

2009 ANNUAL REPORT



CIT N° 98



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MANAGING DIRECTOR'S Greeting



D. Claudio Fernández Acevedo
Managing Director

A handwritten signature in black ink, appearing to be 'CA', written over a horizontal line.

The year 2009 marks the conclusion of the first decade of L'Urederra Technology Center. Since that distant day June 23rd, 1999, many things have happened that have marked the brilliant reality that L'Urederra is today and the great prospects opening up for the Centre in the immediate future.

What is L'Urederra now is the consequence of a path marked by hard work and effort that, sometimes following a very straight way and sometimes through a more convoluted one, have always guided us in the direction that we intended to follow: to be a Centre of excellence.

Within the cornerstones that have shaped the trajectory of L'Urederra it should be mentioned, among many other day-to-day achievements, the first hiring of personnel made in May 2000. The first R & D project which was subcontracted to L'Urederra in September 2001. The opening in July 2002 of our first laboratory, still operative at our facilities of Zudaire. The participation as a partner in our first European project "ABSORB", contract G5ST-CT-2002-50295, environmental project that has led to the development of excellent advanced materials for removing oil spills. Our first proprietary technology development

project, "POLBIONAT", granted by the Government of Navarre in January 2003. The purchase of the first heavy equipment in October 2003, a film-blowing coextrusion line that has been very useful. The leadership by L'Urederra of three European projects of the Sixth Framework Programme (PURILEACH, NANORUB And RECFINMIX) in 2004. The recognition as a Technology Centre by the Interministerial Commission of Science and Technology (CICYT) in December 2006, fulfilling some restrictive conditions (a minimum staff of 15 graduates employed, an income of at least € 360,000 or a balanced public-private funding model), which basically have not changed today. The opening of the new facilities of L'Urederra in Los Arcos, worth 2.5 million euros, financed by SPRIN and whose ownership will revert to L'Urederra through periodic contributions for a period of less than 30 years. The implementation of our nanoparticle production plant in September 2007. The incorporation into the Spanish Federation of Technological Centres (FEDIT) in December 2007, where to the conditions of the CICYT were added to be a private entity and the ownership of the technical means. The creation of our first technology-based company, called Navarrese Nanoproducts Technology S.L., in December 2007. The application for two international patents

(Europe, USA and Japan) numbers PCT/EP2008/004624 and PCT/ES2008/000175 during 2008. The grant as a coordinator by the Directorate of Science and Technology, Seventh Framework Programme, of the ADVANCE-FSP project and the grant, also as a coordinator, by the Directorate of Environment of the WS-REC project in the call ECO-INNOVATION (CIP- EIP-Eco-Innovation-2009-256180), both in 2009. Also in 2009, the supply of samples and establishing of trading relations with multinational companies such as BASF, DuPont, Acciona, ABCR or Nagase Group. All of them are milestones which have defined who we are.

And nowadays? The development of market nanotechnology products for the sectors of construction, wood, glass ... The development in connection with DuPont of an industrial line for the recycling of automotive windshields. The development of antibacterial films superior to any product currently available in the market. The production of extremely small nanoparticles, nanoparticles of complex nature or multilayer nanoparticles. All of them are brilliant realities today that carry the promise of a bright future.

Within this context, 2009 has been a good year for L'Urederra. Despite the crisis, L'Urederra continues expanding its staff, which has increased by 10% during this exercise. Similarly, the income generated in 2009 experienced an upward deviation of 6.11% over the initially planned one and a growth with respect to final income made in 2008 of 8.33%. The year 2009 was also marked by a sharp rise in the two most important items of income for the Centre, i.e. R & D under contract and R & D for technology acquisition, with respective increases of 21.46% and 14.03% over what was done in 2008. In particular, the aforementioned increase of 21.46% in projects under contract indicates that the commitment of L'Urederra with the business sector is every day deeper and more fruitful.

The result obtained in European projects, a traditionally successful area for L'Urederra, has been very positive in 2009, obtaining the participation as a partner in the financed projects SORBENT(FP7-2008-1-SMEs-232,533) and NANOPOLYTOX (FP7-NMP-ENV-2009-247899) as well as the coordination of the project ADVANCE-FSP (NMP3-SL-2009-2288885), with an overall funding of € 1,027,724 L'Urederra. During 2009 it was also organised and presented to the General Directorate Environment the WS-REC project, about which we have been recently reported that it has been selected for its funding.

On the other hand, the year 2009 has witnessed the presence of L'Urederra as exhibitor in an international fair of high relevance, Nanotech'09 (Tokyo), where very interesting contacts currently under development were made, the entry in their national phase of the two patents of the Centre, the development of new means of production, such as a new pilot line to produce nanoparticles, or new products as the following references TECNADIS PRS-1355-1 for hydrophobisation of building materials, TXL-2109-2 for hydrophobisation of textiles, LTH-1610-1 for hydrophobisation of leather and GLS-1616-2 for hydrophobisation of glass or the establishment of strong collaborative relationships with important companies such as BASF and DuPont, and the approach to us of other major international corporations such as Samsung. With these developments and advances, L'Urederra has continued shaping itself during 2009 as a research and development centre focused on industrial production and endowed with an advanced knowledge in the most innovative frontier of the technology of advanced materials and environment.

Despite the general crisis, 2009 has represented a period of consolidation of the Centre which foretells an optimistic future. The staff of L'Urederra, its main asset, and that now stands at 42 people, comprises a successful combination of veteran personnel highly experienced in the Centre, new staff which brings its enthusiasm and is quickly integrated into the existing working groups, and staff of recently incorporation to the Centre but with large experience in technical or management duties recruited to cover detected specific needs or defined expansion actions. It is precisely, the whole collective of the technicians and support staff of L'Urederra through their professionalism, craftsmanship, technical skills, creativity and willingness of service, the responsible of making L'Urederra one of the reference agents of R & D & i in Navarre and which it is already considered by many companies as their technology centre.

