilities and prime geographic location."

### Like to...?

*... know more about how Flanders' dense network of innovative suppliers and support services can be an asset to your business? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at [invest@flanders.be](mailto:invest@flanders.be)*

## Advantage 5: World-renowned research institutions VIB and IMEC

*A region does not obtain a leading position in the life sciences without trailblazing research institutes to foster innovative solutions that improve the quality of life for millions of people. With VIB (Flanders Institute for Biotechnology), a unique biotech research platform in Europe, Flanders is sure to remain ahead of the pack for many years to come. And that goes for IMEC as well, Flanders' globally renowned research center on nanoelectronics and nanotechnology. Top scientists, international collaboration programs with major international concerns and many successful spin-offs ... VIB and IMEC are truly key drivers of the life sciences industry here in Flanders.*

### VIB: European leader in scientific research and technology transfer

Excellence in scientific research in biotechnology has been a constant in Flanders since the 80s. Leading scientists at Flemish universities were responsible for some groundbreaking research. To further sustain this research excellence and to increase the conversion rate of research into tangible products, VIB was created in 1996. Today, the institute has established ten novel organizations, including five successful venture capital-backed biotech companies, and enjoys the reputation of being one of the most prominent biotech research centers in Europe.

VIB is an independent research institute which unites life sciences departments from the main Flemish universities UGent (Ghent), K.U.Leuven (Leuven), University of Antwerp and Vrije Universiteit Brussel (Brussels). It has three overall objectives:

- perform groundbreaking research in biology and pathobiology,
- optimally convert research results into commercial activities (technology transfer),
- and communicate with society on a number of biotech-related subjects.

To achieve these goals, the institute has an annual budget of €75 million at its disposal, half of which is granted by the Flemish government.

#### Groundbreaking research in human healthcare and plants

VIB has 65 research groups under its wings, organized into 13 departments. These conduct strategic basic research in the fields of life sciences: molecular biology, cell biology, developmental biology, structural biology, systems biology, genetics, biochemistry, micro-



### Anti-cancer gene discovered by VIB offers exciting, new perspective for therapy

Starting with the tiny fruit fly, and then moving into mice and human patients, researchers at VIB affiliated to the Center for Human Genetics (K.U.Leuven) showed, in early 2009, that the same atonal gene suppresses cancer in all three.

Reciprocally, switching off the gene leads to cancer. The scientists think there is a good chance that the gene can be switched on again with a drug. They reported their findings in the reputed scientific journal PLoS Biology.



biology, genomics, transcriptomics and proteomics. They can boast over a decade of globally recognized inventions. "Recently, we have made major breakthroughs in the fields of cancer, immunology and inflammation, neurobiology and neurogenetics, angiogenesis and cardiovascular disease, plant biology and plant systems biology," says Rudy Dekeyser, managing director at VIB. "These results conduce to gaining basic insights in fundamental processes involved in growth and development, health and disease, life and death."

VIB also explores new technologies such as proteomics, the large-scale study of proteins. The VIB Proteomics Expertise Center (PEC) performs proteome analysis using a unique procedure. This relies, in contrast to traditional proteomic methods, on the chromatographic properties of proteome-derived peptide mixtures. Out of this technology was born Pronota, currently a leading proteomics company.

## Successful technology transfer

It is crucial that the academic research results in new applications that will benefit today's and tomorrow's society. VIB concludes agreements with firms willing to develop and commercialize its inventions. Rudy Dekeyser illustrates this successful tech transfer strategy: "In 2007 a team led by Emeritus Professor Walter Fiers, and drawn from Ghent University and VIB, developed a vaccine candidate which offers protection against all the classic influenza strains. At the beginning of 2008, British-American biotech firm Acambis successfully concluded a Phase I clinical trial of this candidate vaccine. With just one shot, the vaccine has the potential to offer multi-year protection against all classic mutations of type-A influenza."

VIB, so far, has concluded over 500 R&D and licensing agreements. 50 per cent of these are with companies based in Flanders, a quarter in

## Rich and diverse startup portfolio

Up till now, VIB has spun off 10 companies, including 5 venture capital-backed biotech companies that raised, between them, €340 million, employ over 400 people, have collaborations with the world's leading (bio)pharma and agrobiotech companies and develop a wide variety of innovative applications:

- Devgen (listed on Euronext) develops and commercializes a novel generation of biotech products for crop protection, biotech traits and germplasm for high yielding, high-quality hybrid rice and selected small grains.
- CropDesign (recently acquired by BASF) delivers agronomic traits for the global commercial seed markets. Its trait discovery program is powered by the TraitMill™, a unique platform for applied genomics.
- Ablynx (listed on Euronext) discovers and develops a novel class of antibody-derived therapeutic proteins called Nanobodies®, to treat a range of serious human diseases.
- Actogenix develops and commercializes a new generation of biological drugs called ActoBiotics™, which has the potential to treat a broad range of severe diseases.
- Pronota has developed and implemented an integrated protein biomarker pipeline applying proprietary protein chemistry techniques, advanced separation sciences and high-end mass spectrometry.



Europe and another quarter in the USA. The companies vary widely in size – from SMEs to multinationals – and in niche – from (bio)pharma to agrobiotech. In 2008, the tech-transfer activities at VIB generated a combined turnover of over €17 million.

### R&D facilities for companies at the heart of Europe

VIB's bio-incubators offer laboratory and office facilities for life sciences companies with significant R&D activities and growth potential. They are fully licensed, up-to-date buildings available for housing R&D driven life sciences companies. There are three bio-incubators: two in Ghent and one in Leuven in collaboration with K.U.Leuven and the Belgian market leader in agricultural and horticultural supplies, AVEVE. They house, between them, 15 Flemish and foreign companies.



## VIB at a glance

- Annual budget: €75 million (half of which comes from the Flemish government)
- Research staff: 1,170 (51 different nationalities)
- Annually 25 patent applications
- Annually over 70 R&D and licensing agreements with companies (of which half in Flanders and half worldwide)
- Spin-off companies: 10
- Patent portfolio: 165 active patent families
- 7 innovative drugs in clinical development

“And there are more to come,” says Dekeyser: “Private firms have stepped up to the plate, to provide specialist infrastructure to biotech companies, and a bio-accelerator is being built which the latter can perform their R&D on. This bio-accelerator will include 12,000 m<sup>2</sup> of laboratory facilities spread over 5 floors in versatile units that benefit from a range of services. Flemish biotech company Ablynx has already reserved a place there. We expect to start operations at the bio-accelerator in mid-2010.”

### The right environment for continued growth

“We have been able, so far, to establish ten companies, including five venture capital-backed start-ups,” Dekeyser continues. These companies have seen rapid growth; two are now listed on the stock market and one company was recently acquired by BASF, the world's number one chemical company. VIB's spin-offs raised €340 million, including over €200 million from regional and international venture capital funds and employ over 400 people. “The Flemish government also plays a major role in creating an ideal environment for the establishment and growth of new companies,” he says. “Because we are a small region, policy decisions are taken relatively fast. New fiscal and employment incentives have been of great help in the growth of the biotech sector in Flanders.” Another key driver is the government's Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT). IWT provides substantial research funding to biotech companies, thereby mitigating some of the risk inherent to the development of biotech products.

