

LIFE 09 ENV/IT/000185

MDPATC

NEW ECO-PROCESS OF SUPERFICIAL TREATMENT
OF THE METALLIC WIRE PRODUCTS

Disseminative Report



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1. Goal of the report

The disseminative report's objective is to show the disseminative activities implemented during the project LIFE "MDPATC" in order to increase the visibility of the project itself and the LIFE program.

The dissemination activities took place during the whole length of the project, from 01/11/2010 to 31/10/2013, together with the activities implemented by Metallurgica Abruzzese s.p.a., coordinator of the LIFE project "Ultra Crash Treatment", which was developed in Mosciano Sant'Angelo premises.

In the present report, all the activities developed will be analyzed and will be given explicative pictures of the main outcomes.

2. Adressees

The addressees of the disseminative activities have been mainly the following:

- Companies of the metallurgic sector, which operate with wire rod implementing wire drawing and zinc-coating;
- Companies working with iron alloys through cold plastic deformation or zinc coating treatments;
- Industry or sector associations;
- Third grade schools focused on mechanical sector and similar sectors;
- Universities, in particular the faculty of engineering;
- All the users of products deriving from the wire rod (e.g. building companies);
- Sellers of products deriving from the wire rod.

Each of the mentioned categories has been reached with a different mix of marketing strategies and tools, able to maximize the impact of the project. For example, in order to attract the attention of the University and the scientific community, it has been published an article written by Prof. Veronesi who has also presented the project and its scientific findings at the international conference on microwaves AMPERE 2011 while the generic public has been targeted with an explicative video and newspaper articles.

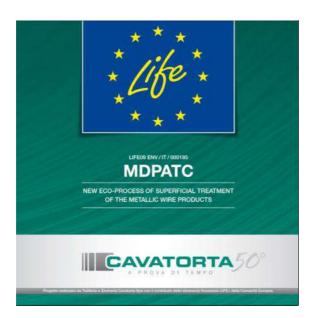
3. Dissemination activities

We list below the Dissemination activities implemented during the project.

3.1. Notice boards

It has been realized different Notice Boards to be positioned inside the company and used during trade fairs:

- 1 Notice Board (150x150 cm) has been positioned outside the premises of Trafileria e Zincheria Cavatorta in Calestano;
- 2 Notice boards (80x100 cm), one of them has been positioned in the offices of Calestano premises while the other one in the offices in Parma.



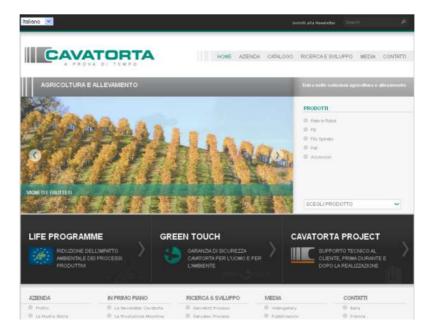


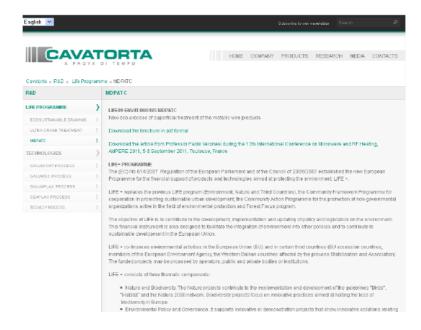


3.2. Website

It has been realized a section of the web site dedicated to the project "MDPATC", as it was already been done for the LIFE project "ESD" of Metallurgica Abruzzese, which has already been concluded.

The section of the web site dedicated to "MDPATC" can be reached from a section dedicated to the LIFE program in the homepage which groups all the projects implemented through the LIFE European instrument. In the above mentioned section are present also other projects such as "Ultra Crash Treatment" and "ESD".





3.3. Newsletter

Together with the new website, the company has activated new tools for direct communication with clients such as the newsletter. This system substitute the House Organe Pagine which won't be implemented by the company in the future. From the first months of 2012, Trafileria e Zincheria Cavatorta has officially began the new communicative campaign; 2 newsletter have been

sent to clients bearing a LIFE reference and a description of the projects implemented:

- Newsletter "Moonline" September 2013;
- Newsletter "Greentouch" November/Dicember 2013;
- Newletter "Edilportale" 9 July 2012.

The lonely first newsletter has generated extremely positive results:

The newsletter has been sent to 7624 people and has been read by 2350.