Finally, I would like to express my gratitude to all Associates and members of the Board, Government of Navarre, State and European Community institutions, and in particular to the entrepreneurial sector, which with its confidence in the Centre has enabled us to fulfil every day the central motto of L'Urederra "Technology and Innovation at your service for a better future."

GOVERNING BOARD

Steering Board

Members of the Steering Board of L'Urederra:

President: D. Eusebio Gainza Lafuente

Vice-president: D. Laureano Martínez Aramendía
SERVICIOS DE MONTEJURRA, S.A. (SMSA)

Secretary: D. Jesús Amézqueta Morrás
CIDEMA INGENIERÍA S.L.

Members: PROMOCIÓN Y GESTIÓN DE INVERSIONES, S.A. (PROGINSA)

CONSERVAS ITURRI

INGENIERIA MEDIOAMBIENTAL GIROAZ, S.L.

GUMIEL Y MENDIA, S.L.

SICOGESA EXPLOTACIÓN, S.A.

AYUNTAMIENTO DE LOS ARCOS

AYUNTAMIENTO DE ESTELLA

SOCIEDAD DE PROMOCIÓN DE INVERSIONES E INFRAESTRUCTURAS DE NAVARRA (SPRIN)

General Manager: D. Claudio Fernández Acevedo

Associates

L'Urederra currently counts with a great number of partners such as companies, public organisations, financial entities and research centres

GRL, ACTIVOS INDUSTRIALES, S.A.

HIDRÁULICA, DEPURACIÓN Y ECOLOGÍA, S.L.,

ACCIONA ENERGÍA, S.A.

BODEGAS NAVARRSOTILLO, S.C.

ABB AUTOMATIONS PRODUCTS, S.A.

NEUMÁTICOS IRUÑA, S.A.

INYECCIONES TERMOPLÁSTICAS NICOPLAST, S.L.

COMPUESTOS Y GRANZAS, S.A.

NASIKA PRODUCTS S.A.

GOLPAIZBI S.L.

BODEGAS AROA S.L.

CENTRO TECNOLÓGICO NEIKER-TECNALIA

JUNTA MONTE LIMITACIONES AMESCOAS

AYUNTAMIENTO ALLO

AYUNTAMIENTO ARRONIZ

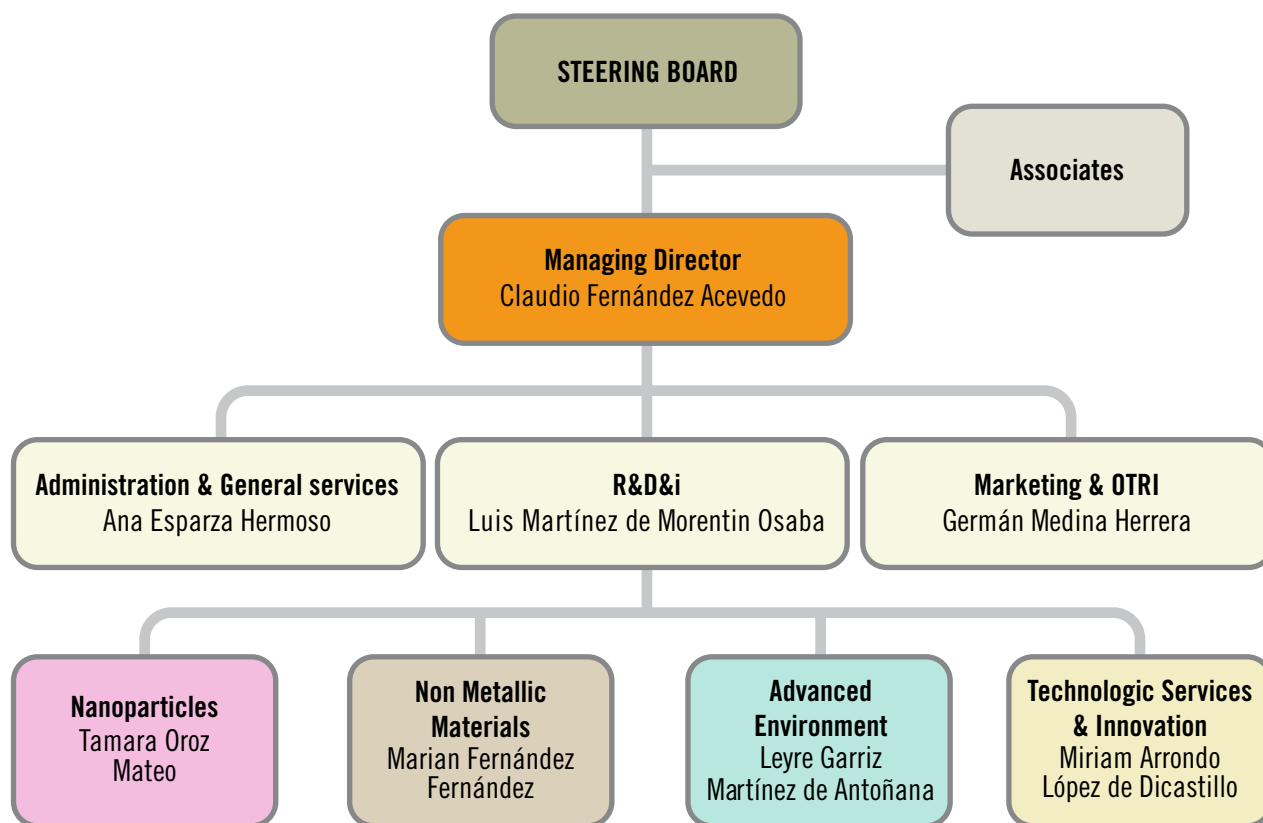
AYUNTAMIENTO DICASTILLO

CAJA NAVARRA

CAJA LABORAL

CAJA RURAL DE NAVARRA

LÀ CAIXA



The Steering Board is the maximum government agency of L'Urederra and the responsible of laying down the strategic lines of the Centre. The composition of the Steering Board is largely fixed by the general assembly of associates. The first executive of the Centre is the Managing Director, designated by the Steering board and to which directly reports back. The Managing Director is advised by the Administration and General Services Director, the R&D&i Director and the Marketing and OTRI Director, meeting fortnightly in board of directors.

