



Rafael Barrenechea. Presidente de la Alianza Tecnológica IK4
President of the Technological Alliance IK4

IK4

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...provechar
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...expertise
... centros de
... impulso
...o nuestro

In a very difficult economic environment, IK4 Research Alliance faces 2009 knowing it is a key year for consolidation to become the reference point for the techno-science world. This is the time to take advantage of the existing synergies between the alliances seven centres, in order to continue reinforcing Basque Science Systems, Technology and Innovation. Since its inception at the end of the 90's, the alliance has grown steadily and consistently.

The IK4 perspective is clear, we believe through our expertise in science and technology across our alliance centres, we can add to an already growing momentum and develop on our history of excellence to develop the full potential of companies, and to create growth and wellbeing within society.

...y believe that we must look to the future with
...sm and view the alliance as a key opportunity.
...intention is share knowledge with Basque
...panies and in doing so generate added value.
...direct result, o our companies will be more
...competitive in the future.

...potenciar la
...empresa vas
...valor añadido
...futuro más c

Admittedly, IK4 faces great challenges; the transference of knowledge to Basque Companies, the ongoing collaboration with Institutions and all those involved in the improvement of the Basque Science System, Technology and Innovation: Universities, Cooperative Research Centres, and R&D companies.

...Por tanto, lo
...ta ahora
...mismo IK4 son intensificar esta transterencia de conocimiento hacia el tejido empresarial vasco, y colaborar con las instituciones y el resto de agentes de mejora del Sistema Vasco de Ciencia, Tecnología e Innovación: las Universidades, los Centros de Investigación Cooperativa (CIC) y las Unidades de I+D Empresariales.

Without question, I think IK4 must double its efforts to increase added value and to improve the competitiveness of our companies to create growth for this country.

Creo que desde IK4 tenemos que redoblar esfuerzos por dar mayor valor añadido y mejorar la competitividad de las empresas, y, en definitiva, crear riqueza para este país.

Rafael Barrenechea



José Miguel Erdozain. Director General de la Alianza Tecnológica IK4 / Managing Director of the Technological Alliance IK4

En sus cinco años de andadura, IK4 ha alcanzado ya un importante peso específico en el panorama tecnológico vasco. Y 2008 ha sido un año muy importante para la Alianza, tanto en el aspecto cuantitativo, ya que el año pasado obtuvimos unos ingresos conjuntos de los centros de más de 80 millones de euros en I+D+i; como cualitativo, porque nuestros centros están presentes y lideran muchos de los más relevantes proyectos de investigación en el ámbito vasco, estatal y europeo.

Así, a día de hoy, IK4 participa en 58 proyectos del VII Programa Marco de investigación de ámbito europeo, y lidera doce de ellos, con lo que ha conseguido un volumen de retorno económico de 22,6 millones de euros. Los proyectos europeos que desarrolla IK4 se sitúan en áreas estratégicas como las nanociencias, las tecnologías de la información y la comunicación, las ciencias de la salud, el medio ambiente, el transporte o la energía.

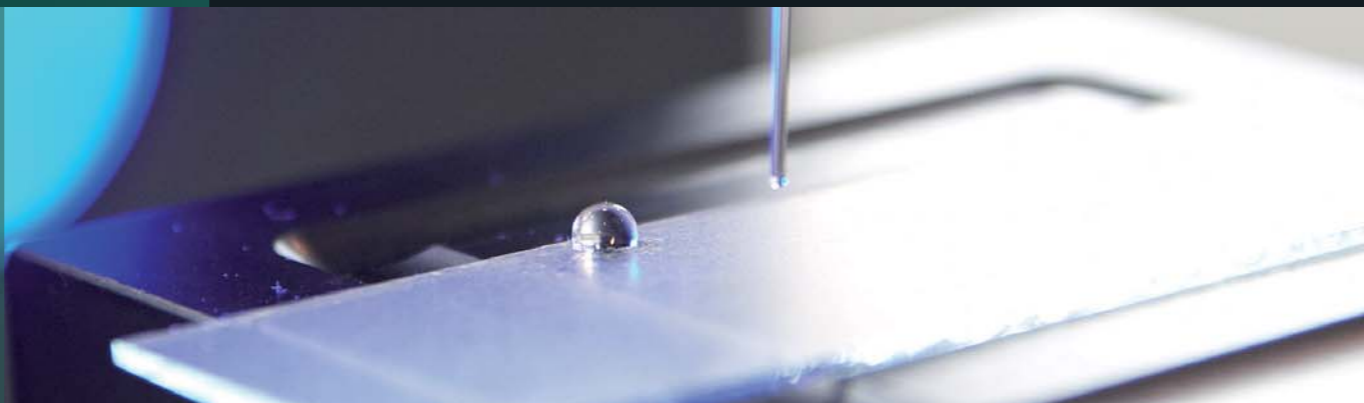
La activa participación de IK4 en los principales programas de investigación de las Administraciones Públicas pone de manifiesto el papel de los centros tecnológicos de la Alianza como antena tecnológica de empresas líderes en su sector. Nuestra cercanía a ellas y nuestra aportación en términos de transferencia orientada a resultados nos convierte en socios tecnológicos preferentes. Y así nos lo reconocen las más de 1.500 empresas que conforman nuestra cartera de clientes privados. Seguir contando con su confianza es nuestro principal reto.

Over the past five years, IK4 has successfully become a point of reference in the Basque Technological Spectrum. From a growth point of view, 2008 has been a very important year for the Alliance. As a group, our revenue was more than 80 million Euros in R&D, from a quality perspective, at present our centres lead many relevant research projects in the Basque, Iberia and European Maps.

As of today IK4 is involved in 58 projects from the VII European Research Projects. The alliance acts as project leader on 12 of this grouping. This has resulted in a return revenue of 22.6 million Euros. The European projects that IK4 focuses on are in the fields of Nanoscience, information technologies and communication, healthcare, environment, transport energy.

The active participation by IK4 in the main research programs conducted by Public Administrations, illustrate clearly the importance of the technological centres in the Alliance and act as a technological antenna for leading companies in this sector. Our contribution and results driven policy make us the preferred technological associate. More than 1500 private clients believe the alliance is the right choice, which is why they continue to place their confidence in us. Maintaining this key client trust within a results driven environment remains one of our key focuses.

José Miguel Erdozain



Enfoque Científico-Tecnológico: Unidades y Equipos Scientific-Technological Approach (Units and Teams):	CEIT	CIDETEC	GAIKER	IDEKO	IKERLAN	TEKNIKER	VICOMTECH
Unidad Medio Ambiente Environment	●	●	●				
Unidad Energía Energy		●			●	●	
Unidad Gestión y Producción Industrial Industrial Production and Management				●	●	●	
Unidad Biotecnología Biotechnology		●	●				
Unidad Micro-Nanotecnología Micro-Nanotechnologies	●	●	●	●	●	●	
Unidad Mecatrónica Mechatronics	●			●	●	●	
Unidad Tecnologías de Información y Comunicaciones Information Technologies and Communications	●			●	●	●	●
Unidad Materiales y Procesos Materials and Processes	●	●	●	●		●	



- 7 Centros tecnológicos / Technological Centres
- 9 Sedes / Headquarters
- 140 Empresas y entidades en organos de gobierno / Companies and Government entities
- 1.162 Profesionales / Professionals
- 20% Doctores / Doctors
- 42 Patentes en curso / Active patents

80,4 M€ ingresos
80,4 M€ Global Turnover

52% Empresas 52% Companies	22% Gobierno Vasco 22% Basque Government	13% AGE 13% Central Government	12% UE 12% EU
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1% Diputaciones Forales
1% Provincial Council

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ANNUAL REPORT

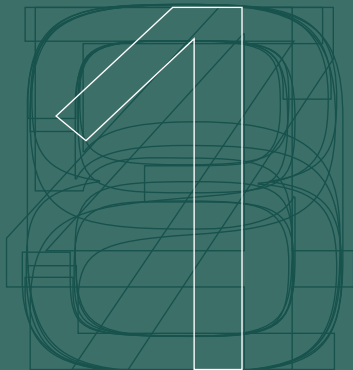
2008

2008ko

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ANNUAL REVIEW

EKITALDIAREN ERREPASOA

As Managing Director of IDEKO, I would like to welcome you to this review of what has happened in 2008.

I would like to begin by saying that we have had a very good 2008, since we have made great steps forward in our mission to contribute to technological improvements in the company structure, and at the same time, we gained the capacity to deal with the future.

IDEKOko Zuzendari Nagusi naizen aldetik ongi etorria eman nahi dizuet 2008ko gure ibilbideari egingo diogun errepasso honetara.

2008a urte bikaina izan dela esanez hasi nahi nuke. Izan ere, aurrera egin dugu enpresaren arloan hobekuntza teknologikoan laguntzeko dugun misioarekin eta aldi berean etorkizunerako prestatu gara.



The year saw a deterioration in the general economic situation, and this is having a great impact on company affairs. In spite of this, many companies have continued to choose innovation as a key factor for the future, and have worked closely with IDEKO on their R&D&I. In fact, and in line with our long history of collaboration and technology transfer, we have worked on several agreements and collaboration projects with companies that have helped to greatly increase the number of projects contracted.

In the field of research and training, we have developed a broad programme of research and development in specialist fields that are key to the future, and these have increased our preparation and knowledge while, at the same time, swelling the number of patents we hold. In this section, it is important to highlight the setting up of two new laboratories: one for laser application and the other for automating the manufacturing of parts made from composite materials. These two laboratories, together with more researchers, will enable us to give a strong boost to our work in research in these fields.