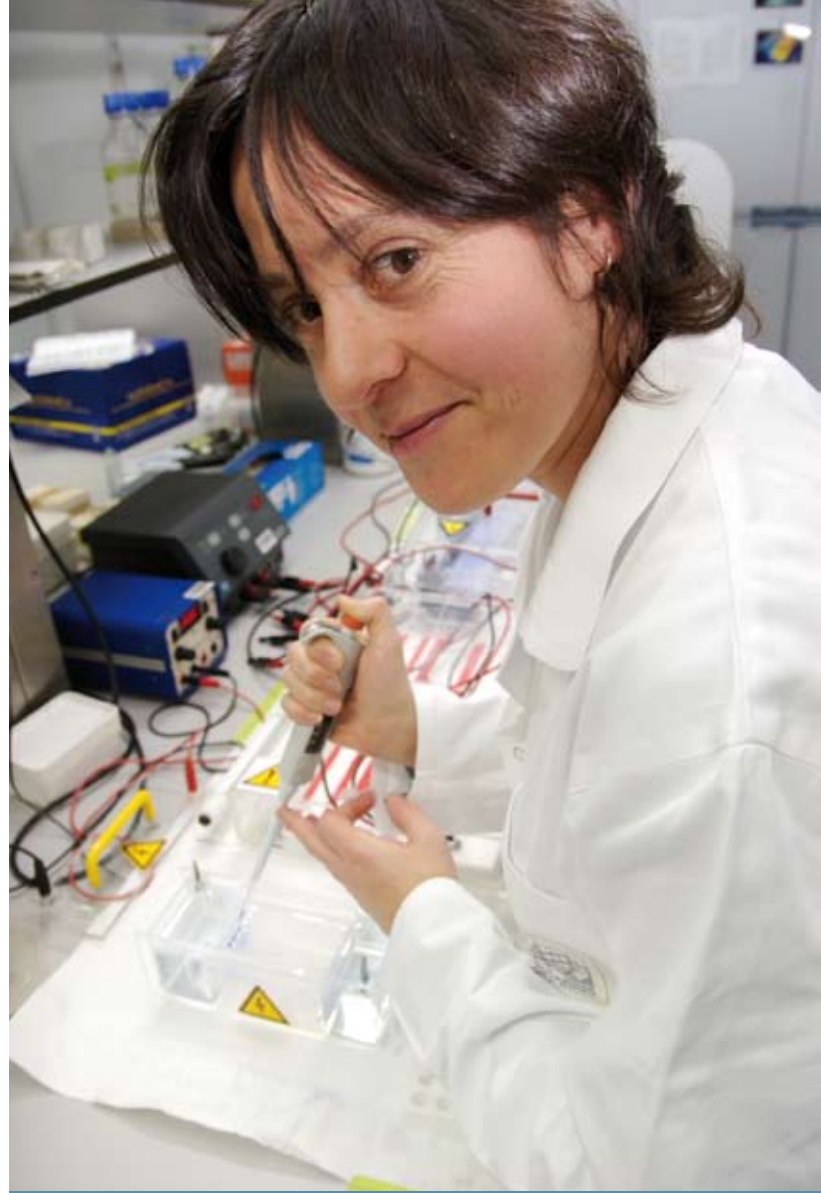
VIB is truly an internationally operating research center. Dekeyser: “Over 50 nationalities are employed here. Researchers from all over the world have enrolled in our PhD and postdoctoral

## Life sciences companies active at VIB's bio-incubators

- In Ghent: Ablynx, Actogenix, AlgoNomics, Biomaric, BIP, Pronota and Yakult
- In Leuven: Remynd, OncoMethylome Sciences, Formac Pharmaceuticals, Fugeia, Regenesys, M4S, CMPG and ThromboGenics

programs. In Flanders they become part of a leading life sciences cluster where they are well surrounded by multilingual people who show an extraordinary openness to different cultures. A factor that should not be underestimated for the work we do here. Initiatives, such as the Odysseus program, launched by the Flemish government have also been instrumental in recruiting top researchers to our region.”

In the future, VIB will continue its excellent approach in research and technology transfer. “The well-considered integration of in-depth biology with systems biology, in which a holistic approach is taken, is an area we will further explore,” Dekeyser says. “The same goes for ‘in silico’ research, where computer models are used to simulate biological or pathobiological processes.”



## VIB: 13 different research departments at 4 Flemish universities

Ghent University:

- Dept. for Molecular Biomedical Research
- Dept. of Plant Systems Biology
- Dept. of Medical Protein Research
- Laboratory for Molecular Cancer Biology

K.U.Leuven:

- Vesalius Research Center
- Dept. of Molecular and Developmental Genetics
- Laboratory of Molecular Microbiology
- Laboratory of Developmental Genetics
- Laboratory of Systems Biology
- Autoimmune Genetics Laboratory

University of Antwerp

- Dept. of Molecular Genetics

Vrije Universiteit Brussel

- Dept. of Molecular and Cellular Interactions
- Switch Laboratory

## IMEC: where bio and nano come together

Brain wave monitoring systems that alert you to danger and then automatically administer medicinal drugs to ward off an epileptic attack, or an external system keeping an eye on all your bodily functions. These are the tiny devices and systems that can result of IMEC's research that will dominate tomorrow's medical landscape. A very promising and multidisciplinary research program combines technology and biology in a revolutionary way. It is called 'Human++'.

IMEC is one of Flanders' flagship research institutions, employing over 1,650 people of more than 60 different nationalities. Through its Industrial Affiliation Programs (IIAP) it cooperates with leading industrial players from around the globe, sharing intellectual property, talent, risks and costs.

"About ten years ago IMEC started to do research in medical applications using nanotechnology," Kris Verstreken, Program Director BioNanoElectronics, explains. "What previously was thought impossible has now become possible, thanks to this rapidly develop-