The Administration and General Services Area includes the administrative and financial direction, the personnel direction and general support services to the technical areas. On the other hand, the R&D&i Area in-

cludes the complete execution of the R&D&i tasks within the six technological lines of the Centre (Nanoparticles, Non Metallic Materials, Fine Chemistry, Advanced Environment, Agroalimentary Sector and Technologic Services and Innovation), comprises also the proposal of specific purchases to be made to R&D&i which will be subject to the approval by the Administration and General Services Area. Finally, the Marketing and OTRI Area is primarily responsible of carrying out the necessary market actions for the hiring of transfer technology activities, as well as to promote through different ways the exploitation of the results of the own research projects performed by the Centre. The Marketing and OTRI Area will count for this purpose with the contribution, where needed, of the R&D&i Department.

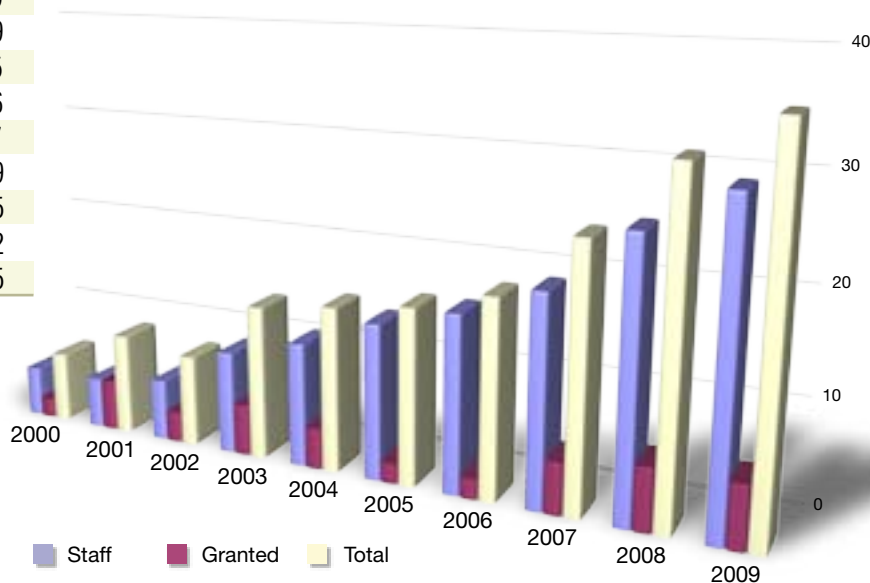
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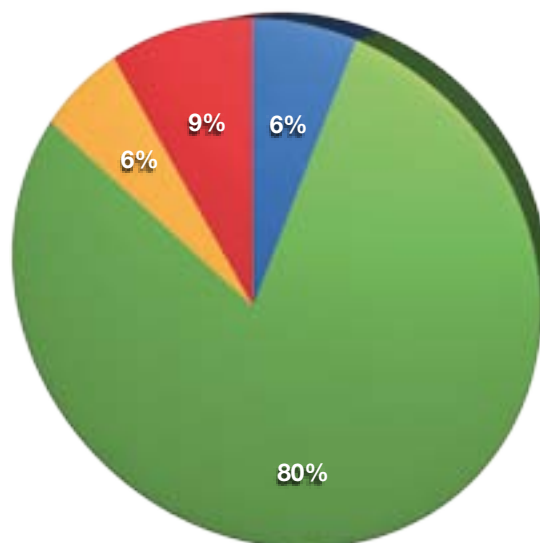
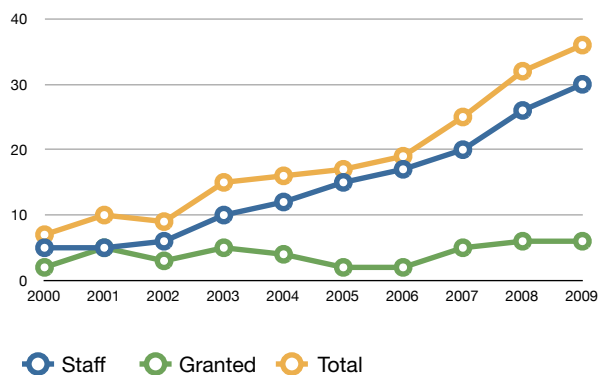
HUMAN RESOURCES

Evolution of staff hiring

	STAFF	GRANTED	TOTAL
2000	5	2	7
2001	5	5	10
2002	6	3	9
2003	10	5	15
2004	12	4	16
2005	15	2	17
2006	17	2	19
2007	20	5	25
2008	26	6	32
2009	29	6	35