Our labours have been rewarded, as IDEKO won the "Manufacturer of the Year 2008" award in the prestigious international Strategic Manufacturing Awards 2008.

As for Organisation and Quality, I would like to emphasise that, in 2008, we successfully completed the audit for renewing certification and we comply with all the requirements for the ISO 9001:200 standard. The scope of the certification is "to carry out research, development and innovation projects in the fields of Machine Tools and Manufacturing

Technology".

IDEKO has continued in its support for the environment by researching into environmentally friendly manufacturing processes and successfully completing the statutory audit for ISO 14001:2004.

The path IDEKO has followed over the last few years to improve our commitment to our customers can be seen by the increase in production and has its reward in the higher value they place on us in the surveys carried out.

In addition, 2008 was a year when we thought over our strategy, and this has given rise to a new Strategic Plan and a new Research Plan at IDEKO for the period 2009-2012. These plans are the basis of the bright future we are aiming which we will be striving for over the next few years.

To end with, I would like to invite you to share with me the activities carried out and the successful achievement of 2008.

With warm regards



Ramon Uribe-Etxebarria
Managing Director

Ekitaldi honetan, egoera ekonomikoaren okertzeak inpaktu handia eragin du enpresa munduan orokorrean. Hala ere, enpresa askok etorkizunerako apustua berrikuntzan egiten jarraitu du, eta I+G+b alorreko ekintzetarako IDEKOrekin lankidetzan aritu dira. Lankidetzan eta teknologiaren transferentzian dugun ibilbide esanguratsuekin jarraituz, akordio eta lankidetzako proiektu asko garatu ditugu hainbat enpresekin eta horrek, kontratu bidezko proiektuen goraka garrantzitsua ekarri digu.

Ikerketa eta prestakuntzaren alorrean, etorkizunerako gakoak diren espezializazio lerroetan, ikerketa eta garapen programa zabala garatu dugu. Horrek, gure prestakuntza eta ezagutzak areagotu ditu eta era berean gure patenteen saila handitu egin du. Atal honetan bi laborategi berri mar-txan jarri ditugula azpimarratu behar dugu: bata laserraren aplikaziorako erabiliko dena eta bestea material konposatuen piezak fabrikatzeko prozesuen automatizaziorako erabiliko dena. Bi laborategi hauek, eta ikerlari kopuruaren gorakadak, bi linea horietan dugun ikerketa lanari bultzada handi bat ematea ekarriko digu.

Gure lana errekonozitua izan da. IDEKOk "Manufacturer of the Year" sari absolutua lortu du nazioarteko "Strategic Manufacturing Awards 2008" sari banaketa ospetsuan.

Antolaketa eta Kalitatearen arloan, 2008an ISO 9001:2000 Arauaren baldintza guztiak bete eta ziurtagiria berritzeko auditoria arrakastaz gainditu dugula azpimarratu nahi dugu. Agiri honek ondorengo ziurtatzen du: "Makina-Erremintaren eta Fabrikazio teknologien arloan ikerketa, garapena eta berrikuntza proiektuak egitea".

IDEKOn Ingurugiroarekiko apustua egiten jarraitu dugu, ingurugiroarentzat onuragarriak diren fabrikazio prozesuak ikertuz eta ISO 14001:2004 Arauaren auditoria gaindituz.

IDEKOk azken urteetan bezeroarekiko konpromisoan hobetzeko egin duen ibilbidea, produktibitatearen gorakadan eta galdetegi-tako emaitzen hobekuntzan islatzen da.

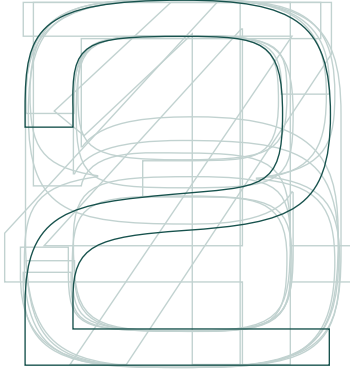
2008 ekitaldi hau, 2009-2012 urteetarako Plan Estrategikoaren eta IDEKO Ikerketa Plan berri baten hausnarketa prozesuarekin batera garatu da. Plan horietan jasota geratu da etorkizunerako dugun ilusioa, eta horretarako lan egingo dugu datozen urteetan.

Amaitzeko, 2008 ekitaldian egindakoa eta lortutakoa ni-rekin partekatzea gonbidatu nahi zaituztet.

Agur bero bat,



Ramon Uribe-Etxebarria
Zuzendari Kudeatzailea

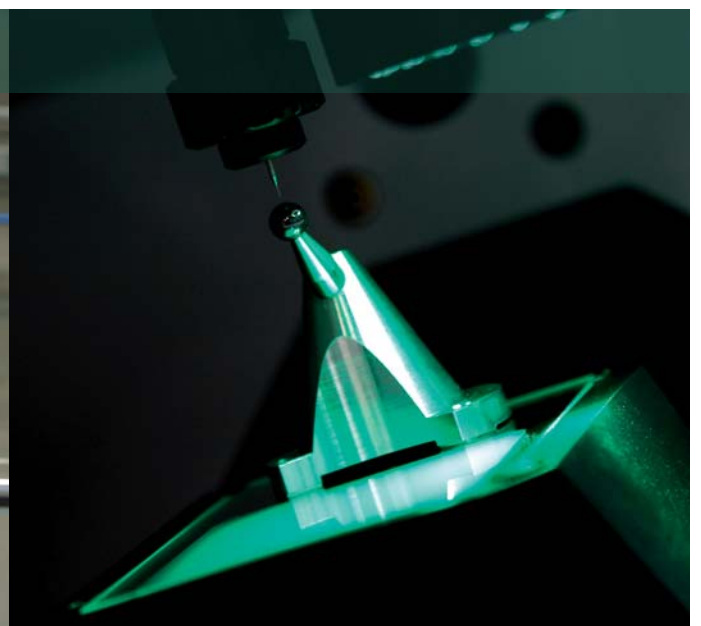


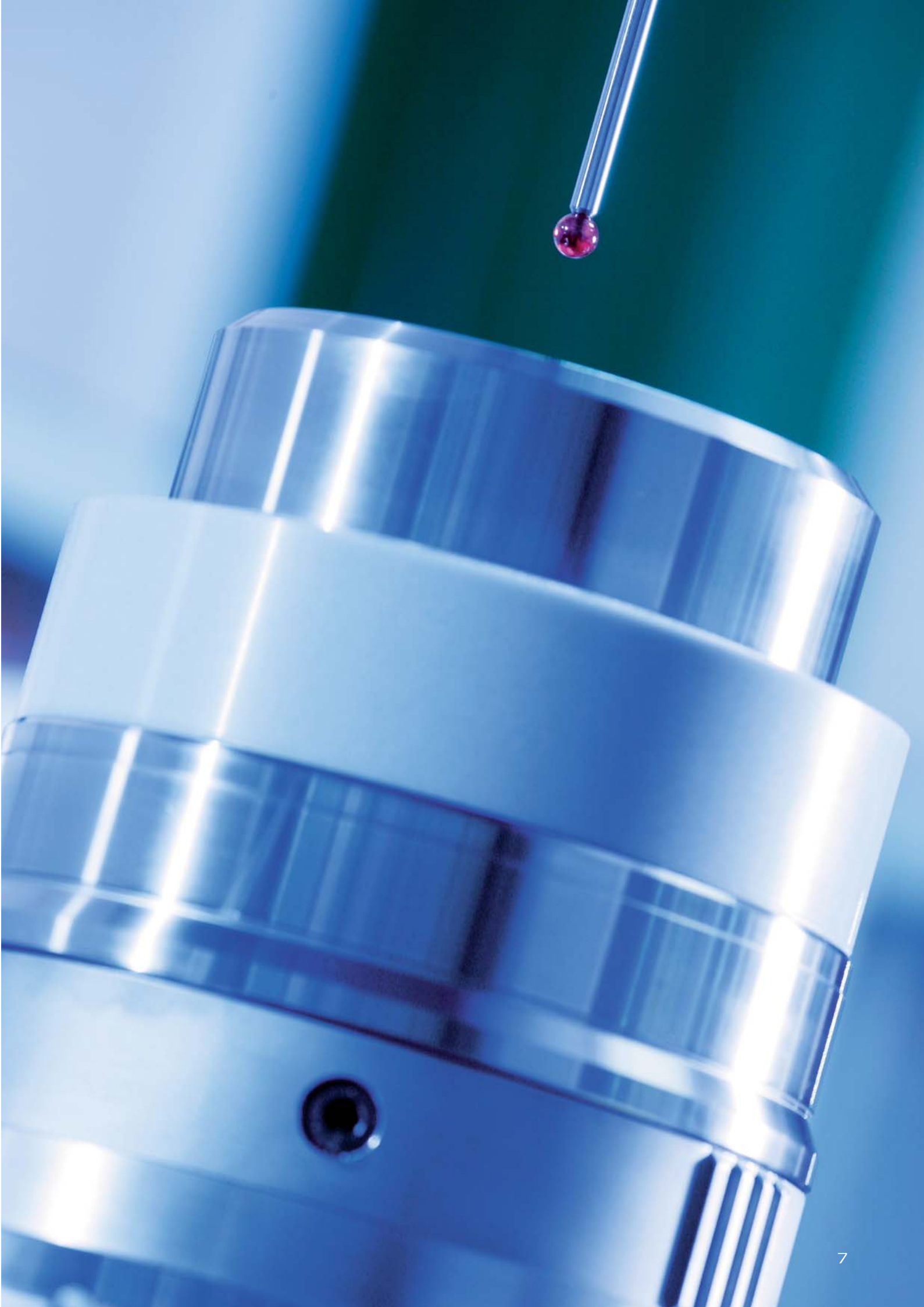
PRODUCTION ENGINEERING

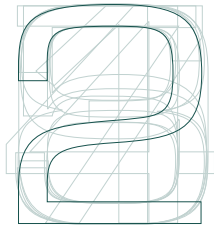
PRODUKTU INGENIARITZA

Innovation as a key element in
competitiveness

Berrikuntza lehiakortasunaren gakoa







As in previous years, managing new products and technology has been the central focus of work in the Department of Production Engineering. To this end, we have continued developing our three specialist lines: Competitive Intelligence, Innovation Management and Managing the Life Cycle of Products.

