THEME [SME-2011-3]

[Demonstration action]

SONO“R”US

“Machine for Microparts Moulding based on Ultrasound excitation”

D5.2 Final Dissemination activities report

Project No. 286552

Start date of project: 01-05-2011

Duration: 2 years

Revision: 01

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Deliverable Information

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Author: Marco Bibas

Dissemination Level

Project co-funded by the EC within the Seventh Framework Programme (2011-2013)		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

(Tick the corresponding dissemination level of the deliverable according to Annex I).

Approvals

	Name	Company	Date	Visa
Author	Marco Bibas	ASCAMM	25.04.2013	
WP Leader	Marco Bibas	ASCAMM	29.04.2013	
Coordinator	Xavier Portal	MATEU Y SOLE	29.04.2013	

Document history

Revision	Date	Modification
Version 1		

Dissemination report

1.1 The Project Web Site

The project web site is available since the beginning of Sono"r"us project. It is accessible at: http://www.SONO"R"US project.eu

Once the project is ended, the website is to be available at least one year.

- **Partners web sites:**

To increase visibility of Sono"r"us project, the partners have implemented within their own website a link to Sono"r"us website.

Figure 1: CEDRAT´s Web Site

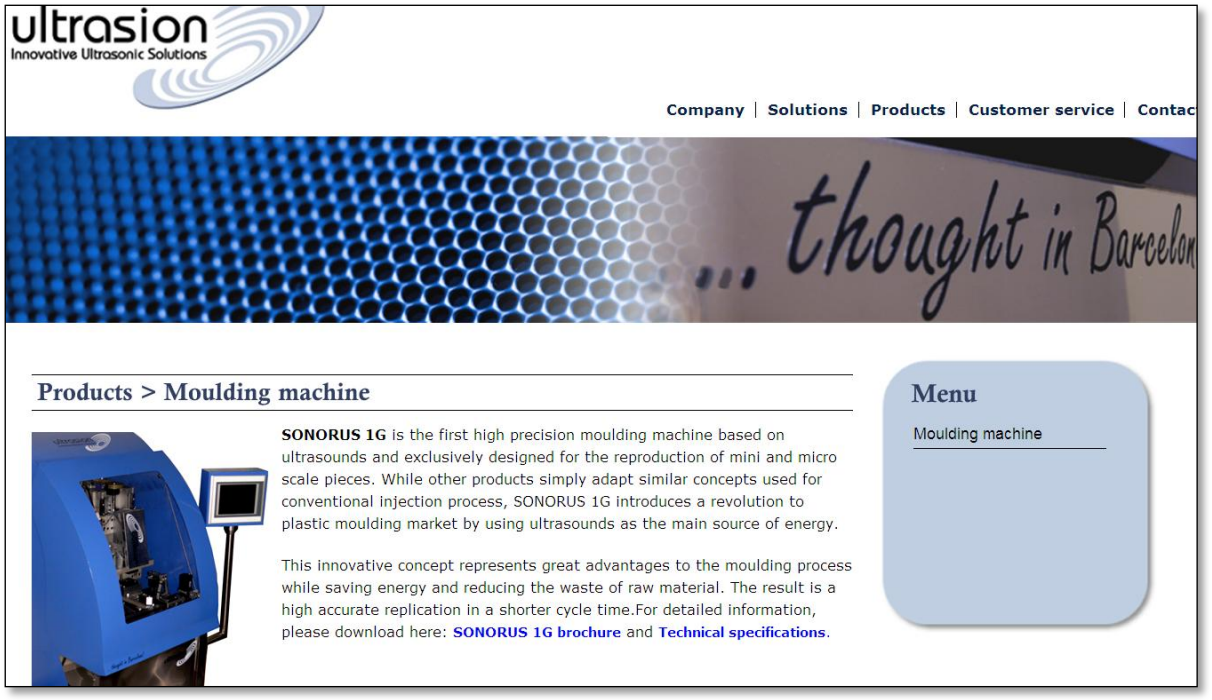


Figure 22: ULTRASION´s Web Site

Figure 3: ASCAMM´s Web site

1.2 Poster and leaflet

A poster and leaflets describing de Sonorus project have been elaborate.

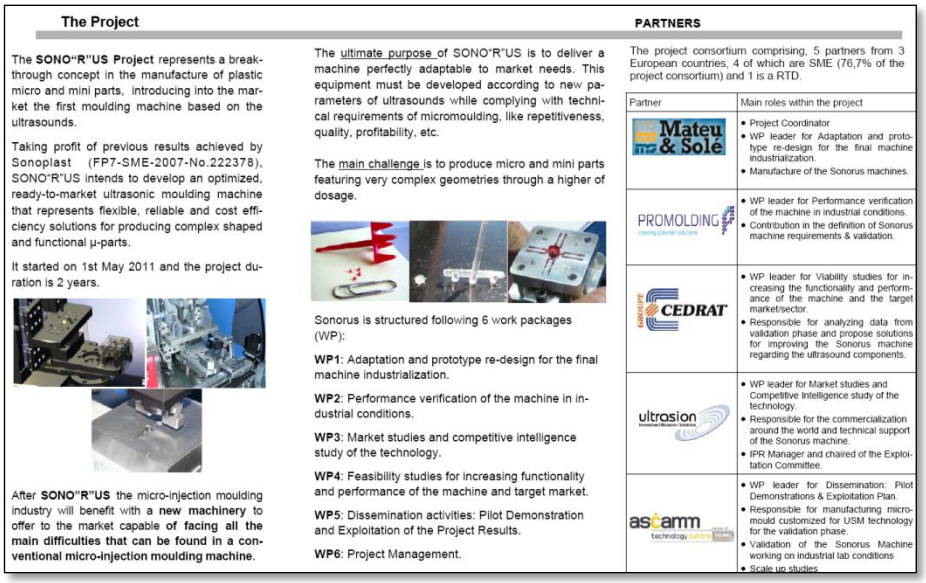
Both documents contain an introduction to the project, objectives, partner description, work packages interaction and so on.