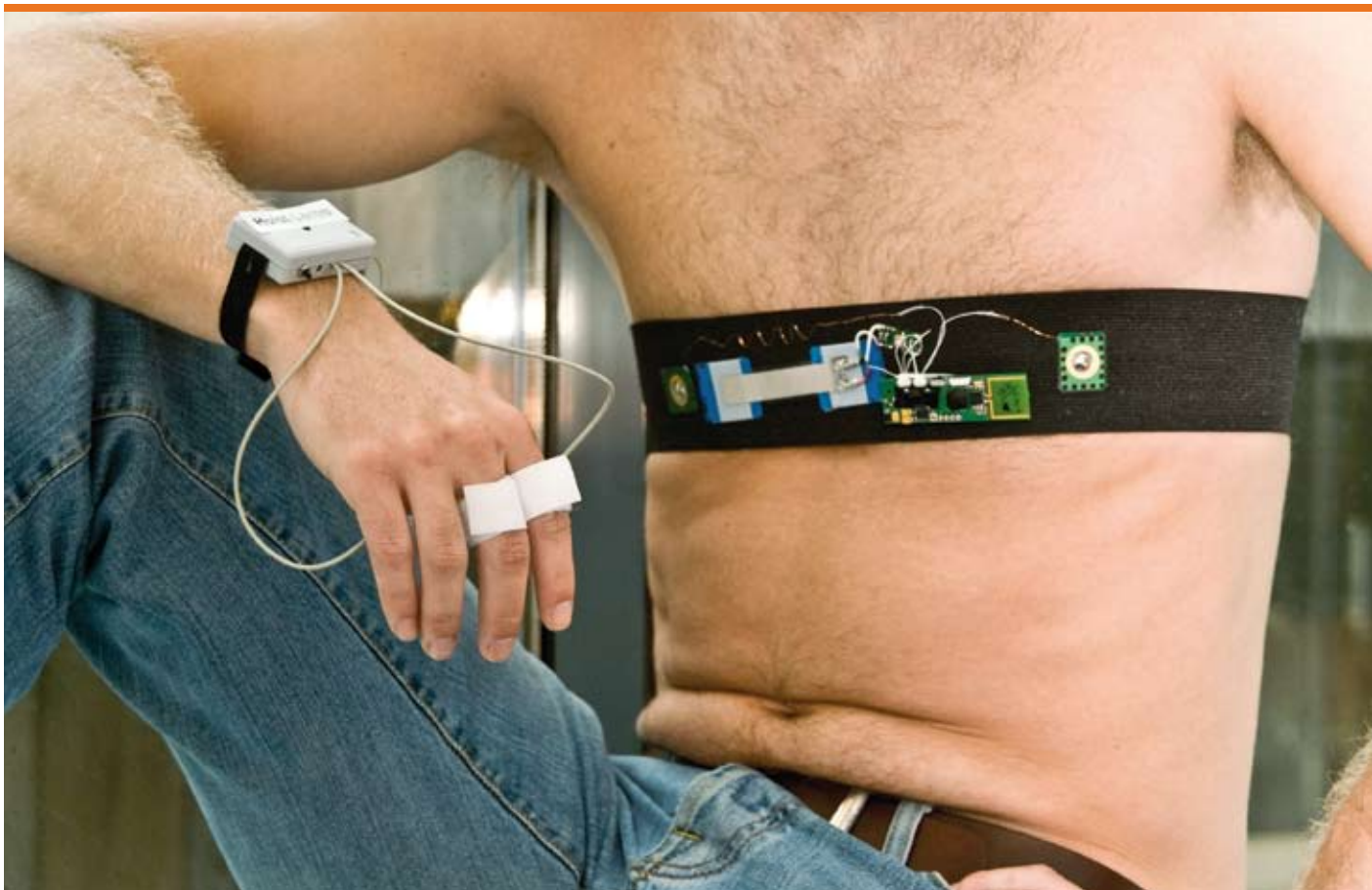
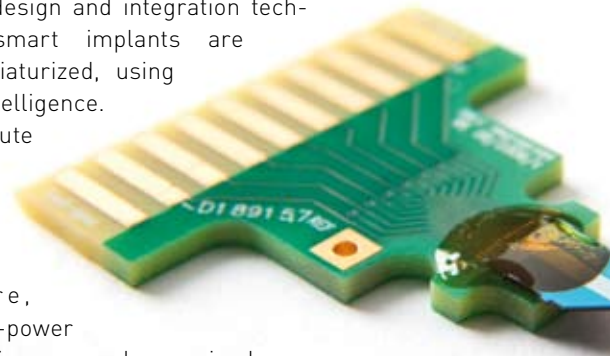
ing research. Our Human++ Program is a clear answer to an ageing society with spiraling healthcare costs and is based on four main pillars: smart implants, wearable health and comfort monitoring, brain-IC interfaces and molecular diagnostics and imaging."

### Smart is the word

To replace conventional implants which rely on traditional design and integration technologies, smart implants are greatly miniaturized, using on-board intelligence.

They contribute to the vision of a personalized proactive healthcare, using low-power methodologies and wireless communication with the outside world.

"IMEC also performs pioneering research into tiny autonomous sensor nodes, that will be used to create a body area network, worn on the body and monitoring vital body parameters."





Verstreken adds. "When predetermined alarm values are reached, the system can automatically summon a doctor or an ambulance."

### Communication and visualization

Another focal point of IMEC's Human++ Program is the development of neuroelectronic hybrid systems that allow a bidirectional exchange of information between neurons and electronic devices. These brain-IC interfaces can be used for the study and therapy of brain and nervous system disorders.

With the new molecular diagnostic and imaging techniques being developed at IMEC, cancer cells could be detected inside the body, or disease markers outside the body in, for instance, blood samples by using innovative biosensor concepts.

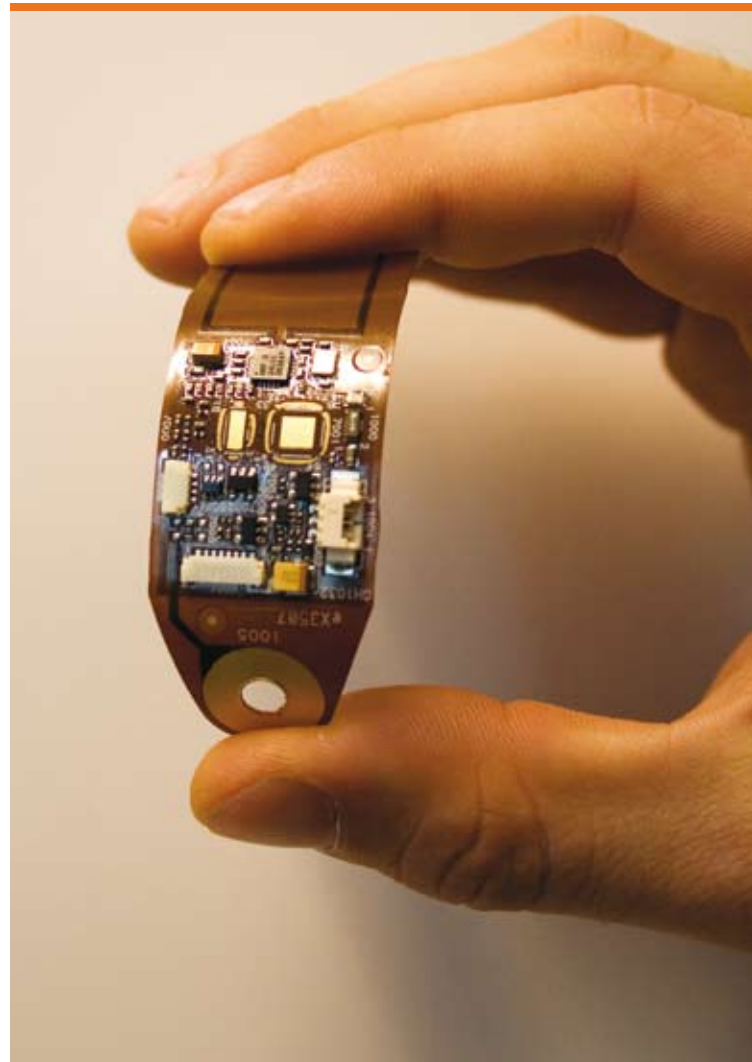
## NERF: VIB and IMEC join forces in unique neuroelectronics research

Neuro Electronic Research Flanders, or NERF for short, is a joint initiative by VIB, IMEC and K.U.Leuven University. The NERF research group focuses on neuroelectronics, the combination of neurosciences and nanotechnology, and will be the first one of its kind. Its aim is to map all signals a brain cell receives and transmits, totaling about 25,000 per cell. NERF will use its know-how for practical applications, including research into brain damage remedies.