Starting with Competitive Intelligence, we have taken another step forward in specialisation in the field this year. Several development projects in the Study of Competitive Positioning in Strategic Sectors have enabled us to open a new line of activity that will provide our customers with an overview of their target sectors. This includes everything from a financial analysis of the target sector up to the last technical and technological detail for this, and providing companies with specific lines of action to ensure success when entering these markets. These projects link our experience in Competitive Intelligence to our specialisation as a Technological Centre for Manufacturing Technology and allow us to give greater added value to positioning companies in key sectors in the economy and always opting for technological innovation as a key factor in differentiating ourselves.

Thus, we have continued to work on Competitive Intelligence, as we have done for over ten years, and which enables us to identify opportunities and needs (current and future) of customers on which to base the development of our lines of research, always seeking to transfer the technology of new inventions. To this end, we have continued to develop specific software systems, always seeking to focus the analyst on the tasks with greater added value, according to their high level of specialisation.

Closely bound up with the area of Competitive Intelligence is our line of Innovation Management. From this, we have worked on setting up collaboration agreements with strategic clients for the integral management of their Innovation.

In 2008, we reached 4 integral collaboration agreements with companies in R&D&I, which means that we are developing more than 28 R&D projects

together with setting up mixed work teams. This type of collaboration once more favours aligning our lines of research with the direction our customers are moving in, while at the same time, they form an excellent bridge for transferring the results obtained from our Technological Centre.

Finally, in the field of Managing the Life Cycle of Products, the most innovative activity was the launch of projects within Production Management aimed at transferring very different techniques and methods of production for high production is non-mass producing sectors. We have also worked with the Intelligent Automation Software team in this area on the design and development of solutions for data capture and handling on the operation of machines, staff and fleets for production teams.

Important among these is the PROLIMA project, financed by the European Commission, which ended in 2008 and has provided the machine tool sector with specific techniques and tools for managing the environmental impact of their products.

We have achieved all this with staff that are more highly qualified each year (2 with doctorates and 3 studying for their doctorates) and specialising in our lines of research, while at the same time highly aware of the financial crisis we are undergoing and which is hitting our customers especially hard, and they are the essential entities at the end of the innovation cycle.

Nerea Aranguren
Director of the Product Engineering Department



Aurreko urteetan bezala, produktu eta teknologia berrien garapenaren kudeaketa izan da Produktu ingeniarietza departamentuaren ardatz nagusia. Horretarako gure hiru espezializazio lerroen garapenarekin jarraitu dugu; Inteligentzia Lehiakorra, Berrikuntzaren Kudeaketa eta Produktuen Bizitza Zikloaren Kudeaketa.

Inteligentzia Lehiakorraren arloan urrats bat gehiago eman dugu. Sektore Estrategikoetan Lehiakortasun Posizioen Azterketaren inguruko proiektu desberdinen garapenarekin, jardura lerro berri bat ireki dugu, gure bezeroei helburu dituzten sektoreen ikuspegi global bat ematen diena. Horretarako, aztergai den sektorearen azterketa ekonomikoa egitetik hasi eta azken zehaztapen tekniko eta teknologikoa ere eskaintzen diegu enpresei, merkatu horretan sartu eta arrakasta ziurtatzeko egin beharrekoak proposatuz.

Proiektu hauetan, Inteligentzia Lehiakorrean dugun esperimentziak bat egiten du Fabrikazio Teknologien Zentro Teknologiko gisa dugun espezializazioarekin, eta horrek balio erantsi handiagoa eskaintzen dio gure ekonomiarentzat garrantzitsuak diren sektoreetako posizionamendu estrategiei, kasu guztietan berrikuntza teknologikoan apustu eginez.

Hamar urte baino gehiagoz landu dugun Inteligentzia Lehiakorra lantzen jarraitu dugu. Horrela lortzen dugu gaurko eta etorkizuneko bezeroen behar eta aukerak identifikatzea eta horretara bideratzen ditugu gure ikerketa lerroen garapenak, betiere lortutako sorkuntzen transferentzia bilatuz. Horretarako software sistema espezifikoaren garapenarekin jarraitu dugu, aztertzailearen dedikazioa bere espezializazio mailarekin bat datorren eta balio erantsi handiagokoak diren eginkizunetara bideratuz.

Inteligentzia Lehiakorrarekin estuki lotuta Berrikuntzaren Kudeaketa dugu. Arlo honetan, bezero estrategikoekin elkarlanerako akordioak ezartzeko lanetan aritu gara, Berrikuntzaren kudeaketa integrala egiteko.

2008an mailarik altueneko 4 akordio lortu ditugu, eta horrek 28 I+G proiektu baino gehiagoren garapena egitera era-

man gaitu, lanerako ekipamendu mistoko enpresarekin elkarlanean. Lankidetzaren eredu hauek, beste behin ere gure ikerketa lerroak bezeroarengan orientatzea eragin dute eta Zentro Teknologikotik enpresara emaitzak transferitzeko zubi ezin hobek bihurtu dira.

Azkenik, Produktuen Bizitza Zikloaren Kudeaketa arloan, jarduerarik berritzaileena Produktuaren Kudeaketaren inguruko proiektuak abiaraztea izan da, seriatu gabeko produktzioen sektorerako, produktio handien kasuetan kontrastaturiko teknika eta metodoak eramatera bideratutako proiektuak. Arlo honetan ere Software Inteligentearen ekipoarekin elkarlanean aritu gara, makinaren funtzionamendurako datuen kaptatzea eta kudeaketa egiteko soluzioen diseinuan eta garapenean.

2008an amaitu zen PROLIMA proiektua azpimarratu nahi dut, Europar Batasunak finantzatu zuena eta makina erremintaren sektoreari, produktuen ingurugiro inpaktua kudeatzeko, neurritan egindako teknika eta erremintak eskaini dizkiona.

Guzti hau urtetik urtera kualifikatuagoa den lan talde batean oinarrituz egin dugu (2 doktore eta 3 doktoretzen), gure ikerketa lerroetan espezializatuak eta inguratzen gaituen krisi egoerarekin oso sentsibilizatu daudenak. Krisi horrek gogor eragin baitio gure bezeroari, eta bezeroa bera baita berrikuntzaren zikloa ixteko beharrezkoa den azken aktorea.

Nerea Aranguren
Produktu Ingeiniarietza Departamentuko Zuzendaria

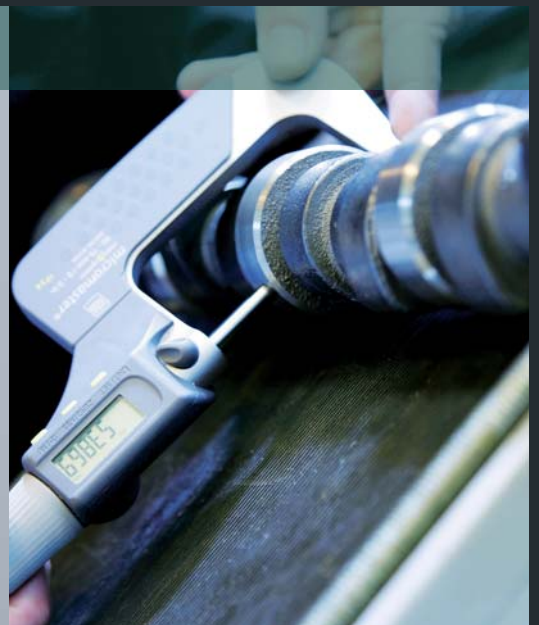


CONTROL ENGINEERING

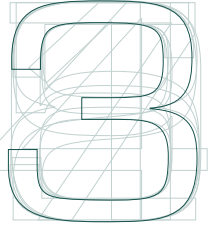
KONTROL INGENIARITZA

The power of information technology applied to production processes

Informazio teknologien potentziala produkzio prozesuei aplikatua







Control Engineering applied to production process enables full use to be made of information on production: measuring tolerances and finishes, maintenance and productivity data, physical signs showing the condition of tools and manufactured pieces, in addition to the state of machines used (power consumed, temperatures, speed, acceleration).

All these data can be applied to improve measuring processes, where we have gained a commanding knowledge, and the technology this information gives us.

To this end, we continued working in 2008 not only to increase our knowledge of the many facets of automation and control, but also, more than ever, to advance the transfer of our knowledge to production areas.

We have developed and applied strategies for signal processing to detect and eliminate vibrations in machines, which, when used with active components added to the machine or on the machine control, has led our Machine Drives and Dynamics team to achieve spectacular improvements in productivity for real manufacturing processes (thin pieces, threaded pipes, large milling surfaces). This has happened with varying the speed of the headstock, which has enabled 85% of vibration to be eliminated in the cases analysed.

We have also reduced production times by optimising process parameters. We have used models developed by our Process Monitoring and Control teams for the purpose, and contrasting the theoretical results with the experimental ones, and working on optimising the results in manufactured pieces. Grinding, turning and milling operations have seen the greatest benefit from these developments. For example, adaptive control techniques in grinding have raised productivity by between 20 and 35% in the pieces studied.