3.4. Specialized Magazines

The company has published different articles during the project, some of them on specialized magazines, some other on scientific journals:

"Il centro" sezione "Economia Abruzzo" – 17 December 2011;



• "Tecnologia del filo" – March 2012;



 Scientific publication 2011 written by Prof. Veronesi and collaborators, titled "Continuous Microwave Plasma Processing of Cold Drawn Steel Wire Rod";

Continuous Microwave Plasma Processing of Cold Drawn Steel Wire Rod

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> Giovanni Cavatorta Trafileria e Zincheria Cavatorta, Calestano, Parma, Italy

Aburax — Surface modification of cold drawn steel wire rod has been performed using a set of microwave plasma torche operating at 2.6 (10%). Also maximum power, with the sins is operating at 2.6 (10%). Also maximum power, with the sins is prior to be the proper to be the position of the prior to be the proper to be the position of the prior to be the proper to be properly the proper to be properly the proper to be the properly the

Keywords: plasma torch, numerical simulation, metallurgy, surface engineering.

I. INTRODUCTION

Were drawing of steel consists in a series of subsequence section reduction, satisfup from a ware rook, with interneticular interestion reduction, starting from a ware rook, with interneticular interesting the construction of the construction ware facilities usually starts with a colf of hot rolled wire, whose surface is first mechanically or elementally treated in remove scales. It is then fed into continuous wire drawing machine. When the final shape is reached, the wire surface is contaminated by the following size of the other starts and dating drawing operations,

This surface contamination must be removed before an opreceptive contage like his, depositing can be applied. This is operated by the control of the control of the control of the balcochoric and sulphuric acid water solutions, design chemical methods (in diducted sulphuric acid water solutions must of current) or by the less effective mechanical method critical deformation in passing trough dies or by series to costing and favour reactions with the sixel substrate, the marker need to be prepared, typogrid by autonosium etherical treatments and other fluxes and condo-inhibiting compounds. The removal of surface contamination could be forwards the removal of surface contamination could be forwards for the control of surface contamination could be forwards case of administration alloys III. showing that with a progecent of aluminism alloys III, showing that with a progece control of the process parameters, like obstract field value as Microwave induced plasmas possess some importuni henelis, such as the high efficiency in generating chemically active species, relatively high electron density 122. Inst and norty contamination-free processes and outpabliny of operating in a saide pressure range [31]. One of the main technical difficulties in antiphenoming this sechiagae, to the need of a of the load, deriving even by small changes, to the need of a contamination of the load, and the load of the load, deriving even by small changes in the processes as the second of the load, deriving even source could significantly reduce the sensitivity of microwave systems to load variations, and the knowledge of the possible system statuses could being designing and implementating a simplex: faster and cheaper automatic impedance matching device comply switching between a fixed number of possible statuses without singulationally affecting the plasma homospacies.

Existing electromagnetic field medelling software can help the designer in accordant for such analy variations, especially when direct measurements or existing applications are no possible or available. However, it is necessary to describe plasma as a local on the numerical simulation, and this ossulfly posses problems because it requires complete fifty compled thermodynamic, fluid-dynamic and electromagnetic models. A possible alternative, at the microware frequencies, is no requested plasma tike a dielectoria, some microware interaction, change current both in orderiorie require (4). A variation of the plasma changes can be represented by a variation of its equivalent permittivity, and implemented on the node.

Aim of this work is to present the design of a microwava atmospheric phomos torth and the preliminary results obtained in processing cold drawn steel red. This new treatment, for iron-based alloys, besides providing cleaning, is expected also to perform simultaneously heat treatments (annealing, thanks), is expected to be perform simultaneously heat treatments (annealing, thanks), in the high temperature and high host transfer coefficient from the plasma torich to the wire) and surface activation, in a single stem.

II. NUMERICAL SIMULATION Numerical simulation of the plasma touch was limited to the fectromagnetic field destribution in the applicator and the Pubblication on the Edilportale website of the following article "http://www.edilportale.com/news/2011/10/aziende/cavatorta-per-lambiente-con-il-progetto-mdpatc_24485_5.html" dated 25/10/2011;



- Pubblication on the following specialized magazines of the insert related to Life projects reported below:
 - IMPIANTI SOLARI October 2013;
 - PROGETTARE June 2013;
 - CASA E GIARDINO November 2013



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The company has also made use of 3 web advertising tools bearing a reference to the project:

- PUSH BAR visible in the period November and December 2013;
- Huge rectangle on the Edilportale newsletter visibile on 24/472013.





3.5. Brochures / Flyers

The company has implemented brochures and flyers which have been distributed during trade fairs in which the company took part and left at disposal in the company for visitors.

Brochures and flyers have been realized both in Italian and in English. Such dissemination material has been made available for download on the website.