NERF will launch in the middle of 2009, operating from the IMEC buildings in Leuven, where it will operate with a yearly budget of €6 million.

### A dream partner

IMEC is much more than research. It's a model business associate in the heart of Flanders, with the intention to strengthen Flemish industry. Its Microelectronics Training Center offers many possibilities. Thanks to its shared R&D projects, technology transfers and feasibility studies, among other things, IMEC is the ideal partner for life sciences companies with a keen interest in the nanoworld.



### Interested...?

*... in knowing more on how your company can collaborate with VIB and IMEC? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at [invest@flanders.be](mailto:invest@flanders.be)*

# Advantage 6: Strong human capital

*Life sciences is an industry in which people play a crucial role. In researching new pharmaceuticals, in developing the latest industrial processes, but also in production, logistics and a wide range of other support services. Flanders is renowned the world over for the high quality of its human capital in life sciences industries. Our academic training programs are among the world's finest. In addition, our people are highly productive, multilingual and show a high level of sensitivity and tolerance when it comes to other cultures. These are crucial competencies for working in today's global economy.*

## High-performance educational system

Flanders' educational system is world-renowned. This was recently confirmed by the Organization for Economic Cooperation and Development (OECD). In its 2008 PISA survey, Flemish 15-year olds achieved impressive results for sciences, mathematics and reading skills.

### Science achievement score | 2008

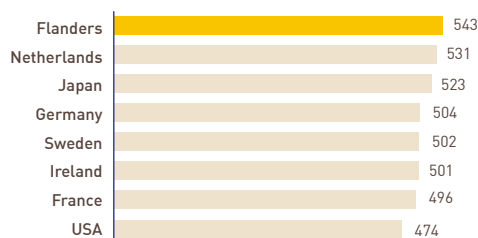
PISA assessment score



Source: OECD, PISA 2008

### Mathematics achievement score | 2008

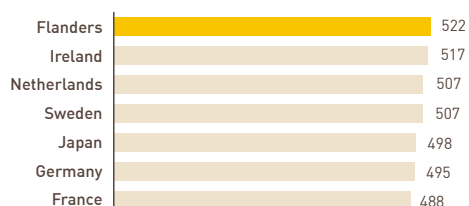
PISA assessment score



Source: OECD, PISA 2008

### Reading skills | 2008

PISA assessment score



Source: OECD, PISA 2008

When it comes to scientific literacy, Flanders is ranked number 3 worldwide. Only Finland and Hong Kong-China did significantly better. Flemish scholars excel in the usage, interpretation and explanation of scientific proofs.

PISA 2008 confirms, once again, the top-notch performance of Flemish scholars in mathematics. No other country performed significantly better. Only 3 Asian nations – Taipei-China, Hong Kong-China and South Korea – and Finland obtained a higher average.

As for reading skills, only Hong Kong-China, South Korea and Finland scored significantly better.

## Higher education with a sharp focus on applied skills

Flanders is home to six universities, of which the Catholic University of Leuven (K.U.Leuven) and Ghent University (UGent) are the eldest and have received the most international recognition in a wide range of fields. Four other strong universities complete the academic landscape: Vrije Universiteit Brussel and Hogeschool-Universiteit Brussel (Brussels), University of Antwerp and Hasselt University.

*“There is very productive interaction with the academic world possible here, not to mention that it provides us with a source of highly educated talent.”*

*Patrik De Haes, CEO, ThromboGenics*

These prime academic institutions have built up an enviable international reputation as far as the training of scientific students, both local and from all over the world, is concerned. This high level of education is demonstrated through the high quality of fundamental research and scientific publications.

The Flemish universities have entered into technology partnerships with numerous local colleges of higher education and companies from all kinds of industries. Through close cooperation, successful inventions are commercialized and conduce to create a better world for millions of people. This is also one of the reasons why so many spin-off companies have sprung up in Flanders over the past two decades.

## Odysseus: the government's brain-gain

The Odysseus program encourages eminent researchers who have made a name for themselves abroad to pursue an independent research career at a Flemish university. Top-level or high-potential researchers are offered a position at the Flemish host institute while the Research Foundation Flanders (FWO) grants a sizeable amount, in start up financing, for a period of five years. The Flemish Community provides the FWO with €12 million per year for this kind of sponsorship.

These researchers can, with this Odysseus support, set up their own research group or open up a new line of research. Examples of renowned scientists that currently conduct a life sciences related Odysseus project are:

- Cathérine Verfaillie (Flanders): 'Stem cell research at the Stem Cell Institute, K.U.Leuven.'
- Guy Boeckxstaens (Flanders): 'The brain and the innate immune system'
- Jiri Friml (Czech Republic): 'Morphogenetic auxin gradients as an interface between cellular processes and multicellular plant development'
- Bart Lambrecht (Flanders): 'Exploiting the function of dendritic cells to fight disease'
- Kerensa Broersen (the Netherlands): 'An analysis of the effects of Alzheimer's disease-associated risk factors on the toxicity of Abeta aggregation'
- Han Remaut (United States): 'Structural biology of Helicobacter pylori virulence factors'
- Maurilio Sampaolesi (Italy): 'Molecular mechanisms of cardiomyopathy related to muscular dystrophy and stem cell therapy'
- Geert Van Loo (Flanders): 'Study of the (patho) physiological role of NF-κB inhibitors A20 and ABINs through genetic modifications in the mouse'
- Kevin Verstrepen (Flanders): 'Tandem repeats as hyper-variable functional modules in genomes – A systems biology approach'

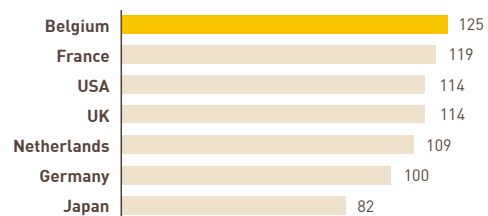
Flanders also has an eye for the business side of the life sciences industry. With the Vlerick Leuven Ghent Management School, two of Flanders reputed universities (Ghent and Leuven) have joined forces to develop a business school with international standing. In January 2008, it was included in the Financial Times' MBA rankings. It is number 1 in the Benelux and ranked among the world's top 25 schools by the British magazine The Economist. In the past five years the Vlerick Leuven Ghent Management School has received the three most important international accreditations going – AACSB (USA), AMBA (UK) and EQUIS (EU) – which is further proof of its quality.