10



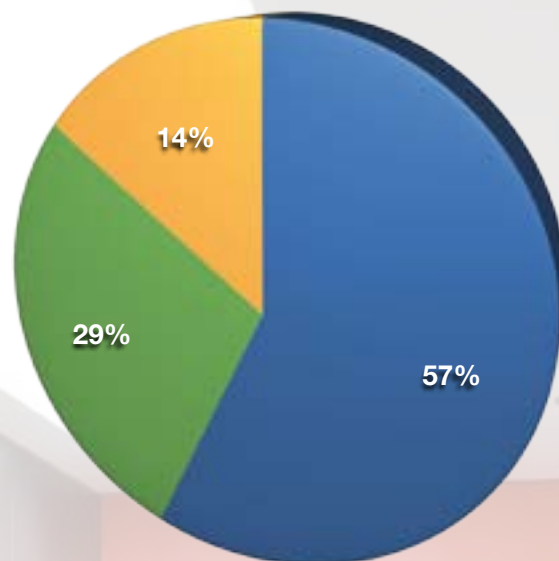
Degree

DEGREE	
Doctor	2
Grade	28
Medium Grade	2
Secondary Vocational Training	3



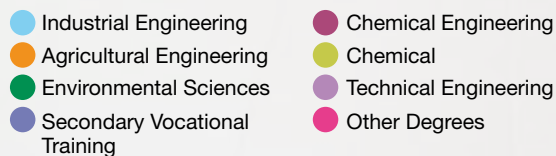
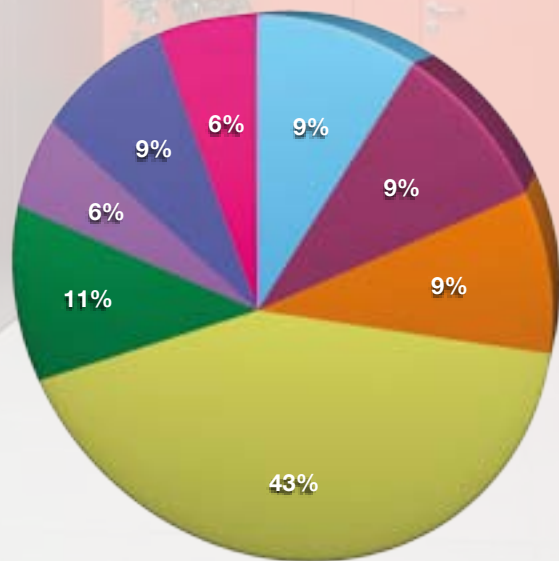
Labour situation

LABOUR SITUATION	
Permanent contract	20
Eventual contract	10
Granted	5



Degrees

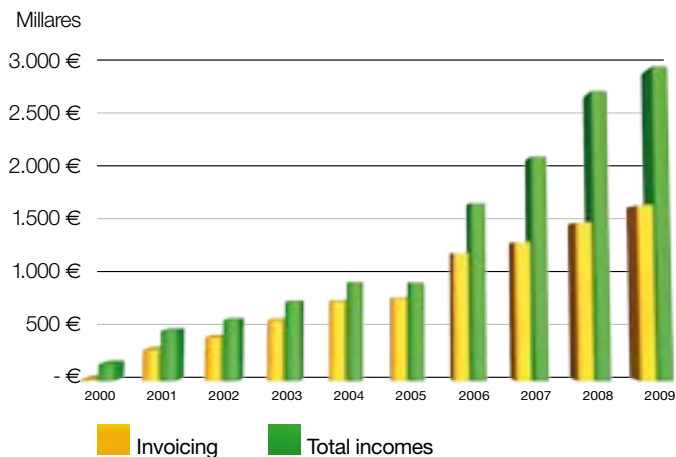
DEGREES	
Industrial Engineering	3
Chemical Engineering	3
Agricultural Engineering	3
Chemical	15
Environmental Sciences	4
Technical Engineering	2
Secondary Vocational Training	3
Other Degrees	2



FINANCIAL SUMMARY

Evolution of incomes

	INVOICING	TOTAL INCOMES
2000	20.692,85	160.836,85
2001	288.221,36	460.555,58
2002	397.949,76	556.956,99
2003	553.232,58	719.107,60
2004	723.926,32	894.488,64
2005	731.022,39	891.766,95
2006	1.161.703,40	1.616.314,86
2007	1.257.975,80	2.040.545,62
2008	1.435.862,23	2.644.707,60
2009	1.702.452,63	2.870.188,03

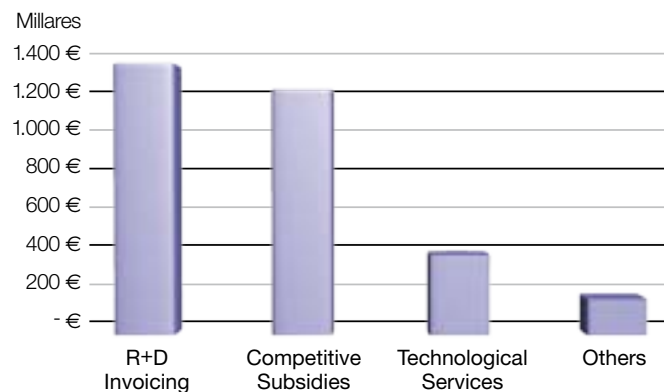


Total incomes and invoicing

	YEAR 2006	YEAR 2007	YEAR 2008	YEAR 2009
TOTAL INCOMES	1.619.314,86 €	2.040.545,62 €	2.644.707,60 €	2.870.188,03 €
INVOICING (% of total incomes)	1.161.703,34 € (68%)	1.106.863,31 € (63%)	1.435.862,23 € (55%)	1.702.452,63 € (59%)
% R+D (of invoicing)	65%	73%	63%	69%
% R+D (of total incomes)	83%	86%	82%	79%

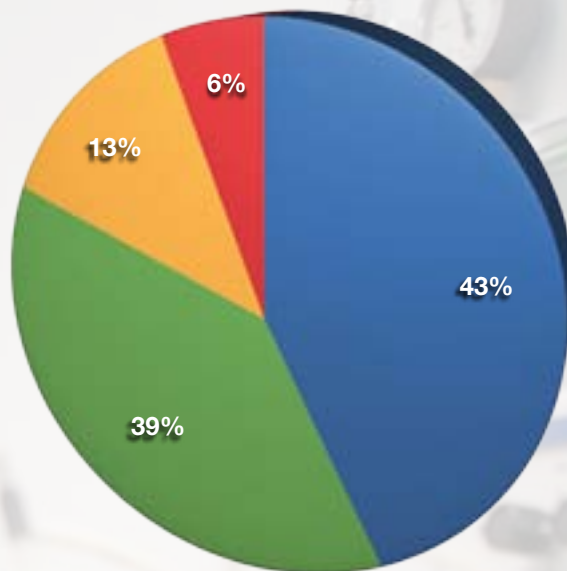
Source of Funds 2009

	INCOMES
R+D Invoicing	1.228.909,14
Competitive Subsidies	1.111.433,67
Technological Services	364.658,50
Others	165.186,72
	2.870.188,03