3.6. Trade fairs

Trafileria e Zincheria Cavatorta has participated to different trade fairs, according to its disseminative strategy, focused on the direct contact between the staff and its main stakeholders.

The company took part to the following fairs:

 FUR SHOW, Helsinki - Finlandia (Ottobre 2011); the company has partecipated wth a stand of the Cavatorta group. Inside the stand it has been placed a noticeboard describing the LIFE project, and



brochures and flyers have been distributed both in Italian and English.

 BIG 5 SHOW, Dubai - UAE (November 2011); even if the cost is not eligible for financing since it has been incurred outside of EU, the company has implemented the disseminative project inside the Italian stand at the fair. The decision to disseminate the project also to the BIG 5 SHOW in Dubai was linked to the great visibility for the project and the great importance of the fair, considering also the great affluence of European companies;

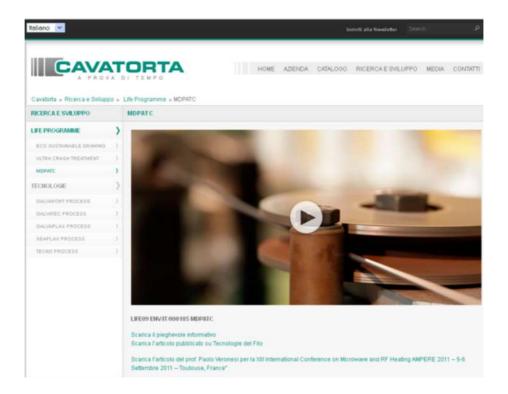
- Bucarest Romania (October-November 2011); the company didn't have directly participated to the trade fair however it has disseminated the project thanks to the support of a local dealer to whom it has been delivered disseminative materials;
- ENOVITIS, Milano Italia (November 2013), the company has participated and disseminated the project in the before mentioned fair.

3.7. Audiovisivual

Trafileria e Zincheria Cavatorta ha realized an audiovisual related to the new process developed thanks to the project "MDPATC". The audiovisual is available for download and consultation online from different sources in order to increase its visibility, in particular: from the web site of Trafileria e Zincheria Cavatorta, from Youtube and from Facebook.

The audiovisual has been produced at the end of the project when the entire pilot line was perfectly working and the economic and environmental benefits were achieved.





3.8. Expositive area

The company has settled an expositive area in the premises of Calestano, where it has exposed samples of products realized with the new process. A similar expositive area has been settled also in Parma in the headquarter of Cavatorta group.

Samples of products will be given to visitors, clients and during trade fairs.





3.9. Headed paper

The LIFE logo and the reference number of the project have been added to the headed paper of the company. The headed paper is used by the whole company for communications.







3.10. Layman's report

The Layman's report has been realized at the end of the project when the pilot plant resulted entirely completed, assembled and able to operate and when all the results where available and validated by tests. The Layman's report, that can be consulted at the annex 15 of the present report, contains all the main information about the project, it is also particularly focused on the results obtained.

3.11. Events organized

An event has been organized at the premises of Metallurgica Abruzzese with the aim of explaning deeply the project implemented by Trafileria e Zincheria Cavatorta.

The evente has been organized in the occasion of the 20th anniversary of the Life program and it took place the 5th June 2012 at Mosciano Sant'Angelo, together with Metallurgica Abruzzese, in order to increase the visibility of both projects.

Many people participated to the event representing several private companies, universities, public entities and industrial association:

- Università Politecnica delle Marche;
- Università degli studi di Modena e Reggio Emilia;
- Industrial union of Teramo;
- Enviornmental department of the province of Teramo;
- Major of Giulianova (TE);
- Major of Tortoreto (TE);
- Major of Mosciano sant'angelo (TE);
- Cassa di Risparmio di Teramo;
- Dayco Europe s.p.a.





A second event has taken place when the project has been definitively concluded aiming at disseminating the benefits achievable adopting the new technology both for what it concerns the environment and the economic aspects. The event, which has been organized together with Metallurgica Abruzzese, has taken place at Mosciano Sant'Angelo the 28th of March 2014. Following we present a list of representatives of companies, universities and public entities who have participated:

Dott.ssa IRIS FLACCO REGIONE ABRUZZO

Politica energetica, qualità dell'aria e SINA

Prof. ALBERTO MOLINARI UNIVERSITA' DI TRENTO Dip. Ingegneria dei materiali

Prof. ROMEO PRATESI UNIVERSITA' POLITECNICA DELLE MARCHE

Dip. Fisica e ingegneria dei materiali

Prof. PAOLO VERONESI UNIVERSITA' DEGLI STUDI DI MODENA E REGGIO EMILIA

Dip. Ingegneria dei materiali e dell'ambiente

Dott.ssa ANNA DI CROCE Dirigente tecnica ARTA Abruzzo

Dott.ssa RENATA DI GIOACCHINO Responsabile settore inquinamento atmosferico ARTA Abruzzo