The leaflets can be printed on both sides of an A4 page. These leaflets shall be distributed each time a partner have an activity related to dissemination.

The poster can be printed alone in a large size as A0. This poster shall be used during fairs, conferences, poster sessions, and so on.

Figure 41: Sono"r"us´s Poster

Leaflet is freely downloadable from the Sonorus website.



The Project

The **SONO"R"US Project** represents a breakthrough concept in the manufacture of plastic micro and mini parts, introducing into the market the first moulding machine based on the ultrasounds.

Taking profit of previous results achieved by Sonoplast (FP7-SME-2007-No.222378), SONO"R"US intends to develop an optimized, ready-to-market ultrasonic moulding machine that represents flexible, reliable and cost efficiency solutions for producing complex shaped and functional µ-parts.

It started on 1st May 2011 and the project duration is 2 years.

After **SONO"R"US** the micro-injection moulding industry will benefit with a **new machinery** to offer to the market capable **of facing all the main difficulties that can be found in a conventional micro-injection moulding machine**.

The ultimate purpose of SONO"R"US is to deliver a machine perfectly adaptable to market needs. This equipment must be developed according to new parameters of ultrasounds while complying with technical requirements of micromoulding, like repetitiveness, quality, profitability, etc.

The main challenge is to produce micro and mini parts featuring very complex geometries through a higher of dosage.

Sonorus is structured following 6 work packages (WP):

WP1: Adaptation and prototype re-design for the final machine industrialization.

WP2: Performance verification of the machine in industrial conditions.

WP3: Market studies and competitive intelligence study of the technology.

WP4: Feasibility studies for increasing functionality and performance of the machine and target market.

WP5: Dissemination activities: Pilot Demonstration and Exploitation of the Project Results.

WP6: Project Management.

PARTNERS

The project consortium comprising, 5 partners from 3 European countries, 4 of which are SME (76,7% of the project consortium) and 1 is a RTD.

Partner	Main roles within the project
Mateu & Solé	• Project Coordinator • WP leader for Adaptation and prototype re-design for the final machine industrialization. • Manufacture of the Sonorus machines.
PROMOLDING	• WP leader for Performance verification of the machine in industrial conditions. • Contribution in the definition of Sonorus machine requirements & validation.
CEDRAT	• WP leader for Viability studies for increasing the functionality and performance of the machine and the target market/sector. • Responsible for analyzing data from validation phase and propose solutions for improving the Sonorus machine regarding the ultrasound components.
ultrasion	• WP leader for Market studies and Competitive Intelligence study of the technology. • Responsible for the commercialization around the world and technical support of the Sonorus machine. • IPR Manager and chaired of the Exploitation Committee.
ascamm	• WP leader for Dissemination: Pilot Demonstrations & Exploitation Plan. • Responsible for manufacturing micro-mould customized for USM technology for the validation phase. • Validation of the Sonorus Machine working on industrial lab conditions • Scale up studies

Figure 52: Sonorus Leaflet front page

Project GOALS

The aim of the **SONO"R"US** project is the **improvement, optimization and industrial implementation of a pre-commercial moulding for the production of plastic parts in the micro and mini scale size**.

SONO"R"US project focuses part of its activities on **market analysis and business models for** reaching the **best strategy for the worldwide exploitation** of the commercial machine.

In order to achieve the expected results, the structure of the work plan has been focussed on:

1. Optimization of the prototype/machine by using technical criteria and relevant data parameters analysis.

2. Validation of optimization proposals: It has been analysed the necessity of developing 2 pre-commercial Machines (Macnine1 & Machine2) for reaching a complete validation of the technology to introduce the machine with guarantee to the market.

3. In a preliminary stage will be performed the validation of the first machine (Machine1) for an expert industrial laboratory.

4. With the best options (technical/cost analysis) from Machine1 tests, Machine 2 has the necessary aim to be tested in industrial conditions at full capacity.

www.sonorusproject.eu

"The research leading to these results has received funding from the European Union's Seventh Framework Programme managed by REA-Research Executive Agency http://ec.europa.eu/research/rea (FP7/2007-2013) under grant agreement n° 286552".

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"Machine for Microparts Moulding based on UltraSound excitation"

Figure 1.2.3: Sonorus Leaflet back page

Otherwise Promolding has designed a leaflet to distribute it to potential clients and customers that visit its facilities.