Source of Funds 2009 %

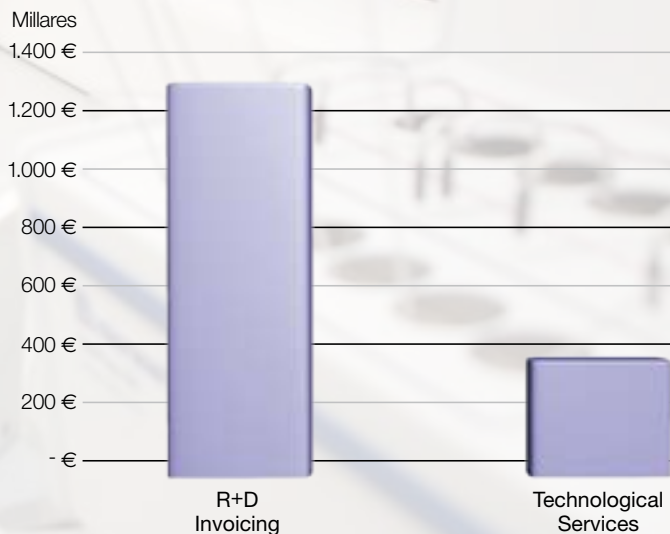
R+D INVOICING	1.228.909,14	0,43
Competitive Subsidies	1.111.433,67	0,39
Technological Services	364.658,50	0,13
Others	165.186,72	0,06
	2.870.188,03	



● R&D Invoicing ● Competitive Subsidies
● Technological Services ● Others

Source of Funds 2009 Invoicing

R+D Invoicing	1.228.909,14
Technological Services	364.658,50
	1.593.567,64



I.- OWN FINANCING	62.620,00
Partners fee	9.005,00
Others	53.615,00
II.- R&D INCOMES FROM PUBLIC ADMINISTRATIONS	1.017.081,37
a) NON-COMPETITIVE R&D FUNDS (agreement) (%total)	0,00
Regional Administration	0,00
National Administration	0,00
European Community	
b) COMPETITIVE R&D FUNDS	1.017.081,37
Regional Administration. Generic or basic	88.786,45
Regional Administration. Cooperation Projects	315.912,74
National Administration. Cooperation Projects	162.013,25
National Administration. Generic or basic	213.329,67
European Community	168.822,62
Other Incomes	68.216,64
III.- PUBLIC FUNDS FOR TECHNOLOGICAL AND TRAINING SERVICES	96.252,30
Regional Administration	96.252,30
National Administration	
European Community	
Research Results Transfer Office (OTRI) programmes	
Others	
IV.- INCOMES BASED ON DIRECT CONTRACTS WITH COMPANIES	1.593.690,97
Incomes of R&D projects directly contracted with companies	1.169.962,18
Incomes of training services	
Incomes of technical assistance (test, etc)	
Incomes of technical services	364.658,50
Otros	59.070,29
V. INCOMES FROM OTHER MECHANISMS OF TECHNOLOGICAL TRANSFER	
Incomes of patents, licenses and intellectual property	
Know-How Transfer	
Creation of Technology-Based Companies	
VI.- OTHERS	18.987,77
Loans	
Financial Incomes	18.987,77
VII.- CAPITAL SUBSIDIES	81.555,62
TOTAL (I+II+III+IV+V+VI+VII)	2.870.188,03

Profit and Loss at december 31, 2009 (euros)

1. Turnover	1.702.452,63
3. Work performed by the company and capitalised	53.615,00
4. Cost of materials and consumables	(884.740,76)
5. Other operating incomes	1.013.577,01
6. Staff costs	(976.189,76)
7. Other operating charges	(222.416,51)
8. Equipment depreciation	(237.717,50)
9. Capital subsidies	81.555,62
12. Other results	

A) PROFIT/LOSS ON ORDINARY ACTIVITIES **530.135,73**

B) FINANCIAL PROFIT/LOSS **6.471,45**

C) PROFIT/LOSS FOR THE YEAR **536.607,18**





Balance Sheet at december 31, 2009 (euros)

ASSETS		LIABILITIES	
A) NET FIXED ASSETS	3.133.697,71	A) EQUITY	3.393.662,55
I. Intangible fixed assets	451.802,79	A-1) Capital and Reserves	2.739.033,48
II. Tangible fixed assets	2.631.377,86	I. Suscribed capital	108.182,18
V. Financial assets	50.517,06	III. Reserves	2.094.244,12
		VII. Profit and loss brought forward for the year	536.607,18
		A-3) Capital subsidies	654.629,07
		B) LONG TERM DEBTS	2.307.975,93
		II. Long term non-bank debt	2.307.975,93
B) CURRENT ASSETS	5.497.015,01	C) CURRENT DEBTS	2.929.074,24
III. Trade debtors	2.200.728,72	III. Short term debts	4.128,17
V. Short term financial assets	1.002.273,93	V. Short term creditors	2.040.305,11
VI. Other current assets	14.466,67	VI. Anticipated incomes	884.640,96
VII. Cash at bank and in hand	2.279.545,69		
TOTAL ASSETS	8.630.712,72	TOTAL LIABILITIES	8.630.712,72



Technological Research Lines

• NANOPARTICLES • NON METALLIC MATERIALS • ADVANCED ENVIRONMENT

Nanoparticles

- Synthetic Nanoparticles: Production and physico-chemical treatment of simple and complex/mix nano-oxides for multisectoral applications, with a production capacity of 1 kg / h.
- Mineral Nanoparticles: Physico-chemical treatment, functionalization and incorporation into polymeric and elastomeric materials.
- Nanoproducts: Innovative industrial product development based on both synthetic and natural nanoparticles.