The Intelligent Automation Software line has had more work than ever integrating expert programs into suitable platforms: PDAs or mobile telephones, embedded systems, Internet and, of course, the control PC for the production unit. Our

knowledge of fields in manufacturing has also enabled us to help our customers to automate production lines where we incorporate our most advanced software developments. That is what we did for the TVSZ railway line, the biggest order in the history of machine tools in Spain, in which we took part.

In 2008, we have concentrated closely on developing a line of Measurement Systems. This line will be of strategic importance in the immediate future, based on both traditional and alternative methods (manufacturing pieces from composite materials, materials fed by laser). In keeping with the increasingly complex needs for measurement in the production area, the line has been very active in studying and implementing various principles and elements for measuring: quality of the piece through the development of automated systems for calibrating machines, systems for measuring cutting forces, and measuring dimensions in large pieces, a subject that will be extended within the European CHAMELEON project.

In short, there are more and more opportunities to apply the full potential of information from current production methods to improve these methods, and to develop new and more efficient manufacturing processes. Our team will keep working to gain the maximum benefit from this information, and drive innovation in the sector from a thorough knowledge of the latest technology in automation and control.

Javier Hernández
Director of the Control Engineering Department



Fabrikazio prozesuei aplikatutako Kontrolaren ingeniariak, produkzioaren inguruko informazioari etekin osoa ateratzeko balio digu: tolerantzien eta akabatuen neurketak, produktibitatearen eta mantentze lanen datuak, egindako piezen eta erreminten bilakaera deskribatzen duten seinale fisikoak, eta erabilitako makinaren egoera (kontsumitutako potentziak, temperaturak, abiadurak, azelerazioak).

Datu guzti hauek prozesuen hobekuntzan aplikatuko dira, bai datuak eta bai informazio hori gure esku jartzen duen teknologia menderatzen dugunean.

Bide horretan aritu gara lanean 2008 ekitaldian. Ez bakarrik kontrolaren eta automatizazioaren arloan gure ezagutza areagotzeko, baizik eta produkzioaren inguruan dugun ezagutzaren transferentzia ere inoiz baino gehiago garatzeko.

Makinetan sortzen diren bibrazioak detektatu eta ezabatzeko seinaleen prozesamendurako estrategiak garatu eta aplikatu ditugu. Makinari gehitutako elementu aktiboetan, edo horien kontrollean, benetako fabrikazio prozesuetan (pieza lerdanak, hariztatutako tutuak, fresaketa handiak) izugarritzko gorakada lortzea ekarri die Makinen dinamika eta eragintzako lan taldekoei. Buruaren abiadura-aldaketan estrategiena da adibide bat, aztertu diren kasuen %85ean bibrazioen agerpena saihestea lortu da.

Prozesu parametroen optimizazioari esker, produkzio denborak murriztu ditugu. Horretarako Monitorizazioan eta Prozesuen Kontrolean aditua den gure lan taldeak garatutako ereduak erabili ditugu, emaitza teorikoak emaitza praktikoekin kontrastatuz eta produzitutako piezetan emaitzak optimizatzea eraginez. Egin diren artezketak, fresaketa eta torneatze prozesuak izan dira garatutakoaren onuradun nagusiak. Adibidez, artezketan egin diren kontrol-moldatzaile teknikek eragin dute aztertu diren piezen produktibitatea %20 eta %35 bitartean igotzea.

Automatizazio Inteligentean duen Software lineak inoiz baino lan gehiago izan du programa adituak plataforma egokietan integratzen: PDAk edo telefono mugikorrek, murgildutako sistemak, Interneta eta, nola ez, produkzio elementuen kontroleko PC-a bera. Fabrikazioaren inguruan dugun

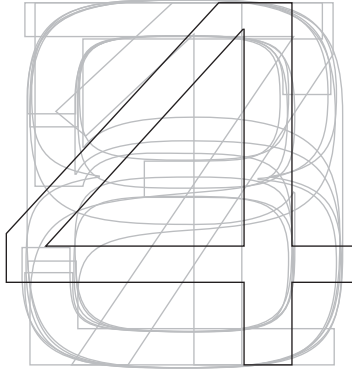
ezagutzak eman digu bidea, software aurreratuen garapenak integratzen ditugun produkzio lineen automatizazioan, gure bezeroei laguntzeko.

TVSZ trenbidearen kasua da bat, historian Espainian egon den makina-erremintako eskaerarik handiena da, eta gu bertan parte hartzen ari gara.

2008an Neurri Sistemen inguruko lan lerroaren garapenean eragin nahi izan da bereziki. Lerro hau estrategikoa izango da etorkizun hurbilean, helburuen artean bai prozesu tradizionalak eta baita alternatiboak ere (composite piezen fabrikazioa, laser bidez materiala hornitzea) izango dituen. Egunetik egunera konplexuagoak diren produkzio arloko neurketa beharrekin batera, lineak aktibitate handia izan du neurketako printzipio eta elementu desberdinen inplementazioa ikertzen: piezaren osotasuna, makinaren kalibraketa automatizatutako sistemen garapenean bidez, mozketako indar neurtzaile sistemak, eta CHAMELEON proiektu europarraren barruan hedatuko den gaia, dimentsio handietako piezen neurketa dimentsionala.

Laburbilduz, gero eta aukera gehiago dago produkzio prozesuen informazio potentziala, bai prozesuaren beraren hobekuntzan eta baita fabrikazio modu berri eta eraginkorren garapenean aplikatzeko. Gure lantaldeak lanean jarraituko du informazio horri ahalik eta etekin handiena ateratzeko eta sektorean berrikuntzaren trakzio izateko, automatizazioaren eta kontrolaren teknologia berrienak menderatetik abiatuz.

Javier Hernández
Kontrol Ingeniaritzako Departamentuko Zuzendaria



MECHANICAL ENGINEERING

INGENIARITZA MEKANIKOA

Mechatronics, precision and manufacturing processes serving leading sectors

Mekatronika, doitasuna eta fabrikazio prozesuak sektore traktoreen zerbitzura







2008 is a year that confirmed the fact that our concentrated, systematic and continuing effort made in generating knowledge in the Department's specialist fields, such as precision design, mechatronics and transformation, have become reality by applying this knowledge and skill in industry, and not only the nearest and most traditional, as is the case of machine tools, but also in some of the most important industries, such as power generation, railways and aeronautics.

For several years, IDEKO's choice of opening up to new sectors, and therefore, the Department, has been clear and firm. We emphasise that this opening is not free or temporary, but is the natural result of the skills and knowledge developed by our most traditional specialist lines, skills that enable us to support our strategic customers in their competitive positioning by providing solutions with added value based on technology.

In the machinery and components line, we must highlight some special developments, such as the design of a new solar tracker for photovoltaic panels, or the development of a kinematic device for security systems in distributing high and medium voltage electricity. Let us not forget the closer machine tool sector, such as the new measuring system for multi-diameter cylindrical pieces in grinding the finish, which is a device integrated into the production line that includes the technology applying in laboratory machines measuring by coordinates, which a precision level in the micron range.

On the subject of generating new technology, developments in the field of ultra-precision must be mentioned, both in machines for micro-machining by cutting and laser, and the development of drive and fastening devices for high precision pieces based on the use of magneto-rheological fluids, or a high-precision system for printing with functional ink.

With transformation processes, significant advances have been made in the development of ecological grinding technology in two different areas of technology: the development and construction of a test bed for nozzles has been completed, and, on a higher level, the demonstration type for grinding with a Minimum Coolant

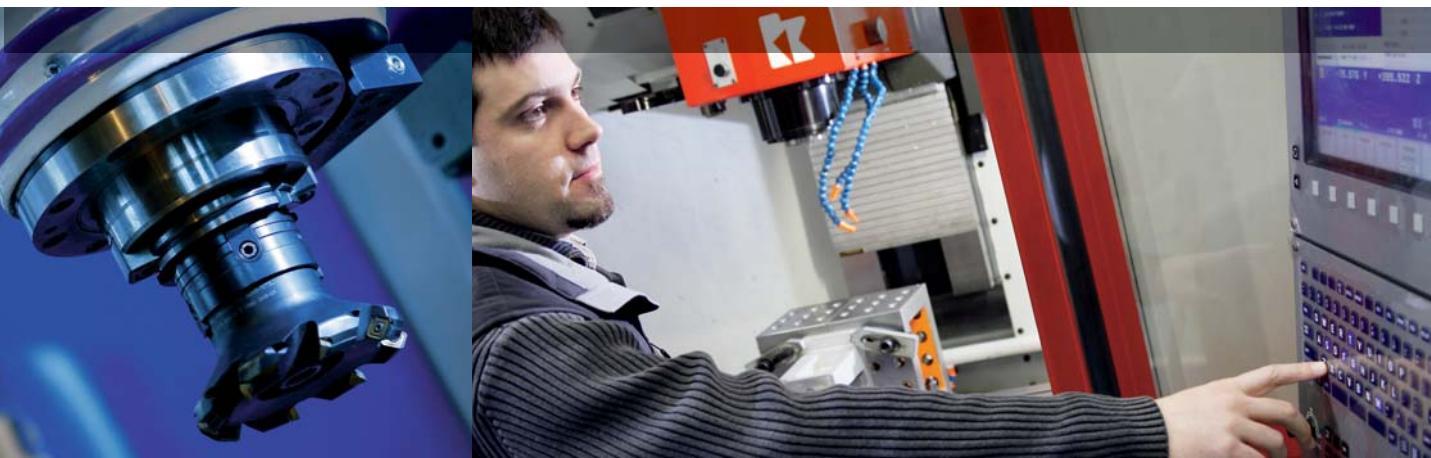
Quantity supported by cryogenic gas. The latter is returning highly competitive results in comparison with conventional cooling, with the added advantages of a simple system and reduction in waste and operating costs.