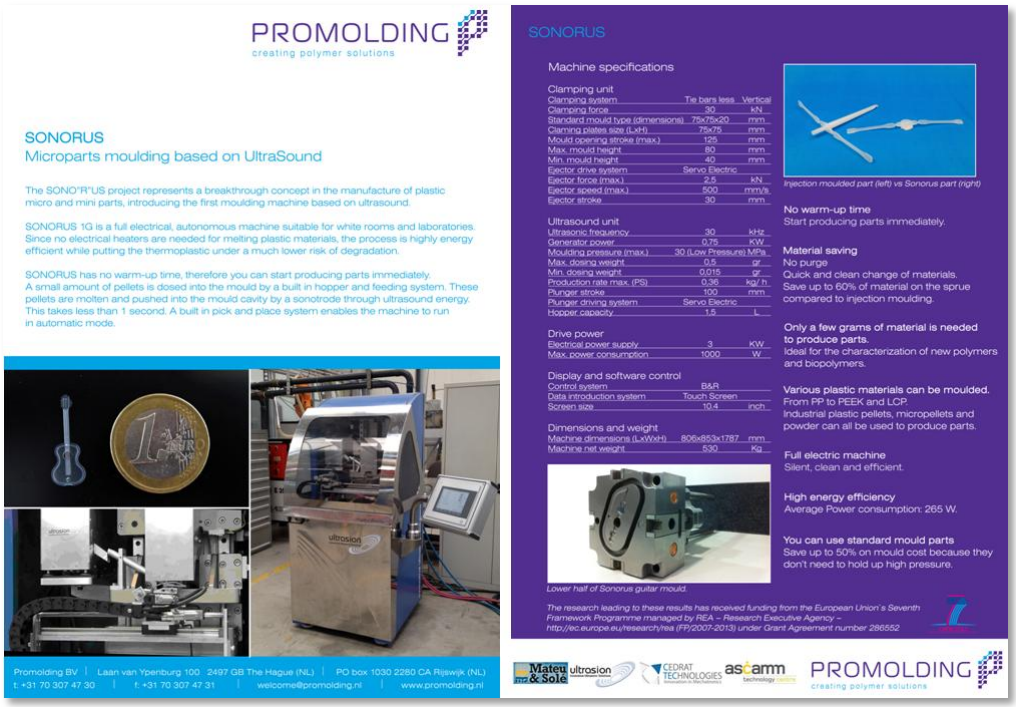
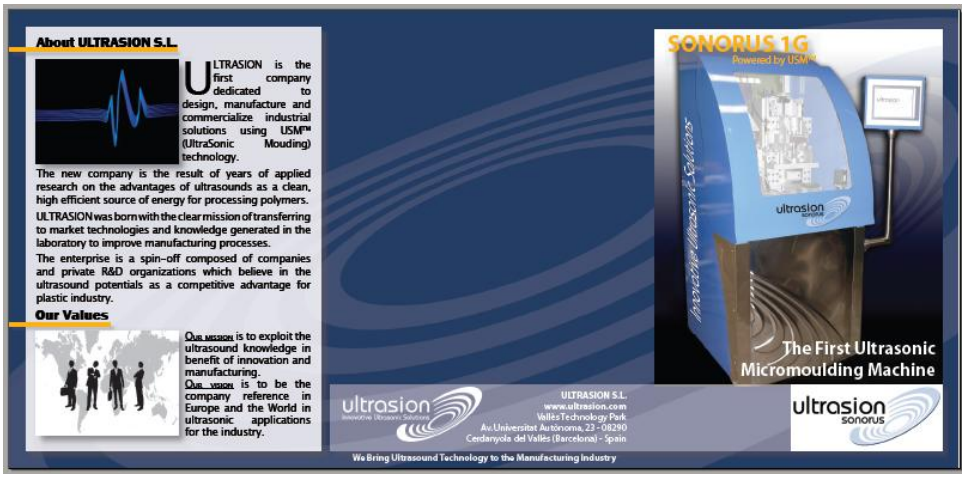


Figure 1.2.4: Promolding Leaflet of Sonorus



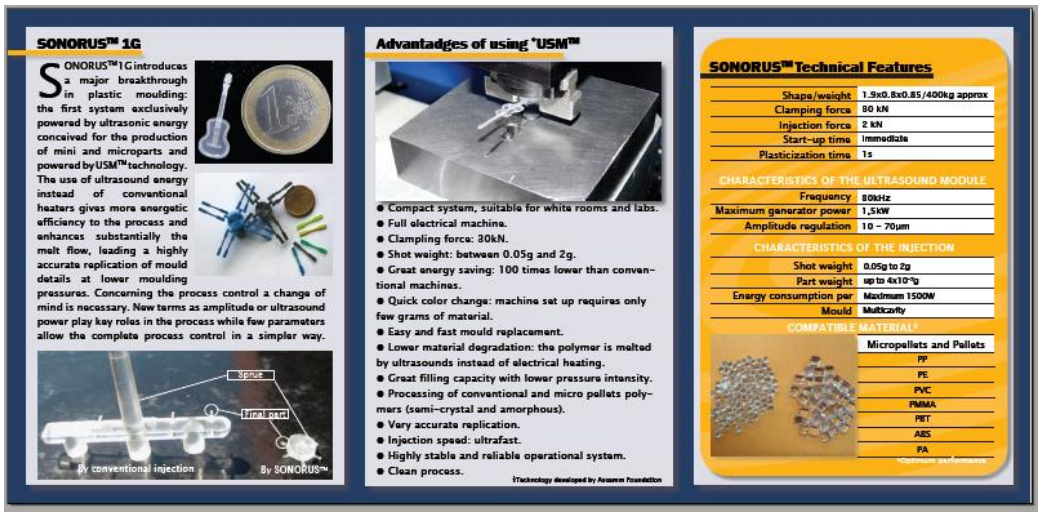


Figure 2.2.8: Ultrasion Leaflet of Sonorus

1.3 Newsletters and publications

Communications through partners' news letter throughout the project life time. CEDRAT TECHNOLOGIES and ASCAMM have presented Sonur"u"s and its activities in the frame of the project in their news letter, Cedrat News n°62 and AscammTech n° 6. Finally, it is advanced that in the next AscammTech issue (n°20), a new article about Sonorus machine and Sono"r"us project will be released.

ASCAMMTECH

Solucions innovadores | Soluciones innovadoras

Solucions innovadores | Soluciones innovadoras

Sonorus, la primera màquina d'emmotllament per ultrasons

Sonorus, la primera máquina de moldeo por ultrasonidos

SONORUS, LA PRIMERA MÀQUINA D'EMMOTLLAMENT PER ULTRASONS, HA ESTAT PRESENTADA FA POC A LA FIRA EUROMOLD A FRANKFURT I ES POSARÀ A LA VENDA COINCIDINT AMB EL PROXIM EQUIPLAST, EL NOVEMBRE DE 2011.

SONORUS FUNCIONA MITJANÇANT UNA NOVA TECNOLOGIA QUE HEM ANOMENAT USM (ULTRA SOUND MOULDING), PER PRIMERA VEGADA EN UNA MÀQUINA DE PRODUCCIÓ DE PECES DE PLÀSTIC, EL MATERIAL ES FON EXCLUSIVAMENT MITJANÇANT ULTRASONS.