Non metallic materials

- Advanced processing of plastics: Extrusion (single and twin screw), Coextrusion -blowing, injection and injection-reaction.
- Synthesis of functional organic compounds: Development and synthesis of specific organic compounds with different functionality (commercial reactants modified, oligomeric reactants, organometallic compounds) and anchor for the treatment of hybrid materials organic / inorganic, and further escalation at semi-industrial level.
- Multi-compound intelligent materials and environmentally-friendly materials: Sensorised materials based on nanoparticles, Fluids or magnetorheologic solids based on magnetic nanoparticles, halogen-free fire-resistance plastic compounds, new polymers and precursors based on specific biomass formulation processes instead of petroleum.

Advanced Environment

- Nanoparticles applied to the environment: Nanocatalysts for environmental reactions, Water and gas depuration.
- Sustainable chemistry: Production of specific monomers in order to obtain biomaterials.
- Depuration of highly polluted waters: design and development of innovative technologies for high polluted effluent depuration (leachate, industrial waste water, etc.).
- Highly efficient sorbents: Sorbents based on rubber matrices y biomaterials for hydrocarbons absorption.
- Reduction, recycling, and revaluation of inorganic wastes: composting, biomethanisation, revaluation of animal fats to obtain biodiesel (organic wastes); recycling and revaluation of plastic fraction from vehicle windscreens (PVB), polyolefin films, etc. (inorganic wastes).





Relevant Projects by R&D lines

Relevant Projects by R&D lines

NANOPARTICLES

■ “Development of an innovative catalysis system for the automotive sector based on advanced nanoparticles” (NANOCAV)

Partners: Centro Tecnológico de Automoción de Galicia (CTAG), Instituto Tecnológico Metalmecánico (AIMME) y Instituto de Cerámica y Vidrio (ICV-CSIC) y Centro Tecnológico L'Urederra.

File Number: PID-560410-2009-3

Total Budget: 920.747 €

Objective: Develop a new concept of automotive catalyst more efficient and which permits to achieve a decrease of the volatile emissions of the exhaust gases from the vehicles through the redesigning and the optimization of the devices used currently in the exhaust systems of the vehicles. The improvement of this system for emission reduction is based on the use of advanced nanoparticles and alternative materials which enhance the catalytic activity.

■ “Large scale production of tailored nano-oxides by advanced, high-output, high-versatility Flame Spray Pyrolysis” (ADVANCE-FSP)

Partners: Eidgenössische Technische Hochschule Zürich (Switzerland), Universität Bremen (Germany), National Technical University of Athens (Greece), Engineering Surfaces Ltd (United Kingdom), Kingston University (United Kingdom), VTT Technical Research Centre (Finland), Bildu Lan S.Coop. (Spain), Hecht Anlagenbau GmbH (Germany), Tecnología Navarra de Nanoproductos S.L. (Spain), TÜV Süd Industrie Service GmbH (Germany), Johnson Matthey Plc (United Kingdom) and Centro Tecnológico L'Urederra (Spain)

File Number: NMP3-SL-2009-2288885

Total Budget: 4.289.871 €

Objective: Designing a nanoparticle production system at industrial scale and with very small particles sizes, around 4 nanometres. The final demonstration of this technology will take the development of an advanced catalyst for exhaust pipes in the automotive sector. This catalyst will be based on a nano-oxide of cerium and zirconium over which they will be deposited, depending on the cases, platinum and palladium. The project also includes the production of triple systems cerium-zirconium-platinum and cerium-zirconium-palladium, thus simplifying the manufacturing process.

■ “Application of the nanotechnology to high performance micro-mortar”

Company: Circa S.A.

File Number: IDI-20090653

Subcontracting L'Urederra: 193.500 €

Objective: Obtain a higher performance panel of micro-mortar than the current one, with the aim of achieving a high technology product, with a minimum energetic Consumption in all stages of its life cycle and providing an alternative of sustainable construction. Among the properties intended to modify and improve stand out the mechanical, electrical and insulating properties, the thermal conductivity, finishes and anti-graffiti properties, the impermeability and the energetic efficiency.



NON METALLIC MATERIALS

■ “Development of an additive technology for the production of technical polymers with high value-added” (FADPOL+)

Partners: Centro Tecnológico L’Urederra and el Instituto Tecnológico Metalmecánico (AIMME)

File Number: PID-560300-2009-5

Total Budget: 348.869 €

Objective: Develop a new additive fabrication technology that permits the manufacture of parts of two different polymers simultaneously, offering the option to manufacture monopolymeric or bipolymeric products and development and manufacturing of high value polymers designed to be processor using that technology.

■ “Development of an innovative, cost-effective technology to produce halogen-free, high-performance flame retarded polyolefins (FLARETPOL)

Partners: Polymer Laboratories Ltd (United Kingdom), Dead Sea Bromine Compounds Ltd (Israel), Perplastic SL (Spain), Laviosa Chimica Mineraria Spa (Italy), Coficab Lda (Portugal), Firat Plastik AS (Turkey), Kunststofftechnik Sachsen GmbH (Germany), Institut für Polymerforschung Dresden (Germany), Fundación Gaiker (Spain), Rapra Technology (United Kingdom) y Universita Degli Studi di Milano (Italy) and Centro Tecnológico L’Urederra (Spain)

File Number: STREP NMP3-CT-2005-516998

Total Budget: 3.608.205 €

Objective: Through interfacial engineering techniques and the establishment of a symbiosis between micro- and nano reinforcements, it is intended to achieve the production of materials composed of magnesium hydroxide-nanoparticles-polypropylene totally resistant to flame (class V0) and with mechanical properties never reached until now, subsequently validating this technology with the manufacturing of techno-economically optimized prototypes of the developed material. This innovation represents a breakthrough in the field of flame retardant plastics, and can also largely be extrapolated to sophisticated areas of composites manufacturing and to the general improvement of polymeric systems with inorganic fillers, due to the high potential and high versatility of the interface modifiers that will be designed, synthesized and used.