## Highly productive workforce

Belgium, and Flanders as a region, can boast some excellent figures when it comes to productivity. In the 2008 IMD World Competitiveness Yearbook, Belgium is – as usual – ahead of its neighboring countries. It also beats the USA and Japan.

### Productivity Index

Germany = 100, 2007



Source: IMD World Competitiveness Yearbook 2008

## Like to...?

... know about how Flanders' strong human capital can deliver added value to your business in the region? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at

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# Advantage 7: Widely available funding for R&D in life sciences

*Finding the venture capital to conduct complex, high-risk research is pivotal for any life sciences start-up company. It often takes more than a decade before an actual product is developed and finds its way to the market. Flanders is home to a legion of newly-formed life sciences firms that benefit from the funding provided by both public and private venture capital firms. In addition, the Flemish government offers - through the Institute for the Promotion of Innovation by Science and Technology (IWT) - a unique subsidy program for firms seeking to innovate in life sciences in Flanders.*

## Gimv: growing biotech businesses

Since its inception in the early 80s Gimv has always been at the forefront of supporting biotech businesses in Flanders. Gimv's mission is to create added value by investing in promising small to medium-sized companies. It invested in life sciences from the very beginning, when Plant Genetic Systems (PGS), Flanders' first biotech company, was founded in 1982. Over time Gimv has grown into a European investment company with nearly 30 years of experience in private equity and venture capital. The company is listed on Euronext Brussels and currently manages assets worth around €1.8 billion.

***“The well-conceived policy of the Flemish government has made Flanders a unique biotech region in Europe.”***

*Patrick Van Beneden, Executive Vice-President Life Sciences, Gimv*

Three prerequisites for having a good breeding ground to establish tier-one biotech companies are: top-level science practiced at local universities; highly-qualified scientists, including renowned professors such as Marc Van Montagu and Désiré Collen; and a tax-friendly environment with a supportive government and major investors. This is where Gimv steps in.

### From seed finance to growth capital

Yet, Gimv offers companies much more than money. “We enter the cycle from the very beginning,” explains Patrick Van Beneden, Executive Vice-President Life Sciences: “In a first phase, Gimv assists companies in refining their business plan and business model. Thanks to our

broad-based network, we can help entrepreneurs attract additional managerial personnel and business contacts and find other (international) investors. We support companies in their growth, operational improvement, expansion and financial optimization until the moment they realize an IPO or get acquired by a bigger company.”

In most cases, Gimv's participation in a company lasts seven to fifteen years. Gimv has, for instance, been a project partner of Innogenetics for fourteen years now; of PGS for fifteen and of Devgen for eleven years. Quite often, Gimv provides the biotech companies with initial seed money, followed by early stage capital and growth financing.

## Biotech Fonds Vlaanderen

Biotech Fonds Vlaanderen, managed by Gimv, was launched in 1994 to provide venture capital to start-ups and existing SMEs, in the Flemish life sciences sector. Biotech Fonds Vlaanderen co-invests with Gimv and other venture capitalists in promising companies, often at a very early stage. Moreover, the proceeds from divestments are re-used for new investments. In this way, Biotech Fonds Vlaanderen has increased its assets under management from €25 million to more than €60 million.

So far, Biotech Fonds Vlaanderen has participated in 17 companies operating in the life sciences sector in Flanders including: Ablynx, ActoGeniX, Pronota, Movetis, Devgen, ThromboGenics, CropDesign, Galapagos, Crucell, Innogenetics, PGS and Pharming.

### A unique, three-pronged system to support the biotech-ecosystem

When biotech became a Flemish top priority, it launched several tax incentives for biotech businesses, including a capped social security

*“Two Flemish organizations were vital to the initial growth of the company: Flanders’ major private equity and venture capital provider Gimv and IWT. Both organizations provided us with the necessary funding and expertise.”*

*Thierry Bogaert, CEO, Devgen*

contribution on research and a limited tax on income from intellectual property. In addition, the Flemish government also launched Biotech

Fonds Vlaanderen, managed by Gimv. Whereas Gimv invests in many sectors, this fund is specifically committed to life sciences companies in Flanders. What is more, the Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT) provides R&D and innovation support to biotech businesses.

“The well-conceived policy of the Flemish government has made Flanders a unique biotech region in Europe,” Van Beneden adds. “The combination of excellent science, international management, tax benefits and the ongoing commitment from Gimv, Biotech Fonds Vlaanderen, IWT and many others has resulted in a competitive position for Flanders.”



## IWT: a solid road to dependable funding

IWT is the Institute for the Promotion of Innovation by Science and Technology. It was established by the Flemish government as a regional public organization to provide innovation and R&D support in Flanders. Not just to Flemish businesses, but to any company operating within Flemish borders.

*“In life sciences, we focus on risk sharing. Our funding is available to both SMEs and larger companies. These can benefit from IWT’s flexible and pragmatic approach, one of our standout advantages.”*

*Dirk Veelaert, Scientific Advisor, IWT*

Out of the IWT funding budget of €285 million, €100 million went to life sciences research in 2008. The money was spread over 370 approved projects. “In life sciences, we focus on risk sharing,” explains Dirk Veelaert, Scientific Advisor at IWT. “Our funding is available to both SMEs and larger companies. These can benefit from IWT’s flexible and pragmatic approach, one of our standout advantages.”

### Triple function

The services of IWT are available to every life science business operating in Flanders. But it doesn’t stop there. “If a foreign company expresses an interest to settle here, it can submit a proposal before taking the step to physically move to Flanders. The company can decide on its best course of action after our funding appraisal,” Veelaert explains. “This makes it much easier for foreign companies to reach a decision.”

Besides the considerable financial support IWT has been offering, since its launch in 1991, the institution also assists in networking and training. Dirk Veelaert: “We stimulate cooperation and networking of businesses and institutions through our VIS – or Flemish Innovative Cooperation – projects. We supported 13 VIS projects in life sciences in 2008, for a total amount of €4.4 million, including cooperation possibilities with the food and agricultural sectors. In addition, our large European network enables companies to find suitable business partners abroad.”

A third IWT role lies in the stimulation of training researchers through scholarships and fellowships. 244 personal mandates were approved in the life sciences sector in 2008. IWT offers two kinds of in-service training: via the Flemish universities or in-company, the latter by means of the Baekeland Funds in close cooperation with the universities and research organizations.

### Quality control

IWT offers an attractive quality control service to companies applying for funds. When the IWT jury, composed of international experts, evaluates a proposal, it performs a due diligence, thoroughly examining the project, both technically and commercially. “This works as a hallmark towards other investors,” Veelaert says. “If a project’s request for funding is refused, we offer the company clear advice on what was lacking, thus helping it to draft better-structured proposals in the future.”

## IWT in life sciences

- 40% of financial support within life sciences to start-up companies (from years one to six)
- 50% of financial support within life sciences to SMEs
- Increase of €20 million in life science support from 2007 to 2008
- €19.6 million for personal, in-depth education in 2008

### Like to...?

*... learn more about the wide range of funding Flanders has to offer life sciences companies? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at*

**[invest@flanders.be](mailto:invest@flanders.be)**

## Private venture capital is also widely available in Flanders to the life sciences industry

In 2007, the amount of venture capital provided to Flemish biotech companies totaled around €100 million. The lion's share of this capital comes from the Flemish capital fund Gimv, the Biotech Fonds Vlaanderen (Biotech Fund Flanders) and the European Investment Fund (EIF).