La substitució de la unitat de plastificació convencional amb resistències elèctriques per un innovador sistema d'ultrasons aporta un increment dràstic de l'eficiència energètica del procés. A més, l'efecte sobre la fluidesa del plàstic és enorme i permet la rèplica precisa dels detalls de figura sense necessitat de forçar les condicions d'injecció. Les pressions d'injecció moderades, sigui quin sigui el material que s'injecta, han permès desenvolupar una màquina compacta i completament elèctrica, molt apropiada per a aplicacions amb elevats requeriments de precisió.

L'energia que necessiten les molècules de polímer termoplàstic per fondre i fluir es transmet des del generador gràcies al sistema acústic desenvolupat amb la col·laboració de Mecasonic. El plàstic es dosifica en forma de granissa i a cada cicle es fon i injecta tot el volum, de manera que el temps de residència del plàstic fos és mínim. Això representa un avantatge respecte de la injecció convencional, en la qual els temps de residència prolongats poden arribar a provocar

SONORUS, LA PRIMERA MÁQUINA DE MOLDEO POR ULTRASONIDOS, HA SIDO PRESENTADA RECIENTEMENTE EN LA FERIA EUROMOLD EN FRANKFURT Y SE PONDRÁ A LA VENTA COINCIDIENDO CON LA PRÓXIMA EDICIÓN DE EQUIPLAST, EN NOVIEMBRE DE 2011.

SONORUS FUNCIONA MEDIANTE UNA NUEVA TECNOLOGÍA QUE HEMOS LLAMADO USM (ULTRA SOUND MOULDING) POR PRIMERA VEZ EN UNA MÁQUINA DE PRODUCCIÓN DE PIEZAS DE PLÁSTICO, EL MATERIAL SE FUNDE EXCLUSIVAMENTE MEDIANTE ULTRASONIDOS.

La sustitución de la unidad de plastificación convencional con resistencias eléctricas por un innovador sistema de ultrasonidos aporta un incremento drástico de la eficiencia energética del proceso. Además, el efecto sobre la fluidez del plástico es enorme y permite la réplica precisa de los detalles de figura sin necesidad de forzar las condiciones de inyección. Las presiones de inyección moderadas, sea cual sea el material que se inyecta, han permitido desarrollar una máquina compacta y completamente eléctrica, muy apropiada para aplicaciones con elevados requerimientos de precisión.

La energía que necesitan las moléculas de polímero termoplástico para fundir y fluir se transmite desde el generador gracias al sistema acústico desarrollado con la colaboración de Mecasonic. El plástico se dosifica en forma de granza y en cada ciclo se funde e inyecta todo el volumen, de manera que el tiempo de residencia del plástico fundido es mínimo. Esto representa una ventaja respecto a la inyección convencional, en la que los tiempos de residencia prolongados pueden llegar

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MECHATRONICS

European Projects.

IMESCON Project

This project identifies critical performance limiting problems in machine tool design & damp; use and plans to address them by coordinating expertise from machining technology and ICT to realize a breakthrough concept that will transform machine tool designs to new levels. The Project idea is based on two crucial innovations: replacing the conventional machine tool interface by a self configuring and optimising mechatronic module called Joint Interface Module, JIM, made of functional materials, a wireless network consisting of these modules and a machining process proxy to enable plug and produce capability and adaptive control of the JIMs.

JIMs are designed to adapt the dynamic behaviour of a machine tool during its interaction with the cutting process. Traditionally dynamic instability in a machining process is controlled by tuning the process parameters to match with the inherent dynamic characteristics of the machine tool structure which often results in lowering the rates of production. The novelty of the JIM concept is instead of changing the process parameters; dynamic stiffness of the machine tool is controlled to maintain the process stability. The Distributed Wireless Configuration and Control Network enables plug and produce capability and decentralised control of JIMs through a wireless communication network. This development is essential for achieving modularity and plug and produce capability for JIM-based machine tools. Controlled design of JIMs allows the dynamic behaviour of the machine tool to be predictable with more accuracy.

The mechatronic design of the JIM includes an integrated control system and an embedded intelligence which enables it to be self-adaptive for optimising the dynamic stiffness within its design range during a machining process. The results of research and development work will be demonstrated in industrial context and there is a dissemination and exploitation activity to reach out potential stakeholders. In this project, CEDRAT TECHNOLOGIES provides dedicated high force piezo actuators and power electronics.

Thomas Porchez - CEDRAT TECHNOLOGIES.

PPSMPAB Project

The Green Rotorcraft Research Consortium of Clean Sky is aiming to develop innovative electrical systems and technologies improving overall rotorcraft efficiency and reducing carbon. In The work package GRC3.7 supported by Eurocopter Gmbh "energy for piezo-actuators" focusing on power electronics systems, CEDRAT TECHNOLOGIES has won the call to develop with the GZELAB lab a high power driver for aeronautic applications to supply large piezoelectric actuators: After a fruitful collaboration with the GZELAB in the AVIBUS project to develop an active vibration tool holder, this the second project will establish CEDRAT TECHNOLOGIES in the power electric domain for the piezoelectric actuators.

Olivier Sosnicki - CEDRAT TECHNOLOGIES.

E-LIFT3 Project

Project for powering a variable distribution with 3 degrees of freedom for gasoline motor
In the framework of warming climate, the reduction of CO2 emissions is a challenging issue imposed by most powerful world wide countries to automotive industrial companies. e-Lift3 project tackles the issue through the design of variable electric distribution, which allows to optimise the consumption of modern gasoline engines. The system can be installed on the admission or exhaust devices for a part or the full set of engine valves. Works on the control of the combustion phenomenon will allow reduction of emitted polluting gas such as unburned hydrocarbon, nitrogen oxides, carbon monoxide, particles, etc. Furthermore, the new device should improve significantly the driving pleasure.
CEDRAT TECHNOLOGIES is implied in the project mainly for designing and prototyping a controllable electromagnetic actuator fitting with the 3 degrees of freedom specification.

Patrick Meneroud - CEDRAT TECHNOLOGIES.