Dott. NICOLA DI GIOVANNANTONIO Direttore Unione Industriali di Teramo

Dott. FABRIZIO SPADARO Assistenza sindacale e legale – Unione Industriali di Teramo FRANCESCO MARCONI Assessore all'ambiente alla provincia di Teramo

Dott. FRANCESCO MASTROMAURO Sindaco di Giulianova (TE)

GENEROSO MONTI Sindaco di Tortoreto (TE)

ORAZIO DI MARCELLO Sindaco di Mosciano S. Angelo (TE)

BRUNO POMANTE Funzionario alla Cssa di Risparmio di Teramo

Ing. ALESSANDRO PISONI e Ing: ANTONIO PATERNI Della DAYCO EUROPE S.p.A.

Dott: ROBERTO CARLINI EUROCARGO S.p.A.

LUCIANO CIPOLLETTI
Consulente tecniche di processo

Ing. PICCIONI MICHELA Responsabile settore rifiuti ARTA TERAMO







3.12. Other Activities

In September 2011, prof. Veronesi of the University of Modena e Reggio Emilia has presented the work of the university of Modena, for what it concerns the project "MDPATC – plasma treatment" at the international scientific conference AMPERE 2011.

Following the presentation, it has been published an article on "Microwave and RF power Applications - 13th International Conference AMPERE Toulouse 2011" (ISBN 978-2-85428-978-7).

4. Staff involved

In order to implement and update the disseminative activities, Trafileria e Zincheria Cavatorta made use of the following key people:

- Dr. Giovanni Cavatorta Project Manager, whose main responsibility was to verify the correspondence between the dissemination activities implemented with those foreseen in the demand.
- Dr.ssa Sylvia Cavatorta Responsible of the group communication whose main responsability, together with the project manager and the dissemination manager, was to identify the most effective dissemination activities, integrating them with the dissemination activities foreseen in the project "Ultra Crash Treatment" implemented by Metallurgica Abruzzese and with the ordinary communication activities of the group.

5. Conclusions

The dissemination activities have been implemented during the whole project with high intensity and have been diversified in order to achieve the highest possible level of visibility.

Following we show in a table the activities we have realized during the project comparing them with the foreseen activities:

Events	FORESEEN		IMPLEMENTED	
Audience:	Generic audience	Specialized Audience	Generic audience	Specialized Audience
N° of participants:	National	National	National	National
25-75 partecipants	1		1+(1)	

Communication tools	FORESEEN	IMPLEMENTED
Type of communication tool	No.	No.
Project website: average number of visitors per month	20	5'799
Press releases made by the project	5	6
Specialized press article	1	1
Film produced	1	1
Film presented in events/festivals	1	1
Trade fairs	-	4
Noticeboards	-	3
Newsletter	-	2
Exhibition areaof the project	-	1

Pubblications	FORESEEN		IMPLEMENTED	
Type of publication	No. Publications	No. of copies	No. Publications	No. of copies
Layman's report	1	1000	1	60
Volantini	1	1000	1	100
Brochure	1	300	1	100
Poster	1	50	-	-

As can be easily noted from the observation of the tables above, Trafileria e Zincheria Cavatorta has implemented all the activities foreseen in the demand and some which were not foreseen in order to complete the marketing action and increase the visibility of the project.

The activities realized have lead to positive results in terms of visibility of the project and requests of more information received. The exact number of people who got to know the project MDPATC is hardly quantifiable, however it is possible to suppose with an high level of certainty that the number of people reached is in the order of thousands of people; to have a more precise idea you should think that only with the first number of the newsletter the company has been able to reach 2350 people.

Regarding contacts, the company has been able to set up the basis for a future successful relationships in terms of networking; the staff has not yet been able to find a valid partner for the transfer of the technology and/or the implementation of networking activities however high interest has been shown by Dayco Europe s.p.a. and the Industrial Union of Teramo which represent a lot of companies in the territory. Requests for more information have been received both from students of different universities and companies.

In the future the company will focus on the research of valid partners for the technology transfer and/or the implementation of networking activities; it has been prepared by the staff a new tool which will allow to develop in a better way the relationship with the new contacts. The new activity regards the organization of guided personalized tours for all the clients who will request it. During these moments, the staff will have enough time to explain well the project benefits and it will have the possibility to discuss possible future developments.