Numerous private venture capital companies and funds are present in Flanders, providing both Flemish and foreign capital to the biotech industry in the region. Here's a list with a few examples:

### Belgian & Flemish funds

- AIP- Biotech Investment Partners
- Antwerp Innovation Centre (University of Antwerp seeding fund)
- Baekeland Fonds (Ghent University seeding fund)
- Bank Degroof
- Beluga
- Brussels BI3 Fund (University of Brussels seeding fund)
- Capricorn Venture Partners
- Creafund II
- Fagus (Fortis high-tech fund)
- Fortis Private Equity
- Gemma Frisius Fund II (University of Leuven seeding fund)
- ING Belgium
- KBC Private Equity
- Partners@venture
- Privast Capital Partners
- Profinpar
- Proseed capital holdings
- Quest for growth
- Rendex
- Poly Technos Venture
- Partners GmbH
- Soffinova

### International Funds

- Auriga Partners
- Abingworth Venture Management
- Advent Venture Partners
- AlInvest Partners NV
- Alta Berkeley Venture Partners
- Apax Partners & Co
- Atlas
- Burill & Company
- Gilde
- J&J Development Corporation
- Life Sciences Partners BV
- Omega Fund

## Flanders: at the top as far as venture capital per dedicated biotech company is concerned

A comparative study has revealed that Belgium has the most venture capital available per dedicated biotech company: €2.8 million. Flanders, as a region, lies in third spot, after France, with €1.6 million of venture capital per dedicated biotech company.

	Total in € million	Venture capital per dedicated biotech company in € million
Belgium	118	2,8
France	242	1,6
<b>Flanders</b>	<b>85</b>	<b>1,6</b>
United Kingdom	238	0,9
Germany	213	0,5
Sweden	47	0,4
The Netherlands	29	0,4
Walloon Region	-	-
North-Rhine Westphalia	-	-

Source: Ernst & Young (2007) and Technoplois (2008)

# Advantage 8

## Clear government focus on life sciences

*The life sciences industry is a strategically important industry in Flanders. The federal government makes big efforts to create a competitive legal and fiscal climate for both local and foreign companies active in R&D in the region. A wide range of tax benefits and a unique legal framework for fast and flexible undertaking of (pre)clinical studies makes Flanders a technological top region in Europe for multinationals looking for a competitive edge in their life sciences activities.*

### Fast approval for (pre)clinical trials

Flanders is a top region in Europe for firms that wish to perform (pre)clinical trials. In 2006, some 1,800 trials were performed in Belgium, of which the lion's share in Flanders. The collaborations between hospitals, universities, research centers and pharmaceutical companies have created an ideal environment for this essential part of developing an innovative therapeutic.

***“An approval for Phase I trials can be reached in Flanders in a mere two weeks.***

***This is a major advantage compared to other countries.”***

*Robert Lins, Business Manager Benelux at SGS Life Science Services.*

The Federal Law of May 7th 2004 on experiments on humans has kept the approval times extremely short: 15 days for Phase I and 28 days for Phase I-IV. This provides life sciences companies with trial activities in Flanders with a competitive advantage over other European regions.

### One of Europe's most tax-friendly regions for patents

From the 2008 tax assessment year onwards, a new regulation has come into force, at the federal level, on income derived from new patents. With this new incentive, Flanders has propelled itself into the lead group of tax-friendly European regions.

The tax incentive applies to income derived, since 2007, from new patents. These patents might refer to that firm's own invention. Or it could be one they have purchased and which has since been improved through work done in a research center. Incidentally, the patent may – except in Flanders – also be applied for through the European Patents Office in Munich.

A company in Flanders is able – via the new incentive – to deduct 80% of its income derived from patents from its taxable net profit. So anyone who invested €100 in research and then earned €400 in royalties on the back of the ensuing patent is therefore entitled to deduct €320 from his profit. This yields, all told, a saving of €108 in corporate income tax, or slightly more than the initial investment in research.

### Beneficial tax measures for investments and research staff

Investments in patents and fixed assets used in Flanders to promote R&D are eligible for an increased investment deduction of either 13.5% on the acquisition value or 20.5% of the annual depreciations permitted for tax purposes. As an alternative to the investment deduction, a R&D tax credit is granted on qualifying R&D-related investments. The taxpayer must opt for one of the two methods (investment deduction or R&D tax credit).

Companies active in R&D in Flanders are eligible for an exemption from payroll withholding tax for researchers (PhD, engineers and master degrees). Recently, the maximum exemption has been increased to 75%.

## Other beneficial tax measures

The government has created a high-quality business climate for the companies that settle in Flanders. And they can count on intensive support, advice and measures geared to their business objectives and needs. Some highlights:

- The notional interest deduction: companies using their own capital to finance their activities are eligible for a notional interest deduction of 4.473% for assessment year 2010. This brings the effective taxation rate below 26%. The notional interest deduction is unique in its kind and excels in its relative simplicity. It has an important impact on the investment decisions of the large players;
- 0% registration duties on contributions: proportional registration duties on contributions, whether in money or kind, have been abolished;

- Application of parent-subsidiary directive expanded to treaty countries: the exemption from withholding taxes on payments of dividends – as long as the conditions of the

***“The tax breaks we receive in Flanders for IP earnings are major plus.”***

*Kris Motmans, Marketing & Communications Manager, Tigenix*

European parent–subsidiary directive are met – has been expanded to parent companies domiciled in almost all the treaty countries. This benefits American, Japanese, Chinese, Brazilian, Canadian and Australian groups, among others;

- Appreciated policy with respect to double-taxation treaties: Belgium was the very first country that concluded a double-taxation treaty with Hong Kong. The new treaty with the United States also provides for an exemption from withholding taxes on payments of dividends and interests;
- Upgrade of ruling practice: the Belgian practice of fiscal rulings on previous agreements has undergone an upgrade: the nature of the cases that may be submitted to the Ruling Commission have been considerably expanded. While the Commission must commit itself to deliver a ruling within three months.



### Looking to...?

*... reap the fruits of state measures designed to support the life sciences industries in Flanders? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at [invest@flanders.be](mailto:invest@flanders.be)*

## Advantage 9

# Wide support for Flanders' life sciences cluster

*Precisely because Flanders has been playing a pioneering role in life sciences for decades on end, the industry in the region is well represented by organizations that uphold its interests. They guarantee sustained growth for the industry in a stimulating business environment. Both local and international players can count on a forceful voice at all government levels: locally, nationwide and across European borders.*

### FlandersBio: Flanders' substantial biotech umbrella

'Building Biotech Bridges' is the slogan of FlandersBio. Which bridges? Well those between biotech companies, the government and academia. Between the businesses themselves. From Flemish biotech towards other countries. Or towards individual applicants.