SONO«R»US

SONORUS is a Demonstration Project from the Seventh Framework Programme (FP7), with a funding scheme as a small or medium-scale focused research for the benefit of SME's. It started on May 1st 2011. The project duration is 2 years. A breakthrough concept in the manufacture of plastic micro and mini parts: the SONO"R"US Project will introduce into the market the first moulding machine based on the ultrasounds. Taking profit of previous results achieved by Sonoplast, SONO"R"US intends to develop an optimized, ready-to-market ultrasonic moulding machine that represents flexible, reliable and cost efficiency solutions for producing complex shaped and functional µ-parts.

Nabil Benchelkh - CEDRAT TECHNOLOGIES.

MISAC2012

It is possible to generate a haptic recognition when touching a vibrating surface. Furthermore the feeling of local manual depression can be achieved on a static surface. The vibration is so fast that the motion is not perceptible visually. ne application of this phenomenon is to simulate the displacement of a touch pad push button in order to enhance the physical feedback of the user. he project focuses in automotive cockpit with two main objectives: On the one hand the study and the production of haptic signals, on the other hand the definition and the realisation of actuators able to produce and support them".

Alexandre Pagès - CEDRAT TECHNOLOGIES.

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CEDRAT News - N° 62 - October 2011

Figure 1.3.1: CEDRAT & ASCAMM Newsletters

SONORUS European Project

Background

Biomedicine, electronics, optics, precision engineering…, are currently strategic fields with increasing trend of miniaturization. In this context, polymers play a critical role due to their competitive price, adjustable properties by the use of fillers and reinforcements and good processability.

Up to now, injection moulding has proved to be the most precise, flexible and cost efficient technology for the large-scale replication of thermoplastic parts. In spite of the economic potential, the current micro moulding market still present many limitations in terms of investment required, time-to-market of products and production reliability. The reason behind is that existing technologies for manufacturing of plastic µ-components are not fully developed up tp now. They are simply based on the same concepts (process and tooling) used for the injection of bigger parts. This results in technical problems such as dosage precision, process accuracy and repetitiveness.

Many efforts have been done in order to overcome it.

However, only ultrasound injection moulding was able to face the main difficulties mentioned previously. Sonoplast project has built a prototype which allowed defining, validating and establishing the requirements to properly melt plastic material and fill small cavities. This very stable process was able to produce mini parts with higher quality compared to conventional technologies.

Even though, there are still relevant features to improve in order to achieve a commercial machine.

In this context, SONO"R"US project represents the opportunity to improve and optimize key features of the prototype. Once the technical improvements are implemented, the new machine will be tested in a real industrial environment. Beside the technical developments, as a parallel issue, a study on some possible new markets will be carried out; the goal here is to assure the solutions fully complies with all the requirements of the identified key-sectors.

Objective

The aim of SONO"R"US is to allow redefining some of the key features of the prototype developed under the Sonoplast project. The result will be a ready-to-market micro moulding machine that represents flexible, reliable and cost efficiency solutions for producing complex shaped and functional µ-parts.


La Vanguardia - Monográficos 22/09/2011

ULTRASION

Ultrasonidos para la mejora e innovación de procesos industriales

Ser la empresa de referencia en Europa y en el mundo en aplicaciones de ultrasonidos para la industria. Con esta ambiciosa visión trabaja Ultrasion, una empresa especializada en el diseño, desarrollo y comercialización de soluciones basadas en Ultrasonidos de Alta Potencia. De momento ya pisa fuerte, compitiendo con empresas alemanas y japonesas en la división de honor...

Resultado de la alianza entre dos centros tecnológicos, Fundació ASCAMM y CETEMMSA y participada por empresas industriales privadas (Plastiasite, Aero Engineering, Mateu & Solé y Mecanotic), Ultrasion nace en 2010 fruto de cinco años de investigación en torno a las ventajas de los ultrasonidos como fuente de energía limpia y altamente eficiente, aplicable a procesos de manufactura. Sobre la base de su conocimiento, su equipo desarrolla soluciones sostenibles, de alto rendimiento y cost-efficient aplicadas a procesos productivos que permiten a la industria de la manufactura innovar en sus productos y mejorar sus procesos.

Ultrasion se establece con el apoyo del Programa Innocash del Ministerio de Ciencia e Innovación, y la Fundación Española para la Ciencia y la Tecnología (FECYT).

APORTACIONES DE ULTRASION

Ultrasion aplica creatividad científico-tecnológica rompiendo paradigmas en los procesos de manufactura. Sobre esta base está a punto de iniciar la comercialización de SONORUS, la primera máquina de micromoldeo de termoplásticos, basada en USM™ (Ultrasonic Moulding Technology), una innovadora tecnología de moldeo desarrollada por la Fundación Privada ASCAMM, un centro tecnológico avanzado de Cataluña de la red Tecnio. "Con su flancho exclusivo para la inyección de micro y mini piezas, la máquina presenta ventajas respecto a las actuales soluciones disponibles en el mercado, como mayor eficiencia energética y precisión de la pieza final, y reducción de desperdicio de materia prima. El resultado es "un proceso más eficiente y preciso" -asegura Xavier Planta, Director General de Ultrasion- lo que orienta esta tecnología al sector salud, electrónica y automoción, entre otros". Dicho equipo será presentado, como novedad mundial en la próxima feria de plásticos que se celebrará en Barcelona, Equiplast el próximo mes de Noviembre. Dicha presentación se encuentra enmarcada dentro del proyecto SONOTECH, financiado por la Comunidad Europea dentro del Séptimo Programa Marco (FP7) - subprograma "Research for SME - Demonstration actions". Tiene una duración de 2 años y el objetivo principal es introducir en el mercado la primera máquina de moldeo basada en ultrasonidos para la fabricación de micro y mini piezas de plástico.