Also in this field, there has been collaboration in the development of new advanced machining processes, also for improving current production methods or starting up new machining lines with leading companies in the most advanced sectors, such as ITP and Gamesa.

Let us also remember development projects for processes relating to new laboratories for processing composite materials and for manufacturing laser systems, which are so important that they deserve their own section in this annual review.

In the field of Virtual Engineering, there has been the continuing success in developing characterisation models for machining (milling, turning, grinding). The work that has been carried out has generated excellent results on both a scientific level, positioning us as world leaders in the area, and an operational level, with the results being applied to various facets. Mention must also be made of the start up of systems for setting up and commissioning machining machines and processes, and solving complex problems on machining lines, to eliminate complex cases of chatter, thus maintaining production levels that would be impossible without these solutions.

Rafael Lizarralde
Director of the Mechanical Engineering Department



2008 urteak baieztatu du Departamentuko espezializazioen alorretan (doitasun diseinua, mekatronika eta transformazio prozesuak) ezagutza sortzeko egindako esfortzu zentratu, sistematiko eta jarraituak, fruituak ematen dituela ezagutza eta gaitasun horiek industrian aplikatutakoan, eta ez soilik gertuko eta ohiko den Makina-Erremintan, baita trenbide, aeronautika edo energia sortzeko industriak bezalako sektore esanguratsuetan ere.

Duela urte batzuetatik sektore berrietara irekitzeko IDEKOrren eta ondorioz Departamentuaren apustua argia eta sendoa da.

Azpimarratu nahi dugu aipatutako irekitzea ez dela funsgabea edo egoeraren araberakoa, gure espezializazio linea tradizionaletan garatutako ezagutza eta gaitasunen ondorio naturala baizik. Gaitasun horien ondorioz, gure bezero estrategiko-beraien posizionamendu lehiakorren lagundu diezaiogegu, teknologietan oinarritutako balio erantsiko eskaintzen bidez.

Zentzu honetan, makina eta osagaien lineetan, garapen berezi batzuk nabarmendu behar ditugu, panel fotovoltaikoen teknologiarako eguzki jarraitzaile berri baten diseinua edo tentsio altu edo ertaineko elektrizitatea banatzeko segurtasun sistematarako dispositibo zinematikoaren garapena. Eta makina erremintatik gertuen dagoen sektorea ahaztu gabe, akabatuen artezketa operazioan zehar, diametro anitzeko pieza zilindrikoak neurtzeko sistema berriaren garapena, produkzio linean integratutako elementu batean, mikra balio-tarteko doitasun mailarekin, laborategiko koordinada bidezko neurketa makinetan aplikatzen diren teknologiak dituen.

Teknologia berriak sortzeari dagokionez, ultradoitasunaren alorrekoak azpimarratu behar dira, bai mozketak eta laser bidezko mikromekanizazio makinak, eta baita fluxu magnetoreologikoen erabileran oinarritutako doitasun altuko piezak eustekoa eta eragiteko dispositiboaren garapena, edo eta tinta funtzionalen inprimaketarako doitasun handiko sistema ere.

Transformazio prozesuen linean asko aurreratu da artezketak ekologikoaren inguruko teknologien garapenean, teknologien bi maila desberdinetan: alde batetik toberen enstegu banku baten garapena eta eraikitzea amaitu da eta mai-

la altuago batean, gas kriogenikoarekin lagunduta, Lubrifikatzaile kantitate minimoarekin artezteko demonstrazioa, ohiko hozketarekin alderatuta emaitza oso lehiakorrek erakutsi dituen, sistema sinplea izatea eta hondakin eta esplotazio koste murrizketak eragitea bezalako abantailekin.

Azpimarratzekoa da, mekanizazio prozesu aurreratu hauek garatzeko, martxan diren produkzio prozesuak hobetzeko eta mekanizazio linea berriak martxan jartzeko, sektorean liderak diren ITP eta Gamesa bezalako enpreekin elkarlanean aritu izana.

Bestalde, ez ditugu ahaztu behar material konposatuak prozesatzeko eta laser sistemen bidez fabrikatzeko laborategi berriekin zerikusia duten prozesuen garapen proiektuak, duten garrantziagatik kapitulu berezi bat merezi baitute aktibitate memoria honetan.

Ingeniaritza Birtualari dagokionez mekanizatze prozesuen (fresaketa, torneatu, artezketa) karakterizazio ereduaren garapenean izandako jarraipen arrakastatsua aipatu behar da, emaitza oso onak eragin baitizkigu, bai maila zientifikoan, munduko lehen mailan kokatu gaituena, eta baita esplotazio emaitzetan ere, alderdi batean baino gehiagotan gauzatu dena, makina eta mekanizazio prozesuak konfiguratu eta puntuan jartzeko sistemak martxan jartzetik hasi eta mekanizazio lineetako arazo konplexuak konpontzera arte, prozesuko bibrazio kasu konplexuak ezabatuz, soluzio hauek aplikatu gabe ezinezkoak liratekeen produkzio baldintzak mantenduz.

Rafael Lizarralde
Ingeniaritza Mekanikoko Departamentuko Zuzendaria

5

NEW LABORATORIES

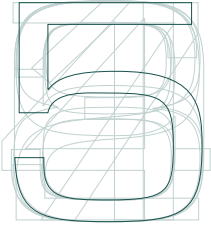
LABORATEGI BERRIAK

The start up of two new laboratories has been the biggest milestone in the Centre's activities this year. These two new laboratories, which focus on technology for processing composites and laser technology, have greatly increased our capacity, and have specialised equipment and facilities, and provide continuity to our drive for excellence made in 2007, when the high precision laboratory was started up.

Aurtengo ekitaldian zentroak egin duen guztitik martxan jarri diren bi laborategiak izan dira gertaerarik garrantzitsuena. Bi laborategi berri hauek, nagusiki konpositeak prozesatzeko teknologietan eta laser teknologietan aritzen direnek, gure ahalmena handitzen dute nabarmenki, ekipamendu eta instalazio espezializatuak eskaintzen dizkigutelako, eta 2007. urtean zehar bikaintasunaren alde egin zen apustuari jarraipena ematen diote abian jarri duten ultradoitasuneko laborategiarekin.







Therefore, the two new laboratories have given us a leading edge in two of the manufacturing technologies where a greater importance in the future is foreseen: processing composite materials and laser technology, in their latest phases, such as direct manufacturing and micro-manufacturing.

The investment needed to start operation must also be emphasised. This is more than one million euros, which was used to purchase state of the art equipment for the technology.

Laboratory for processing composite materials

In line with its strategy of generating value for industry, IDEKO has set itself the goal of developing and leading technology for processing composites which may give rise to making machines and devices for automating operations that are currently done manually. Taking things one step further, it is introducing composites into sectors and applications which are at present considered unsuitable or inaccessible, due to difficulties in production

To this end, we have an enclosed area of 130 sq mts for research into materials processing, to include the various technologies and operations involved: placing dry or pre-impregnated material, in different formats and weaves,

impregnation by various methods, cutting, gluing and curing, all supported by inspection and checking techniques for the processes and manufactured pieces.

To this end, we have invested in the purchase of testing equipment for infusion, die casting and curing, inspection equipment for the end piece, simulation systems for the process, and we have set aside an area for demonstration prototypes that are already in the development stage, and, once tested in the laboratory, will serve as a basis for developing industrial devices.

Laser laboratory

We have structured the laser laboratory round two technologies: in the field of power lasers for macro applications, we have opted for a 2 kW fibre laser, mainly for researching into additive methods, aimed in particular at repairing pieces with high added value, which we understand to be a growing niche in industry in strategic sectors, such as aeronautics and energy.

In addition, in the field of micro-technology, we have purchased a pulsed laser source with high power density. This is a laser that works in picoseconds, equipped to select different wavelengths and working frequencies automatically, to include a broader spectrum of conditions, so that research can be done in wider fields.

Let us not forget the work we have done with the manufacturer Rofin, one of the world leaders in laser technology, with whom, apart from its becoming a collaborating member of IDEKO, we have signed an agreement to work together on the exchange of knowledge, and a joint development to enable us to make more rapid and firm strides towards the end goal of developing technology with a practical industrial application.

Finally, the two new laboratories have been fitted with the equipment required for analysing and characterising the faults, material structure, composition etc. manufactured pieces in both metal and polymer.



Gauzak horrela, bi laborategi berri hauei esker punta-puntako ekipamendua eduki ahal izan dugu etorkizunean oihartzun handian izango duten fabrikazioko teknologietako bitan: material konposatuen prozesatze lanetan eta laser bidezko teknologietan, eta, bereziki, beraien bertsiorik berrienetan, esaterako "direct manufacturing" eta "Mikrofabrikazioa" izenekoetan.

Halaber azpimarratu behar da lanean jartzeko egin behar izan den inbertsioa, milioi bat euro baino gehiagokoa alegia, esandako teknologietan erreferentziazkoak diren ekipamenduak erosteko izan dena.

Material konposatuak prozesatzeko laborategia

Industria inguruneari balio gehiago emateko baliatzen garen estrategiari jarraituta, IDEKOn konpositeak prozesatzeko teknologiak garatu eta menperatzea dugu helburutzat, ondoren gaur egun eskuz egin ohi diren eragiketak automatizatzea ahalbidetuko diguten makinak eta gailuak fabrikatu ahal izateko, bai eta, beste urrats bat egin eta gaur egun produkzioan arazoak dakartzatelako desegokiak edo erabiltzen zailak direla jotzen diren sektore eta aplikazioetan sartzeko.