■ “Research and cooperative development of innovative and cost efficient technology for the production of high performance nano-reinforced polypropylene compounds destined to the automotive and appliance sector” (NANOCOOP)

Company: Compuestos y Granzas S.A., Inyecciones Termoplásticos Nicoplast S.L., Embega S Coop, Maier Navarra and Centro Tecnológico L’Urederra

File Number: FIT-30000-2007-173, IIM010482.R11

Total Budget: 1.958.006 €

Objective: Develop an industrial technology suitable for the production of polypropylene-based nanocompounds using montmorillonite as nano-reinforcement, so that new material are obtained with mechanical resistance, flame resistance, rigidity, abrasion resistance and improved dimensional stability at a reasonable cost, validating this technology through the production and testing of technical components for high added value sectors such as appliance and automotive industry.

Relevant Projects by R&D lines

ENVIRONMENT

■ “Design of a modular system of highly contaminated leachate purification”

Partners: Centro Tecnológico L'Urederra

File Numbers: IIPQ010735.R11

Total Budget: 190.200 €

Objective: Develop an innovative system for heavily contaminated waste water from landfill (leachate) purification that comprises a flexible and intelligent modular system, which permits to eliminate the pollution load (BOD and COD reduction in particular) and it will be adaptable depending on the results obtained from the analysis of pollutants. The technological innovation of the proposed development lies in the flexibility of the system to select the relevant treatment regimens in different waste water whose composition is variable in contaminants and concentrations.

■ “Research project for the promotion of biodiesel in Spain” (PiLBE)

Companies: Repsol YPF SA, Comercial agroalimentaria Valparaiso SL, Koiposol semillas SA, Bionor transformación SA, Biogas Fuel Cells SA, Elcogas SA, Industrias Suescun SAU, Acciona Biocombustibles, Tecnicas Reunidas SA, Industrial Química Lasem SA, Facet Iberica SA, Robert Bosch España SA, Guascor investigación and desarrollo SA, Tifell electro solar SA, Sacyr SAU.

File Number: CENIT - 2006-05052

Total Budget: 22.925.200 €

Subcontracting L'Urederra: 309.000 €

Objective: Contribute to the expansion of the use of biodiesel in the national market through a program of R & D, whose activities concern the reduction of production costs and increasing the availability of local raw materials. The subcontracting of L'Urederra by Industrias Suescun SAU focuses on the recovery of waste meat, especially fat with animal origin, integrating them into the biodiesel production chain.

■ “Soil remediation technique for in situ cleaning of soils contaminated with heavy hydrocarbons mixtures” (SORBENT)

Partners: UAB Grota (Lithuania), HIMAL Przedsiębiorstwo (Poland), Clean Biotec S.L.L. (Spain), Wild Berry Environmental Ltd. (United Kingdom), Dekonta a.s. (Czech Republic), DGE Group A/S (Denmark), UAB Biocentras (Lithuania), Danish Innovation Institute (Denmark) and Centro Tecnológico L'Urederra.

File Number: FP7-2008-1-SMEs-232533

Total Budget: 1.392.639 €

Objective: Develop a soil decontamination technology at low cost and high efficiency using in-situ bio-remediation techniques to remove the oils for which it will be developed and manufactured a new sorbent produced from cellulose waste with high absorption capacity, and on which it will be developed new bacteria capable of biodegradation of different common types of oil. These bacteria fractionate the long hydrocarbon chains of the contaminant, thereby achieving shorter chain molecules which are then absorbed by plants in a phyto-extraction process.



EUROPEAN PROJECTS

In spite of its youth, Lurederra is an active participant of research and development European consortiums, organizing and leading projects of European Union Research and Development Framework Programme, and having an important role in many other international research activities.

PROJECT	REFERENCE	TOTAL BUDGET €	LUREDERRA BUDGET €	STATUS
“Modular purification system for heavily polluted leachate” (PURILEACH)	COOP-CT-2004-508698	764.000	150.137	Coordinator in European consortium
“Development of an innovative, cost-effective technology to produce halogen-free, high-performance flame retarded polyolefins” (FLARETPOL)	STREP-NMP-TI3-516998	3.608.205	415.600	Partner in European consortium
“Customised nanocomposites based on rubber matrices for high demand applications” (NANORUB)	COOP-CT-2005-018003	1.306.088	153.840	Coordinator in European consortium
“Primary recycling of polyolefin-mixed films for high-added value applications within the blow-moulding industry” (RECFINMIX)	COOP-CT-2006-032766	1.109.400	241.500	Coordinator in European consortium
“Soil remediation technique for in situ cleaning of soils contaminated with heavy hydrocarbons mixtures” (SORBENT)	FP7-2008-1-SMEs-232533	1.392.639	139.476	Partner in European consortium
“Large scale production of tailored nano-oxides by advanced, high-output, high-versatillity flame spray pyrolysis” (ADVANCE-FSP)	NMP3-SL-2009-2288885	4.289.871	794.040	Coordinator in European consortium
“Toxicological impact of nanomaterials derived from processing, weathering and recycling of polymer nanocomposites used in various industrial applications” (NANOPOLYTOX)	FP7-NMP-ENV-2009	3.161.850	272.688	Partner in European consortium

EXPLOITATION OF RESULTS

L'Urederra exploits its research results through patents or the creation of Technology-based Companies

Patents

Despite a big part of the activities of L'Urederra are carried out under contract with companies and specific economical agents, there are a great number of cases where L'Urederra develops technology acquisition activities with important future prospects; taking into consideration in each case the market conditions to decide which technology would be most beneficial and easy to transfer to the industrial sector.

In spite of the youth of L'Urederra, the results obtained in the technology acquisition processes completed by the Centre have enabled to be applying for the following patents:

—PCT Patent: “Procedure for the recycling of PVB of laminated glass.” Expedient number PCT/ES2008/000175. The application was made the 27th of March 2008, having received already a favourable report from the Spanish Office of Patents and Trademarks for international search.