Al margen de la línea de micro moldeo, Ultrasion está desarrollando otras líneas de investigación e innovación, que abarcan desde la mejora de los procesos de transformación de aleaciones ligeras, que permitirán conseguir piezas de aluminio con mayores prestaciones y de forma más eficiente, pasando por una nueva y revolucionaria tecnología de rapid manufacturing denominada UDM™ (Ultrasonic Deposition Modelling), basada en un concepto de sistema universal, adaptable a cualquier máquina, que permita fabricar piezas de rapid manufacturing utilizando como base cualquier material termoplástico del mercado. Esta tecnología compite directamente con tecnologías desarrolladas en países líderes en el sector, como Alemania, Japón EEUU, Israel situando a España y a Ultrasion en la élite mundial.

En el marco de su campo de trabajo, "Ultrasion avanza en su objetivo de aplicar innovación, creatividad y conocimiento en soluciones para la manufactura. Cataluña ha de seguir siendo puntera industrialmente" -afirma Xavier Planta, Director General de Ultrasion y añade, "pero no con la misma industria de hace años, nos debemos reinventar y adaptarnos a las nuevas exigencias de los mercados que demandan más calidad y productividad. Iniciativas como la de Ultrasion contribuyen a ello, al tiempo que suponen una apuesta por la reindustrialización a partir de un producto propio de alto valor añadido".

ultrasion

MÁS INFORMACIÓN
www.ultrasion.com

FINAL SONORUS MACHINE

Under the umbrella of the SONO"R"US Project, it has been developed the first commercial moulding machine based on ultrasounds, called SONORUS 1G.

Within SONO"R"US project, SONORUS 1G went through an industrialisation process which led to its validations and market launch. Moreover, several enhancements have been made to fulfil market needs as well as improving market uptake.

As a result, experts within the project have integrated into SONORUS 1G a variety of control options for the automation of the process and optimisation of a wide range of product needs. Today the machine is using the latest and greatest software routines to deliver plastic parts with high precision and performance. It also uses protected close-loop sequences that ensure the correct plastic moulding conditions. Finally, SONORUS 1G has improved its existing connectivity options in order to monitor accurately the traceability of the process.

SONORUS 1G is highly reliable and energy efficient– up to 90 times lower power consumption compared with traditional injection moulding technology-. Since no electrical heaters are needed, the process is highly energy efficient while putting the thermoplastics under a much lower risk of degradation, being ideal for production in white rooms and labs. Additionally, our low stress process involves a reduction in tooling costs estimated between 25% and 35%.

In the early 2012, a Beta Tester programme was carried out according to SONO"R"US Project plan with the aim of integrating added-value improvements to make SONORUS 1G machine more competitive. One of the main purposes of the pilot test was to collect information and advice from participants (industrial companies, universities, labs).

The Beta Tester programme gave us the chance to explore the potential markets. For instance, medical is now one of the targeted markets because plastic micro and mini parts are required with high precision and material no degradation such as catheters parts, hearing aid devices components, and dental applications. Our new revolutionary manufacturing technique has proved efficient and potential medical companies have already expressed their interest in acquiring the machine. Another example is the electronics industry, especially when it comes to overmoulding of micro-component parts. This has also resulted in another significant target market since our ultrasounds-based manufacturing process entails an important reduction in raw material consumption (no degradation, no waste in purging barrels, smaller sprues and runner systems…) which leads to saving costs.

SONO"R"US project has been co-funded by the European Union's Seventh Framework Programme (FP7) – under the "Research for SME-Demonstration actions", managed by REA-Research Executive Agency.

The project, with a two-year duration (2011-2012), comprised the following partners: Ultrasion (Spanish company that commercialises industrial solutions based on high power ultrasounds) Mateu y Solé (Spanish manufacturer of plastic moulding equipment) Promolding (Dutch company specialised in injection moulding process) Cedrat (French company specialised in Ultrasounds technology development) and Ascamm (Spanish Industrial Technology Centre specialised in production of innovative industrial technologies).


PLASTICS NEWS, April 4, 2011 • 49

Amsler demonstrates inspection unit

By Jessica Holbrook
PLASTICS NEWS STAFF

ORLANDO, Fla. — Amsler Equipment Inc. (Booth 2303) now is offering servo stretch rods standard on its reheat stretch blow molding machinery.

The company is running an all-electric cosmerplast, three-cavity reheat stretch blow molding machine featuring the servo rods at NPE. The machine can run with one to three molds and can make bottles up to 5 liters.

Servo rods offer several advantages over pneumatic ones, said Hoyt Amsler, sales and marketing manager. They're more energy efficient, offer a higher output, and are easy to set up and use, she said.

"Once you get to a certain level of processing, you should just have servo stretch rods," Amsler said. "It's faster, it's cheaper, and you get more back as a result."

The company is running a line of oval trigger bottles on its machine, switching cavity size throughout the day, to demonstrate the advantages of its servo rods.

Another switch is based in Richmond Hill, Ontario, is the only North American manufacturer of PET blow molding equipment, Hoyt Amsler said.

The company also is using NPE to demonstrate the newest unit in its quality-inspection line, the hybrid leak tester. The equipment is the fourth piece in Amsler's quality-inspection series and features a lasing screw and revolution gating for use with bottles that are difficult to convey or prone to stinging.

The unit offers higher output, flexibility and easy tool-free changeovers, according to Amsler.

The five-head unit can run up to 250 bottles per minute and can be used for plastic containers up to 2 liters.

Amsler also offers a single-head in-line unit without a lasing screw. It boasts a smaller carbon footprint and has no gates or change parts, Hoyt Amsler said.

All of the company's new equipment is available commercially. Amsler also recently added new sales representatives in North America through Chicago-based GMK Advisors Inc., she said.

Amsler's Hybrid-head leak tester

Firm readies ultrasound system

By Roger Renstrom
PLASTICS NEWS STAFF

ORLANDO, Fla. — Spain-based technology startup Ultrasion SL aims to use ultrasound to improve processing of plastics, aluminum and magnesium.

"Ultrasound can sterilize materials" without need for thermal energy, said Xavier Planta, general manager of Ultrasion and innovation director of technology incubator Parcbit Privada Asociada. Both are located in a business park in Tarragona, near Barcelona, Spain.