Horretarako, 130 m²-ko espazio itxi bat prestatu dugu materialak prozesatzeko lanen gainean ikerketak egiteko, bai eta lan horietan erabiltzen diren teknologia eta eragiketen gainean ere: material lehorra edo aurretik produkturen batekin bus-

titakoa jartzea, hainbat formatutan eta hainbat ehunduratan, materiala produkturen batekin bustitzeko hainbat teknika, ebaketa, itsastea eta gogortzea; eragiketa horiek guztiak prozesuak eta fabrikatutako piezak ikuskatzeko eta egiaztatzeko tekniken menpe jarriko dira.

Helburu honekin inbertsioak egin ditugu infusio, moldekatze eta gogortze prozesuen probak egiteko ekipamenduetan, azken piezak ikuskatzeko ekipamenduetan eta prozesuak simulatzeko sistemetan, eta, horretaz aparte, leku bat prestatu dugu garapen fasean dauden eta, behin laborategian probatuta, industriako gailuen garapenean adibide gisa erabiliko diren prototipoak kokatzeko.

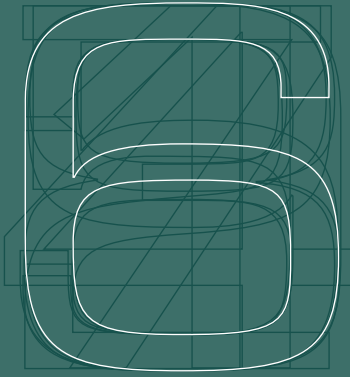
Laser laborategia

Laser laborategiaren konfigurazioa egituratzeko bi teknologiaz baliatu gara: makro aplikazioetarako indar handiko laserren alorrean, 2 Kw-ko indarra duen zuntzeko laser bat aukeratu dugu, batez ere prozesu gehigarrien gaineko ikerketetan erabiltzeko, eta, bereziki, balio erantsi handiko piezak konpontzera bideratutako ikerketetan erabiltzeko, horiek baitira aeronautikaren edo energiaren moduko sektore estrategikoetan gero eta indar handiago hartzen ari diren industria atalak.

Gainera, mikroteknologiaren alorrean potentzia dentsitate handiko laser pulsatuko iturri bat erosi dugu. Pikosegundotako laser bat da, hainbat uhin luzera eta lan frekuentzia modu automatikoa aukeratzeko modua eskaintzen duena eta, aldi berean, baldintza aukera gehiago ematen dituena, garatuko diren ikerketa eremuak zabalagoak izan daitezzen.

Ezin dugu ahaztu Rofin fabrikatzailearekin, hots, IDEKoren bazkide laguntzailea izateaz gain laser teknologian munduan dagoen liderrik handienetako bat den horrekin elkarrekin aritzeko izenpetu dugun hitzarmena, berari esker ezagutzak elkarrekin trukatu eta industrian aplikazio praktikoa izango duten teknologiak garatzeko bidean azkarrago eta sendoago batean aurrera egiten lagunduko digulako.

Bukatzeko, bi laborategi berriak osatu egin dira fabrikatutako piezak, metalikoak zein polimerikoak, aztertu eta haien ezaugarriak (akatsak, materialaren egitura, osaera, etab.) finkatzeko behar den ekipamenduekin.



ACTIVITY MOST IMPORTANT

AKTIBITATE ESANGURATSUENAK

Our research projects are the best proof of our vocation to drive innovation through research: studies on competitive intelligence, transfer models, the analysis of emerging sectors, applications to increase productivity in strategic sectors, tailor-made solutions, advanced automation and control, testing new and more ecological transformation processes, etc. Below is a sample of the subjects tackled in 2008.

Gure proiektuak ikerketaren bidez berrikuntzatik tira egin nahi dugula adierazteko adibide dira: inteligentzia lehiakorraren azterketak, transferentzia ereduak, sortzen ari diren merkatuen azterketak, sektore estrategikoetan produktibitatea areagotzeko aplikazioak, neurrira egindako soluzioak, automatizazio eta kontrol aurreratua, transformazio prozesu berri eta ekologikoagoen entseguak...Ondoren 2008an landu diren gaiak aurkeztuko dira.



Product Projects / Produktu proiektuak

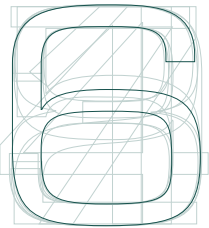
- Competitive Intelligence for innovation. Impact of IC systems in on competitiveness.
- Customised competitive intelligence systems.
- Study of competitive positioning in strategic sectors.
- Standardizing and normalising components.
- Technological support for managing product development.
- Study and development of systematic technology transfer models between R&D centres and companies.
- Environmental management of the lifecycle of products for machine tool manufacturers.
- Redesign of production fluids.
- Application of tack time to non-mass production.
- Berrikuntzarako Inteligentzia Lehiakorra. IL sistemen lehiakortasunean inpaktua.
- Inteligentzia lehiakor pertsonalizatuko sistemak.
- Sektore estrategikoetako posizionamendu lehiakorraren azterketa.
- Osagaien estandarizazio eta normalizazioa.
- Produktuaren garapenaren kudeaketarako laguntza teknologikoa.
- I+G zentroen eta enpresen artean teknologia transferitzeko eredu sistematikoen azterketa eta garapena.
- Makina erremintako fabrikatzaileentzat produktuen bizitza zikloaren ingurugiro kudeaketa.
- Produkzio fluxuen birdiseinatzea.
- Seriatu gabeko fabrikazioari tack time aplikatzea.

Control Projects / Kontrol proiektuak

- Elimination of chatter in lathe turning: Pre-industrial study on pipe threading.
- Study on adaptive control for double turret lathes.
- Adaptive Control Processes, ACO, in grinding.
- Deployment of model-based technologies to industrial testing.
- Control of the production line for T.V.S.Z. railway axles and wheels.
- Automation of measuring machines for Wheelsets.
- Volume error compensation in milling machines.
- Development of a solution for measuring integrated stress in double turret lathes.
- Torneatuan Chatter-a ezabatzea: Tutuen hariztaketari aplikatutako ikerketa aurre-industrialia.
- Dorretxo bikoitzeko tornuentzako adaptazio kontrol estrategien ikerketa.
- Adaptive Control Optimisation, ACO, artezketa prozesuetan
- Deployment of model-based technologies to industrial testing
- T.V.S.Z. Trenbideetako ardatz eta gurpilen fabrikazio linearen kontrola
- Wheelsets makinaren neurketaren automatizazioa
- Fresatzaileetako bolometria akatsen konpentsazioa
- Dorretxo bikoitzeko tornuetan integratutako indar neurketa soluzio baten garapena

Mechanics Projects / Mekanikako proiektuak

- Development of solar trackers for photovoltaic panels
- Multi-dimension measuring device for high-precision ground cylindrical pieces
- SUA: development of a system for helping in the start up of grinding operations based on process models
- Minimal Coolant Grinding (MCG) technology
- Ultra-precision drive system based on magneto-rheological fluids
- INKJET: Functional fluid printing technology
- Family of hydrostatic bearings for heavy vertical lathes
- Dressing metal wheels by electro-erosion
- Panel fotovoltaikoentzako eguzki jarraitzaileen garapena
- Doitasun handiko arteztutako pieza zilindrikoentzat neur-tzaile multikoata
- SUA: Prozesu eredueta oinarritutako artezketa prozesuak puntuan jartzeko laguntza sistemaren garapena
- MCG artezketa teknologia (Minimal Coolant Grinding)
- Fluxu magnetoreologikoetan oinarritutako ultradoitasun era-gintza sistema
- Tornu bertikal pisutsuentzat kojineten hidrostatikoen familia
- Elektrohigadura bidez harri metalikoak diamantatzeko prozesua



Publications / Argitalpenak

1. Bediaga, J. Muñoa, J. Hernández, L. N. López de Lacalle
"Estrategia de regulación automática de la velocidad de giro para la obtención de un corte estable en fresaado a alta velocidad"
 Congreso de Máquinas-Herramienta y Tecnologías de Fabricación 2008
2. Oscar Gonzalo, Ainhoa Celaya, Joseba Pujana, Raúl Alberdi, Alejandro Sandá, Pedro J. Arrazola
"Evaluación de los procesos de fabricación asistidos por ultrasonidos"
 Congreso de Máquinas-Herramienta y Tecnologías de Fabricación 2008
- 3 I. Bediaga, M. Zatarain, J. Muñoa, R. Lizarralde, L. N. López de Lacalle
"Application of continuous Spindle Speed variation for chatter avoidance in milling. Optimisation of speed variation parameters"
 7th International Conference on High Speed Machining, Darmstadt. 2008
- 4 V. García Navas, I. Ferreres, J.A. Marañón, C. Garcia-Rosales, J. Gil Sevillano
"Electro-discharge machining (EDM) versus hard turning and grinding—Comparison of residual stresses and surface integrity generated in AISI O1 tool steel"
 Journal of materials processing technology 195 (2008) 186-194
5. H. Urreta, Z. Leicht, A. Sanchez, A. Agirre, P. Kuzhir, G. Magnac
"Hydrodynamic bearing lubricated with magnetic fluids"
 Dresden, August 25th - 29th 2008
6. Z. Leicht, H. Urreta, A. Sanchez, A. Agirre, P. Kuzhir, G. Magnac
"Theoretical and experimental analysis of MR valve"
 Dresden, August 25th - 29th 2008
7. J. A Arrieta, I. Serrano, N. Aranguren, D. Bianchi
"Competitive intelligence in the wind power industry—development of a market and product plan"
 Conferencia CINET (Valencia) - 08/09/08
8. Virginia García Navas, Imanol Ferreres, Jose Angel Marañón, Carmen García-Rosales and Javier Gil Sevillano
"White layers generated in AISI O1 tool steel by hard turning or by EDM"
 International Journal of Machining and Machinability of Materials, Vol. 4, No. 4, 2008
9. V. García Navas, C. García-Rosales, J. Gil Sevillano, I. Ferreres, J. A. Marañón
"Hard Turning Plus Grinding-A Combination to Obtain Good Surface Integrity in Aisi O1 Tool Steel Machined Parts"
 Machining Science and Technology An International Journal, Volume 12 Issue 1 2008
10. M.Zatarain, I.Bediaga, J.Muñoa, R.Lizarralde
"Stability of milling processes with continuous spindle speed variation: Analysis in the frequency and time domains, and experimental correlation"
 CIRP Annals - Manufacturing Technology, Vol. 57, Is.1, 2008, Pages 379-384
11. V. García Navas, C. García-Rosales, J. Gil Sevillano, I. Ferreres, J. A. Marañón
"White layers generated in AISI O1 tool steel by hard turning or by EDM International"
 Int. Journal of Machining and Machinability of Materials Vol 4-4 2008 pag 287-301