FlandersBio is the umbrella organization representing the Flemish life sciences cluster. It is the driving force for the sustained growth of the knowledge-based Flemish bio business. Fostering networking, informing and lobbying are three of FlandersBio's main pillars. In addition, FlandersBio looks beyond Flemish borders: "We see it as our mission to strengthen Flanders' international visibility and image abroad as a dynamic life science region and to support foreign businesses willing to invest in our region," explains General Manager Ann Van Gysel.

#### Intensive lobbying

As an initial point of contact between the life sciences industry and the Flemish government, the aim of FlandersBio is to create the most supportive conditions possible for biotech businesses in the Flemish Region. "We lobby the government here to increase tax incentives and to lower labor costs. To maintain and increase subsidies for R&D activities. And also to reduce financial and regulatory barriers that curb swift growth," clarifies Van Gysel.

#### Enriching members

"We are the ultimate information portal on Flemish life sciences," says Van Gysel. "Our media center covers and archives important regional and international news. We have a CV database and publish job vacancies. Our in-house team of specialists is on permanent stand-by to answer all kinds of questions on life sciences in Flanders, equipped with the latest facts and figures. And access to workshops in-

roducing innovative technology keeps our customers up to date."

#### Bringing centers of knowledge together

FlandersBio's seminars and workshops allow scientists to tap into the expertise of colleagues and expert speakers. A user-friendly database provides a perfect overview of the local life sciences communities. "We assist companies in finding the right agencies for their queries on every aspect of a project, such as R&D, funding, marketing or B2B communication," Van Gysel continues. "What is more, our yearly convention 'Knowledge for Growth' brings hundreds of employees together but is just one of our networking occasions, as we also regularly organize events targeting specific audiences such as HR personnel or CEOs. This is only one of the ways we bring people together."

### FlandersBio in numbers

- Set up in 2004
- 140 members, 95 of which are biotech companies
- 600 to 700 visitors to its annual convention 'Knowledge for Growth'
- Represents a total of 10,000 life sciences employees in Flanders
- The total turnover of the biotechnology sector in Flanders is approximately €2.9 billion and good for € 0.5 billion R&D expenditures

## Knowledge for Growth Annual life sciences convention in Flanders

Since FlandersBio organized Knowledge for Growth for the first time in 2005, this life sciences convention has attracted a large contingent of biotech players and service providers. At more recent editions, a growing interest by other life sciences players has been noted which reflects a shift towards converging technologies and increased collaboration.

With 600 participants, 40 plenary, keynote, scientific and policy talks and over 70 exhibitors, the 2008 edition was a resounding success. Over one third of the participants (30% academic and 70% industrial) holds a scientific post. Most of the decision-makers of Flemish life science companies show a keen interest in the convention.

### essenscia: strong life sciences representation

Flanders has always been one of Europe's top regions when it comes to chemicals and life sciences. *essenscia* is the name of the multisectoral umbrella organization representing these industries in Belgium. Structured in three parts, it's modeled on the three Belgian regions. With more than 450 member companies, the Flemish part represents 170,000 employees and has a strong voice towards both regional and federal governments.

*essenscia* strives to create an efficient and healthy business climate, closely cooperating with the Flemish, federal and European authorities. "Because of our long tradition and high number of members, we are influential at many levels and we use that to our members' benefit," says *essenscia* spokesman Frank Beckx.

#### Powerful lobby group

"It is thanks to *essenscia* that taxes on researchers in private companies have decreased by 75 per cent," Beckx affirms. "In the biotech area, *essenscia* lobbies with many favorable results. The federation and its biotech division, Bio.be, have produced position papers on biofuels, advanced therapies, biosimilars and GMOs, among other subjects. At the European level, *essenscia* is actively involved in Cefic (the European Council of Chemical Manufacturers' Federations), and at the federal level in the VBO-FEB (Federation of Belgian Companies)."

Closely following developments in new laws, decrees and regulations, *essenscia* provides its members with the necessary expertise in this

area. It informs life sciences companies on a variety of practical issues such as financing opportunities, health and safety, environmental, legal and regulatory matters, foreign trade and spatial planning.

#### Key life sciences partner

Establishing a correct image and visibility of the life sciences sector is one of *essenscia*'s core objectives. "We know there are certain prejudices on the life sciences industry," says Beckx. "That's why it is important we get the right story across to the public. Examples of this are our recent awareness programs in primary and secondary schools, which are proving very effective."

'Innovation' and 'biotechnology' are two of *essenscia*'s top priorities. *essenscia* is composed of several skill centers, or professional sectors, grouping specific areas. Important to the life sciences sector are Bio.be, covering biotech business and Pharma.be on medicines and vaccinations. In addition, the website [investinbiopharma.be](http://investinbiopharma.be) underlines Belgium, and more specific Flanders, as the premium biopharma region in Europe for R&D and manufacturing.

## Bio.be (Belgian Association for Bioindustries)

The Belgian Association for Bioindustries is a division of essenscia that represents the companies and professionals involved in the research, development, testing, production or marketing of biotechnology applications, as well as those servicing the biotechnology community. Bio.be pays particular attention to the specific needs of our entrepreneurial members, whose success will determine the future of biotechnology in Belgium.

Bio.be represents 84 members, 10,000 direct jobs and a €3 billion turnover.

## UNAMEC: representing producers and manufacturers of medical devices

UNAMEC, the Belgian association for producers and/or distributors of medical devices, has been active in Flanders since 1959. The organization represents some 200 businesses that make or distribute a wide range of medical devices, from disposables and implants to fixtures, fittings, tools and equipment, like bandages, needles, pacemakers and anesthetic systems.

In its numerous contacts with the political and administrative bodies, UNAMEC's proactive position makes it a fully-fledged interlocutor for the sector at the national and international levels. UNAMEC supports its member companies on the following matters, among other things: the tracking of payback files, collective bargaining with professional associations, training, environmental issues, standardization and regulation, and much more besides.

## Pharma.be (General Association of the Medical Industry)

Established in 1966, Pharma.be upholds the interests of the Belgian medical industry. Pharma.be strives for a healthy pharmaceutical business climate, negotiating directly with the regional governments and other health care partners. The website [investinbiopharma.be](http://investinbiopharma.be) is an initiative of essenscia with Pharma.be and Bio.be as partners, among others.

Pharma.be represents 146 members 29,000 direct jobs and a €3.9 billion turnover.

### Want to...?

*... benefit from the wide support for the life sciences cluster in Flanders? If so, contact us today at Flanders Investment & Trade. It will be our pleasure to assist you. Call us on +32 2 504 87 11 or email us at*

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# Advantage 10

## Flanders Investment & Trade: support at the start and the expansion of your operations

*Providing advice and support to foreign companies wanting to start or expand operations in Flanders is one of the core responsibilities of Flanders Investment & Trade. Thanks to our experienced, multilingual staff we are able to help companies integrate into one of Europe's most prosperous economies efficiently and effectively.*

Flanders Investment & Trade has 75 offices worldwide: we can assist you wherever you are. And, thanks to our extensive and active network within Flanders, we can also provide you with region-specific information.