—PCT Patent: “Hyperbranched polymers based on cyclodextrine and poly(amidoamine) for the controlled release of insoluble medicines.” The application was made the 11th of June 2007. With number PCT/EP2008/004624, it is extended to Europe, United States, Japan, and Canada



Technology-Based Companies

L'Urederra in its role of agent of social and technological development in the service of companies and the general society considers strategic the creation of Technology-Based Companies, according to the knowledge and the experience compiled in the Centre. Due to its innovation level, some developments aren't easy to implement within the current industrial structure; however, the Centre always plays a symbiotic role with the business fabric.

Out of one of the research lines related to nanotechnology, L'Urederra has created its own spin-off:

NAVARREAN NANOPRODUCTS TECHNOLOGY S.L. (TECNAN)

Navarrean Nanoproducs Technology S.L." (TECNAN) was created the 21st of December 2007 by L'UREDERRA Technological Centre and SPRIN (Society for Promotion of Investments and Infrastructures of Navarre), with the aim of producing and commercialising at industrial scale synthetic nanoparticles for multi-sectoral applications.

TECNAN is based on an extremely flexible production system and it enables the one-step production of highly complex nanoparticles with a wide variety of applications. For example: catalysts for the automotive industry, energetic catalysts, gas sensors and photo-catalysis or illumination among others.



EQUIPMENT

For the development of its activities, L'Urederra has designed an equipment to enhance the direct transfer of the technologies developed in the centre to the industrial sector. In this sense, L'Urederra is endowed with first-line instrumentation laboratories and pilot scale productive systems. It is worth to mention the existing semi-industrial lines for plastic processing, high-capacity chemical reactors and semi-industrial nanoparticle production line based on high-versatility pyrolysis, the largest in Europe using this very advanced technology. The equipment currently available consists on

- Particle production system by pyrolysis appropriated for nanoceramic and metallic nanoparticle production, with a 1kg/h production capacity

- Laboratory scale nanoparticles synthesis system with a 100g/h capacity

- Iqaplap E-30 co-extrusion line for film blowing formed by three extrusion machines

- Mapre E2/66/100 industrial twin-screw extruder

- Werner&Pleiderer twin-screw extruder with a 45 mm diameter R.L 1:16 D, 20 Kw of power, degasification system and vacuum pump.

- BATTENFELD SHK65 reaction-injection moulding machine (RIM and R-RIM)

- Sandretto Injection machine

- Continuous separation-recycling system for plastic films with production capacity of 150 kg/h

- Iqaplap laboratory rollers

- Agme PH-40 hot-plate press with a 40 Tn compression force

- Hellweg 240/200 mill

- DYNO-MILL ECM Plus exfoliation-milling-coupling system

- Micromeritics Tristar II 3020 multi-sample specific surface analyser

- Versatile 2, 5 and 100L borosilicate glass (3.3.) reactors

- Planetary mono mill Pulverisette 6

- Instron 3365 universal test machina

- Thermo Scientific Trace GC Ultra gas chromatograph

- IR-FTIR spectrophotometer Varian

- UV-VIS spectrophotometer Thermo

- Kjeldahl UDK 127 distiller

- Unitronic Orbital Precision bath with stirring and electronic regulation

- 23L autoclave

- Eppendorf 5702 Centrifuge

- 1,200°C Mod 12-PR/300 digital muffle furnace

- Incubator heaters

- Motic DMW-B1-223ASC optical microscope

- Additional analysis equipment, including (VOC's) volatile organic compound capture system, BOD detector, PH-meter, Conductivity-meter, Oximeter and Sound level meter.

NETWORKS AND PLATFORMS

Technological Networks

RETECNA, Navarrese Technological Network

Cooperation network of the Navarrese technological agents in order to generate synergies and complementarities, to develop projects and also interact with other networks and agents from the Science–Technology–Company European system with the aim of promoting the improvement of competitiveness within the industrial fabric of Navarre on the basis of R&D&i activities



PYMERERA, Navarrese node Pymera network

A network which promotes the participation of Spanish SMEs within R&D&i Framework Programmes of the European Union. L'Urederra takes part in this network as a support for the Navarrese node, ANAIN.

EIBT's Network

A Navarrese network which promotes the creation of Technology-Based Companies.

FEDIT, Spanish Federation of Innovation and Technology Entities

Fedit, as the representative of the Centres, works for the promotion of innovation, research & technological development in companies and also in the society. Currently, 67 technological centres integrate this organisation and L'Urederra is part of it since January 2008.



NANOSPAIN, Spanish Nanotechnology Network

A network directed towards the promotion of Spanish science and technology, through the international management that enables pushing new commercial applications related to nanotechnology.

RICAI, Iberic Network of Innovation Supporting Centres

A network oriented towards the management of innovation within companies or institutions, of technology politics, prospective and technological invigilation, R&D&i management and new business management models.

Tecnological Platforms



SUSTAINABLE CHEMISTRY (SUSCHEM SPAIN)

A platform that works on the assurance of the long-term competitiveness of the sector in Spain by the promotion of innovative global actions which have the support of industry as well as the support of the management from the beginning.

BIOPLAT, Spanish platform of BIOMASS

A platform that gives a suitable frame for developing coordinated activities led by industry in order to increase the commercial implantation of this energy resource as well as to improve corporate competitiveness based on this raw material.



INDUSTRIAL SECURITY (PESI)

A platform that intends to join efforts in order to achieve improved and more economic technological applications to solve corporate needs related to security, especially for its application within the field of SMEs.

CONSTRUCTION (PTEC)

Spanish platform dedicated to support the building sector within research, development and innovation processes which have the aim of searching new materials, constructive processes, technologies and designs.

SERTEC, Spanish Platform for the Automotive Component Sector

Instrument of development, control and coordination of initiatives among the different elements implicated within the automotive sector in Spain.

PACKNET, Spanish platform of Packaging

Instrument of development, control and coordination of initiatives among the different elements implicated within the packaging sector in Spain.

NANOMED, Spanish platform of Nanomedicine

Initiative that pretends to join research, industry and administration principal Spanish agents with the aim of promoting a common strategy in a multidisciplinary field.