Large research projects / Ikerketa proiektu handiak

European Commission / Europar Batzordea

- Working on 8 projects in the VI and VII Framework, Ideko is leader in 3 of them.
- VI eta VII Programa Markoan, 8 proiektu martxan eta horietako 3tan liderrak

Research and Innovation Ministry / Zientzia eta Berrikuntza Ministerioa

- 2 Cenit projects, National Strategic consortiums in technical investigation
- Bi "Cenit" proiektu, Ikerketa Teknikorako Partzuego Estrategiko Nazionala
- 1 Singular Strategic project Basque Government
- Ikerketa Teknikoa sustatzeko proiektu Estrategiko Be-rezi bat

Education Ministry / Hezkuntza Ministerioa

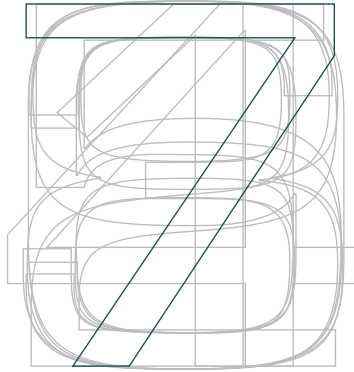
- 1 project R+D National Plan
- Plan Nazionaleko I+G proiektu bat

Basque Government / Eusko Jaurlaritza

- 3 Eortek project, Strategic Research programme
- Hiru Eortek proiektu, Ikerketa Estrategikoko pro-gramak.
- 2 Eotorgai projects
- Bi Eotorgai proiektu, Ikerketa Industrial eta izaera Es-trategikoko Garapen Esperimentala

Patents / Patenteak

1. Table with rotary positioning
2. Fibre laying head
3. Cryogenic grinding

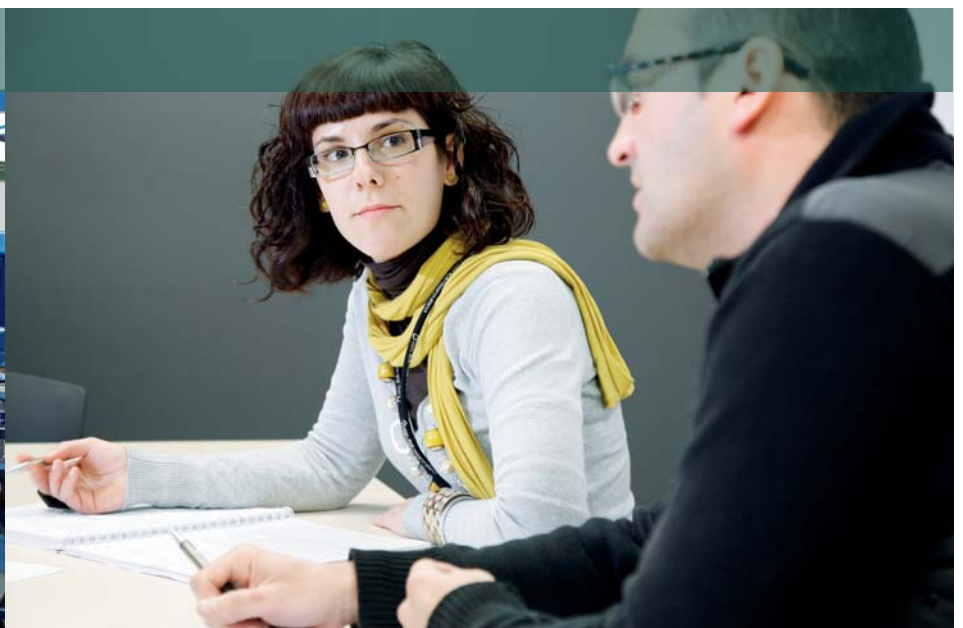


STAFF

LANGILEAK

We can also be satisfied with how our staffing has evolved in 2008. Ideko has finished the year with 112 people employed, 12% higher than in 2007. We continue working to get the excellence of our staff, due to this fact, three of our researchers started with their thesis. Ideko will finish the year with 12 PhD holders and another 11 people with their thesis in progress.

IDEKOkoko langileei dagokionez ere 2008 urtea oso positiboa izan da. 112 langilerekin amaitu dugu 2008 urtea, joan zen urtearekiko %12aren hazkundearekin. Langile bikainez osatutako taldea izatea izan da gure apustua eta horregatik 3 lankide gehiago hasi dira doktore tesiak egiten. Modu horretan IDEKOk 12 doktore eta 11 doktoregai izango ditu urte bukaeran.



Complementing internal training, the human resources department has worked to take on staff with a very high level of research skills. The effort made was worthwhile as, in addition to employing the number of staff required for the year, we have achieved the correct amount of turnover in 2008.

All this has been achieved in the year in which we celebrated the first of the IDEKO members to retire, and we have consolidated the staffing situation by increasing the rate of cooperative jobs.

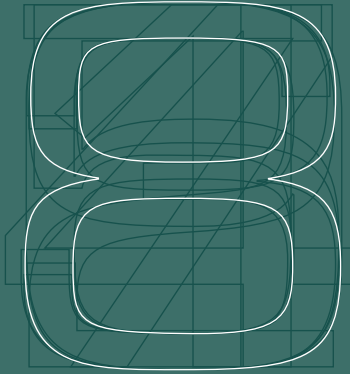
Barne formazioaz gain, pertsonen departamentutik ikerlari gisa maila altua duten pertsonak sartzen ahalegindu gara. Ahalegin horrek bere fruitua eman du, urterako aurreikusitako kontratazioak betetzeaz gain, errotazio maila egokia izan baita 2008an.

Guzti hori, IDEKOko lehen jubilazioak izan ditugun ekitaldian lortu dugu eta langile taldearen egoera kontsolidatu dugu, lanpostu kooperatiboaren tasa igoz.

STAFF IDEKOko LANGILEAK	112
Working members + TCA / Bazkideak + IKL	90
Grant holders + PFC / Bekadunak + KAP	22

STAFF QUALIFICATION LANGILEEN KUALIFIKAZIOA	112
PhD holders / Doktoreak	12
Master Degree / Goi mailako tituludunak	65
Bachelor degree / Erdi mailako tituludunak	25
Others / Beste batzuk	10





BALANCE SHEET

BALANTZE EKONOMIKOA

2008 has been a good year from the economic and financial point of view. Income from projects has reached 6.4 million euros, a year on year increase of 25%, heavily weighted towards income from projects under contract. Shares have increased, due to investments made and economic and financial situation is good, with good solvency and liquidity ratios and a positive Development Fund.

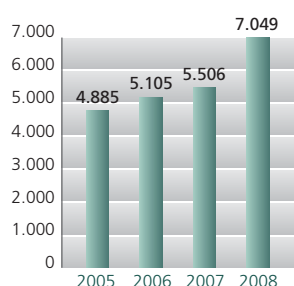
2008 ekitaldia ona izan da ikuspegi ekonomiko finantzariotik. Proiektuetatik izan ditugun diru sarrerak 6,4 milioi €-takoak izan dira, %25eko urtez urteko hazkundearekin eta kontratu bidezko proiektuen sarrerak markatutako aurre azterketarekin. Egin diren inbertsioen ondorioz aktiboak ere hasi egin dira eta egoera ekonomiko finantzarioa ona da, kaudimen eta likidezia ratio onekin eta maniobra-fondo positiboarekin.





From all this, we can state that, at present, we have an excellent financial situation, remembering the difficult times we are going through.

Guzti hau ikusita, eta bizi dugun abagune zaila kontuan hartzen badugu, momentu hauetan gure egoera finantzarioa pribilegiatua dela esan dezakegu.