### Identification of optimal location

Flanders Investment & Trade provides confidential information and support without cost to companies who want to start or expand operations within or from within Flanders. Our experienced staff will help you look for a suitable location for your activities, taking into account accessibility by road, water and rail, proximity to ports and airports, accessibility to markets and suppliers, availability of qualified personnel, and support measures from regional, national and European government agencies. But first and foremost, they will listen to your needs and wishes.

### Knowledge and contact center

Flanders Investment & Trade is a knowledge-intensive organization with access to up-to-date information about the availability of sites, the local workforce, recruitment and training, suppliers, markets and export possibilities.

We can put you in touch with the right regional and national government agencies, utility companies, top knowledge centers and academic institutions. We can introduce you to sectoral and cross-sectoral business networks. We can ensure that your company and your employees and their families will feel right at home in Flanders.

### Subsidies and support measures

Flanders Investment & Trade can provide you with information about the range of subsidies and support measures offered by the Flemish and national governments. We know everything there is to know about investment subsidies and favorable tax measures, rulings, the notional in-

### Dedicated contact for bio- and nanotech companies from Japan and the USA

Since 2007, Flanders Investment & Trade has posted technology attachés for bio- and nanotechnology in Tokyo (Japan) and New York (USA). These dedicated technological business experts serve as a direct link for American and Japanese hi-tech companies looking to invest in Flanders, set up joint ventures or do business with Flemish firms and/or centers of knowledge.

Want to know more? Contact our Tokyo office at [tokyo@fitagency.com](mailto:tokyo@fitagency.com) or our New York office at [newyork@fitagency.com](mailto:newyork@fitagency.com). You'll be surprised at what we can do for you.

terest deduction, exemption from the tax deduction at source for dividends derived from domestic securities, VAT grouping and setting up a pension fund organization. We can explain to you those measures that produce a financial advantage for R&D activities, such as the credits for feasibility studies, basic research and prototype development. We can clarify the royalty taxes on patents and the economical social security system for foreign researchers. And, finally, we can tell you about the support available for recruiting, hiring and training your personnel.

### Legal requirements clarified

Flanders Investment & Trade can support you in meeting the legal requirements involved in starting up your business in Flanders.

A handy reference for potential investors is our comprehensive Investment Guide to Establishing a Business in Flanders. The guide provides an

overview of the different types of companies, the steps involved in setting up a company, available support measures, taxes, staffing, import and export, competition laws and environmental regulations. It can be downloaded or ordered via our website.

### For more information

You can find all the information about investing in Flanders at:

[www.flandersinvestmentandtrade.com](http://www.flandersinvestmentandtrade.com).

The website provides a clear overview of the infrastructure, R&D activities and different sectors. It also contains useful information for expats who want to know more about the social life in the region.

Its news section keeps investors up-to-date on the latest economic, financial, social, cultural and scientific news, giving them a clearer picture of what is on offer in Flanders today. The website is available in five languages: English, German, French, Japanese and Chinese.

In addition, Flanders Investment & Trade offers brochures about the following industries:

- Automotive
- ICT
- Logistics
- Chemical

All of the brochures can be ordered or downloaded from our website. Or ask for them at one of our offices.

Would you like to know what Flanders could mean to your company? Then contact us now at:

## Flanders Investment & Trade

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[www.flandersinvestmentandtrade.com](http://www.flandersinvestmentandtrade.com)

*“Besides its powerhouse location, Flanders provides businesses with added value at many other levels too. Think, for example, of research and innovation, a highly educated and productive workforce with a fluency in languages, and highly developed transport and communication infrastructures. Foreign businesses receive a warm welcome in Flanders and are well surrounded here by all the ingredients to ensure sustainable growth.”*

*Koen Allaert, General Manager, Flanders Investment & Trade*

*“It is the ambition of Flanders Investment & Trade to continually strengthen the economic fiber of our region. We provide companies with a top-class personal service on all aspects of doing business in and from Flanders. This ensures that they can take full advantage of the many benefits of Europe’s best business location.”*

*Pascal Walrave, Director Inward Investment, Flanders Investment & Trade*

# Flanders' Life Sciences strengths in a nutshell

**“We have set up our own subsidiaries to market our technology in countries worldwide. Flanders is the technological dynamo and engine for our business and the place from where we coordinate our global operations.”**

*Thierry Bogaert, CEO, Devgen*

*“We have top biotech companies performing research here. The Flemish government plays a major role in creating the ideal circumstances.*

*Because we are a small region, policy decisions are taken relatively fast.”*

*Rudy Dekeyser, managing director, VIB (Flanders Institute for Biotechnology)*

*“We can easily reach our customer base in Germany, the Netherlands, France and the UK, but also those further away such as in Russia.”*

*Frederik Wouters, Sales Coordinator, Verhaert Masters in Innovation*

**“We lobby the government here to increase tax incentives and to lower labor costs. To maintain and increase subsidies for R&D activities. And also to reduce financial and regulatory barriers that curb swift growth.”**

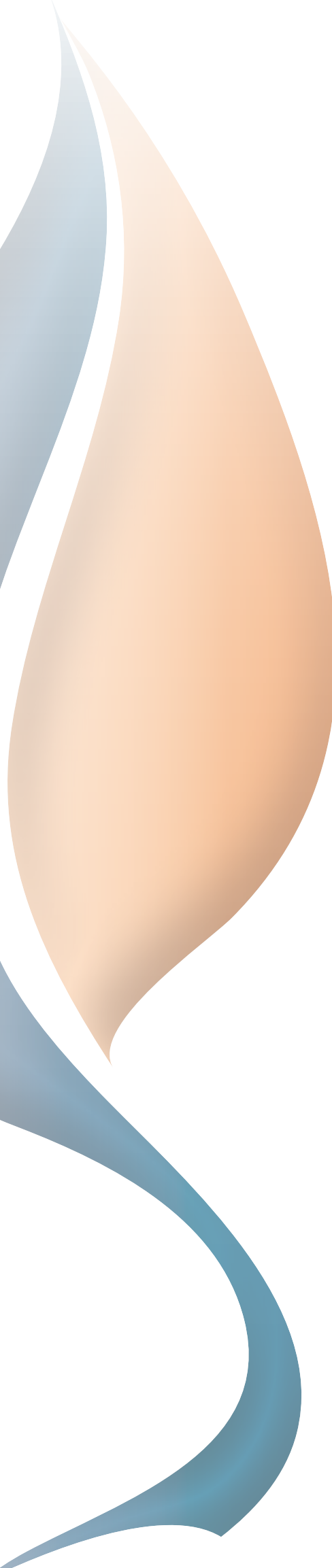
*Ann Van Gysel, General Manager, FlandersBio*

*“It is thanks to essenscia that taxes on researchers in private companies have decreased by 75%.”*

*Frank Beckx, Spokesman, essenscia*

*“Flanders stands out, compared to other European countries, when the skills of blue-collared workers are concerned,” says Ortwin Callewaert. “On top of that, they are multilingual, which is a valuable asset for an international company.”*

*Ortwin Callewaert, Plant Manager, Syral Aalst*



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