Ultrasion was formed in July 2010 and, in May, anticipates delivering Sonoran-brand prototype processing units to research institutions Universitat Politècnica de Catalunya in Barcelona and Universitat de Girona in Girona.

"We have two potential commercial customers, one each in Switzerland and the Netherlands," Planta said.

Planta said the system to transfer market technologies based on ultrasounds is priced at 80,000 euros ($105,500).

The Tarragona organization employs about 200 in a center for creating new plastics, metals and stamping technologies and providing facilities to end users. Ascamm operates with a 2011 budget of 12 million euros ($15 million) from private sources.

Netstal molds caps at show

By Bill Bregar
PLASTICS NEWS STAFF

ORLANDO, Fla.—Netstal Machinery Inc. (Booth 1903) is molding caps for beverage bottles on a 72-cavity mold during NPE2012, every 3.5 seconds on an Elion press with 280 metric tons of clamping force.

The hybrid Elion has an in-mold optical inspection system.

Bertland Metz, president and CEO of the Swiss parent, Netstal-Maschinen AG, said the Elion and the Evos press both save energy from heating and feed it back into the machine.

In an April 2 news conference at NPE, Metz said the cycle time for the 2.18 gram closures has been cut from 5 seconds four years ago to 3.5 seconds today.

A Netstal press also is on display showing an in-mold labeling application at the Husmen Automation Corp. exhibit (Booth 1360). "Netstal is No. 1 in the market when it comes to in-mold labeling applications," Metz said.

Figure 2.2.8: Example of articles published

On September 22nd 2011, La Vanguardia, the most important Catalonian newspaper, published an article about Ultrasion and its innovative lines of research where it was mentioned Sono"r"us project. **On January 28th 2012. El País,** the largest Spanish newspaper, pointed out that Ultrasion was a successful company which based it growth in its R&D projects. Other publications were released in the following media: NPE magazine - Orlando (USA) – on April 4th, 2012; K-PROFI Magazine and Plasticos Modernos magazine both articles on October 2012. In total seven articles has been released throughout the project.

1.4 Fairs

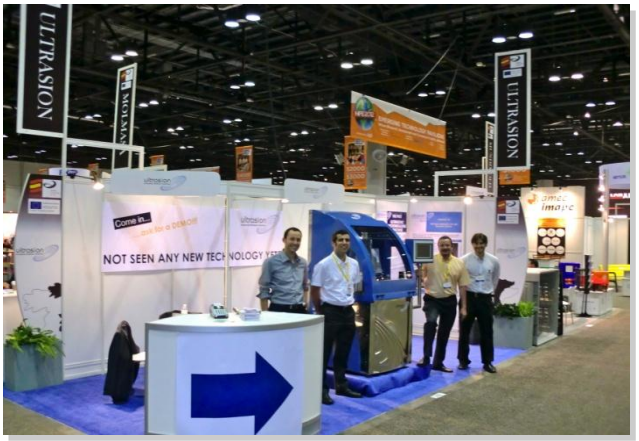
The following aims to describe the most relevant fairs and exhibition attended by partners during the project:

SONO"R"US was been presented in two exhibitions during 2011: **Equiplast 2011,** the most important Spanish trade exhibition for the plastics and rubber sector and held on November 14-18th. **Swiss Plastics,** one of the premier events in Lucerne (Switzerland) for the plastics industry which brings together national and international companies that present their novelties such as new products and processes for a diverse range of industries like medicine, micro-systems or automation.

In both events it has been used promotional material such as posters and leaflets and announced its participation on the website.

Figure 6: Fairs Equiplast 2011

In 2012, SONO"R"US was been presented in the **NPE 2012** (Orlando, FL) the most important International Plastics Exhibition in the USA in which 1,830 companies offer their latest products and technologies for a wide range of sectors (more than 60,000 visitors). More than 160 organisations showed real interest for Sonorus machine which most of them (80% of total) came from the medical sector.



Furthermore, In June 2012, Cedrat attended the Actuator Exhibition and Conference held in Bremen (Germany). The13th International Conference on New Actuators is the most important market place to meet leading international specialists, to share their expertise and to start business co-operations in the field of new actuator technologies. There were about 500 participants from more than 30 countries.

With respect to the **7th International Exhibition on Smart Actuators and Drive Systems**, the show presented components, system approaches and applications of smart actuators and low-power electromagnetic drives based on conventional (electromagnetic) and innovative working principles (new actuators) and associated subjects. The range of topics also included measurement techniques, control concepts and circuits, driver components and units, system integration, layout and

simulation tools etc. Cedrat got 40 contacts that were interested in usm™.

On February 2013, Ultrasion participated in the **Südtec / Medtec show (Germany)** which is targeted to medical devices. This event received 35,000 visitors.

All the dissemination material underlined that_Sono"r"us project has received funding from the European Union's Seventh Framework Programme managed by REA-Research Executive Agency http://ec.europa.eu/research/rea (FP7/2007-2013) under grant agreement n° 286552.

1.5 Project Video

On April 25th, 2012 it was disseminated an amateur video in which it was described the main features and advantges of Sonorus machine. You can watch it on: http://www.youtube.com/watch?v=sl-b3Kmim2I

On April 30th, 2013 a professional video is to be released where it is described the advantages of the machine and technologies as well as the environmental and economic gains. The video can be downloaded from: https://www.yousendit.com/download/UVJpcXlnYTI1aVp2TzhUQw

2. Summary of the dissemination activities

Events	Quantity	Country
Newsletters & E-zines	9	EU, USA
Press releases	7	Europe
Exhibition & Conference	19	EU, USA
Stakeholder meetings	5	Europe
Website	1 (project website) +5 (partners website)	International

The following table describes the dissemination activities carried out throughout the project by partner:

2.1 ASCAMM

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
2011	Web SONO"R"US: www.sonorusproject.eu	Others	International	General Public
2011	Web Ascamm - International Projects (Spanish, English & Catalan)	Others	International	General Public
2011	Creation of General Brochure SONORUS PROJECT	Others	International	Specialized
2011	Brochure Distribution at Ascamm Technology Centre	Others	International	Specialized
2011	ASCAMMTECH nº 16 (Catalan, Spanish & English); Sonorus - the first ultrasonic moulding machine	Newsletter	Spain	1,000
2011	Web - ASERM Press Release; First commercial machine for microparts moulding based on ultraSound Excitation	Web	International	General Public
2011	www.moldesymatrices.com News: Ascamm assists in the development of the first commercial machine for microparts moulding based on ultraSound	Web	Spain	Specialized

2.2 CEDRAT

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
August 2011	Press release on the webpage dedicated to collaborative projects on our website	Wide spectrum	Worldwide audience Top 3 countries over the last year: 1-France 2- 3-Germany	About 10,000 visitors per month
September 2011	B2B discussion about the realization of a miniature injection pump which could benefit from the SONO"R"US technology	Company EVEON		2
September 2011	EMO exhibition	Machine tool industry	International / German majority	About 140,000 visitors in 2011- about 30 direct contact on the booth

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
October 2011	Hall 11 stand B07 Ezine "Cedrat News" Issue n°62 (p.18)	Wide spectrum All the prospects and clients from our database	(90 000 visitors from) Worldwide audience	 + 10,000
November 2011	B2B discussion about the realization of a miniature mechatronic system which could benefit from the SONO"R"US technology	Company SORIN		4
January 2012	BIOS fair San Francisco, USA	Medical industry	International	A dozen contacts generated
February 2012	MD&M Anaheim, USA	Medical industry	International	50 contacts generated
April 2012	Medtec Lyon	Medical industry	European, mostly French	37,500 visitors and 10 contacts generated

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
April 2012	Exhibition (HMI) Hannover Messe für Industrie	Wide spectrum – a lot of innovation and R&D managers from various industries (machine-tool, medical, airspace…)	International	230,000 visitors and 50 contacts generated
June 2012	Exhibition & Conference Actuator 2012 in Bremen	Innovation and R&D managers, Scholars, Engineers, from various industries (machine-tool, medical, airspace, automotive…)	International	5,500 visitants at the exhibition and 500 at the conference; 40 contacts generated
November 2012	New Cedrat Technologies Website http://www.cedrat-technologies.com/fileadmin/user_upload/cedrat_groupe/Technologies/Actuators/Sonic%20%26%20ultrasonic%20generators/SONORUS.pdf http://www.cedrat-technologies.com/en/services/engineering/collaborative-projects.html	Multisectoral	International	About 10,000 visitors per month

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
January 2013	Newsletter to announce the new Cedrat Technologies Website	Wide spectrum (machine-tool, medical, airspace…)	International	Sent to over 2,500 contacts from our commercial database
April 2013	Exhibition (HMI) Hannover Messe für Industrie	Wide spectrum – a lot of innovation and R&D managers from various industries (machine-tool, medical, airspace…)	International	over 230,000 visitors and minimum 50 contacts expected

2.3 ULTRASION

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
September 22nd 2011	La Vanguardia, National newspaper	General public	Spain	846,000
November 14-18th 2011	Equiplast 2011, Barcelona	Plastics and rubber sector	Spain	7,000
January 17-19th 2012	Swiss Plastics	Medicine, micro-systems or automation.	Swiss	5,000
January 28th 2012	El País, National newspaper	New technologies section	Spain	1,961,000
April 1-5th 2012	NPE 2012	Plastics and rubber industry	Orlando (USA)	60,000
April 4th 2012	Article (Publicity), Plastics News (NPE magazine)	Plastics and rubber industry	Orlando (USA)	60,000
September 2012	MMLive	Micro-molding industry	UK / Ireland	
October 2012	K-PROFI Magazine	Plastics industry	Germany, Swiss, Austria	15000
October 2012	Revista Plasticos Modernos	Plastics industry	Spain, Portugal	30000
April 2013	ARW	Research & Investigation	Spain, Europe	5000
February 2013	Südtec / Medtec show (Germany)	Medical and Micro	Europe / WW	35,000

2.4 PROMOLDING

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
Nov 30th - Dec 1st, 2011	Precisiebeurs Fair	Industry	Nederlands	20
February 3rd 2012	Explanation at Promolding	Students	Nederlands	24
April 13-15 2012	Esef technishow Fair	Industrial partners	Nederlands	30
Throughout the project	Personal explanation at Promolding	Promolding Customers	Nederlands, USA, Belgium and England	50
Frequently	Explanation at Promolding	Students	Netherlands	24
June 28th 2012	2nd Annual Conference Advance Moulding Technologies Brussels	Professional	Europe	150
October 2012	Article in K-Profi magazin	Professional	Germany, Austria, Swiss	15,800 copies
October 2012	Explanation to customers and distribution of leaflets	Customers	Europe and USA	40
October 2012	Revista Plasticos Modernos	Plastics industry	Spain, Portugal	30000
April 2013	ARW	Research & Investigation	Spain, Europe	5000
February 2013	Südtec / Medtec show (Germany)	Medical and Micro	Europe / WW	35000
December 2013	Sonorus Machine-2 at Precisiebeurs Veldhoven	Professional	Europe	3500

2.5 MATEU I SOLE

Date	Type & Where	Type of Audience	Countries Addressed	Approx. Size of Audience
September 20th 2011	E-zine: Mundoplast	Plastics and rubber sector	Spain	See article
October 19th 2011	E-Zine: Inter empresas	Plastics and rubber sector	Spain	See article
November 14-18th 2011	Equiplast 2011, Barcelona	Plastics and rubber sector	Spain	7,000
April 19th 2012	Article, Website Mateu i Solé	Plastics and rubber sector	Spain	See article
April 19th 2012	E-Zine: Inter empresas	Plastics and rubber sector	Spain	See article