Izaskun Abaunz
Financial Director and HR Manager
Finantza eta Giza Baliabideetako Zuzendaria

INCOME FROM PROJECTS/PROIEKTUETAKO SARRERAK

(in thousands € /mila €)

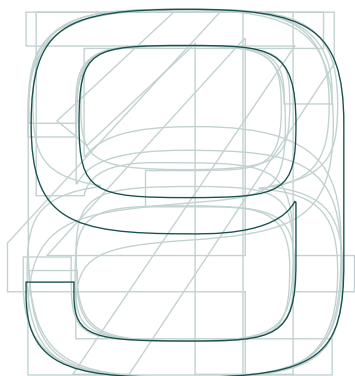
Income from contracts / Kontratupeko sarrerak	4.175.566,96	65%
Income investigación / Ikerketen sarrerak	2.281.501,21	35%
	6.457.068,17	100%

BALANCE SHEET 31.12.08 EGOERAREN BALANTZEA ((in thousands €)

Net fixed assets / lbilgetu garbia	8.196.112,50
Realizable / Egingarria	8.315.306,91
Available / Erabilgarria	533.344,46
TOTAL ASSETS / AKTIBOA GUZTIRA	17.044.763,87
Own funds / Fondo propioak	5.672.607,67
Distributable income / Banatzeko sarrerak	7.180.664,58
Amortizable in l/t / Galdagarria epe luzera	1.071.684,65
Short term receivables / Galdagarria epe motzera	3.119.806,97
TOTAL LIABILITIES / PASIBOA GUZTIRA	17.044.763,87

BALANCE SHEET 31.12.08 EMAITZEN KONTUA ((in thousands €)

TOTAL OPERATIONAL INCOME / USTIAPEN SARRERAK GUZTIRA	7.049.485,98
Income from Projects / Proiektuen sarrerak	6.457.068,17
Other costs / Beste sarrera batzuk	592.417,81
TOTAL OPERACIONAL COSTS / USTIAPEN GASTUAK GUZTIRA	7.005.328,68
Operational costs / Ustiapen gastuak	6.237.696,95
Other costs / Beste gastu batzuk	65.000,09
Depreciation / Amortizazioak	702.631,64
BALANCE / USTIAPENENKO EMAITZAK	44.157,30



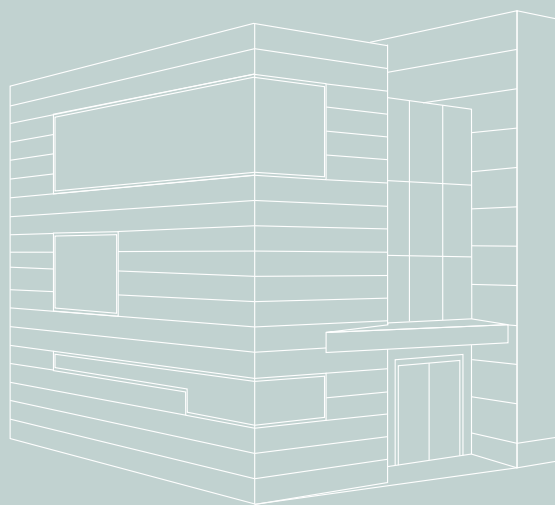
GOVERNING ORGANISATIONS

GOBERNU ORGANOAK



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10

MESSAGE FROM THE PRESIDENT

LEHENDAKARIAREN MEZUA

As president of IDEKO, I would first like to thank you for being with us in the review of 2008.

We started 2009, a complicated year strongly affected by the international crisis, full of hope and ready to continue providing innovations that will make a difference to industry.

IDEKOko lehendakari gisa, eskerrak eman nahi dizkizuet 2008 ekitaldiaren errepaso honetan gurekin egoteagatik.

Nahiz eta nazioarteko krisiaren eraginez urte konplikatua izan, guk ilusioz ekin genion urteari, industri sareari berrikuntza bereizgarriak ematen jarraitzeko prest.



With the inauguration of a 1600 sq mt workshop for prototypes in January 2008, and a 400 sq mt Ultra-precision laboratory, IDEKO has unquestionably become a benchmark in the field of Research into Manufacturing Technology. We have achieved all this once more thanks to the confidence which, even in these difficult times, our customers have place in us, who are the ones who have chosen to stay with technological innovation as the key factor in competitive differentiation, with the invaluable help of Public Administrative bodies.

From our position as a technological centre in the innovation system, we wish to encourage industry to continue to opt for R&D to ensure competitiveness in business, as it always has done. We understand that, more than ever, now is the time to strengthen efforts and prepare yourselves for the rising demand that will follow the current crisis.

To this end, we at IDEKO have continued with our investment plans by bringing into operation two new laboratories in our facilities, Laser Laboratory and Composite Laboratory, in order to go deeper into new manufacturing fields to complement the traditional ones. In addition to this, we will continue with our Micro-manufacturing initiative, as demonstrated by building the Ultra-precision laboratory.

All these fields are contained in our Strategic Plan 2009-2012, in which excellence, specialisation in technology, networking and customer service are essential activities.

Our main challenges are to optimise and improve our research work to achieve the innovations required by the market. To this end, we are working to identify opportunities and needs in target sectors that will enable us to direct our lines of research in alignment with the current and future social and business environment, and also ensure that any inventions developed at the centre are transferred to our customers through different formulae, but always striving for improvement in competitiveness in our environment though a difference in technology in various areas of activity. At the same time, we will seek the best development for the lines of research, ensuring excellence and specialisation in specific areas of knowledge.

Rafael Barrenechea
President

1.600m² dituen prototipoen tailerrarekin eta 400m²-ko ultradoitasun laborategiarekin, IDEKO erreferentzia garrantzitsua bihurtu da Fabrikazio Teknologien Ikerketaren arloan. Guzti hori, administrazio publikoak eta bezeroek, beste behin ere gudan jarri duten konfiantzagatik lortu dugu. Bizitzen ari garen koiuntura honetan ere lehiakortasunerako gako gisa, berrikuntza teknologikoagatik apustu egiten jarraitzen baitute.

Berrikuntzaren euskal sistemako eragile garen aldetik, industria animatu nahi dugu, orain arte egin duten bezala aurrerantzean ere, enpresa lehiakorak izateko I+G-an apustu egin dezaten. Orain inoiz baino gehiago, indarrak batu eta etorkizunerako prestatzeko garaia da, egungo krisia gainditutakoan ireki daitezkeen merkatuei erantzun ahal izateko.

Zentzu honetan, IDEKON gure inbertsio planekin jarraitu dugu eta bi laborategi berri jarriko ditugu martxan gure instalazioetan, Laser laborategia eta Composite laborategia, ohiko fabrikazio bideen osagarri izan daitezkeen fabrikazio bide berrietan sakontzeko helburuarekin. Bestalde, ultradoitasun laborategian kokatzen den Micromanufacturing egitasmoarekin ere aurrera jarraituko dugu.

Aipatutako guztia, bikaintasuna, espezializazio teknologikoa eta bezeroari zuzendutako zerbitzua ardatz dituen 2009-2012 Plan Estrategikoan jasota dago.

Izan ere gure erronka nagusienetarikoa da merkatuak eskatzen dituen berrikuntzak lortzeko ikerketan hobetzea eta optimizatzea. Horretarako helburu ditugun sektoreen beharrak eta aukerak identifikatzeko lan egingo dugu, gure ikerketa lerroak egungo eta etorkizuneko inguru sozioenpresarialarekin batera joan daitezen, eta beste alde batetik, zentroan sortzen diren garapenak formula desberdinen bidez bezeroari transferitzen dizkiogula ziurtatuko dugu, betiere desberdintze teknologikoaren bidez, gure inguruaren lehiakortasuna hobetzeko helburuarekin.

Guzti horrekin paralelo, ikerketa lerroen garapen optimoa zainduko dugu, bikaintasuna eta arlo konkretuetako eza-gutzaren espezializazioa ziurtatuz.

Rafael Barrenechea
Lehendakaria

IDEKO wins the International prize

MANUFACTURER OF THE YEAR 2008

Sari internazionala lortu du IDEKOk



IDEKO was the absolute winner in the Strategic Manufacturing Awards 2008 for an innovative process aimed at safe and ecological machining.

IDEKO "Strategic Manufacturing Awards 2008" sarien irabazlea izan da, mekanizatu seguru eta ekologikora bideratutako prozesu berritzaileagatik.

Last October, IDEKO received the Manufacturer of the Year prize at the prestigious Strategic Manufacturing Awards 2008.

The award was given for an innovative clean cutting technology, developed by IDEKO, which prevents the risk of explosion or fire from magnesium chips without the need for lubrication when machining alloys in the aeronautical and automotive sectors.

This innovative process is aimed at safe, ecological machining, as well as the capacity to take research to

lazio urrian IDEKOk "Manufacturer of the Year" saria jaso zuen Strategic "Manufacturing Awards 2008" sari banaketa ezagunetan.

Saria IDEKOk garatutako mozte garbiko teknologia berritzaile bati eman zioten, aeronautika eta auto-mozio sektoreetan, aleazioen mekanizatuan lubrifikatu behar izan gabe, magnesiozko txirbilien leherketa edo sute arriskuak saihesten dituena. Mekanizatu seguru eta ekologikora bideratutako prozesu berritzaile hau eta ikerketa maila altuagoko fa-

a higher level of competitive manufacturing, made IDEKO a deserving recipient of the award.

The Strategic Manufacturing Awards for part of the European Manufacturing Strategies summit, attended by top management from renowned international companies. IDEKO also received the first prize in the Green Manufacturing category ahead of over one hundred candidates.

brikazio lehiakorrera eramateko gaitasuna izan ziren IDEKO saria merezi izatera eraman zutena.

Strategic Manufacturing Awards sariak, European Manufacturing Strategies gailurraren parte dira eta bertara nazioarteko enpresa ospetsuenetako zuzendariak joaten dira.

Gainera IDEKOk lehenengo saria lortu zuen Green Manufacturing edo Ingurugiroarekiko Fabrikazio Arduratsua kategorian beste 100 partehartzeileen aurretik.



Joseba Pérez,
Director de Proyectos de I+D Internacionales de IDEKO



Rafael Lizarralde, Director del Departamento de Ingeniería Mecánica de IDEKO y Joseba Pérez, Director de Proyectos Internacionales de I+D de IDEKO recibiendo el premio