

TeroLab Surface

No. 17

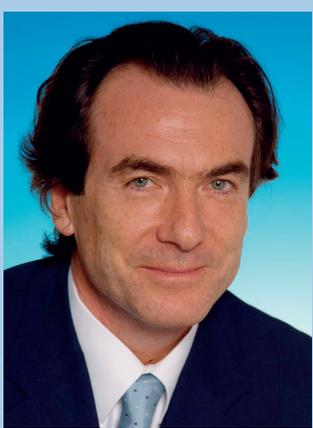
THURSDAY 22. JANUARY 2009

Contents

2 > Plasma Spray Technology Advance through Multiple Arc Systems (2)

3 > REACH – TLS takes on challenge of new chemicals regulation
> What's Up
> Industry News

4 > Marc Morel, CEO of TLS Medical: another step forward with turnover
> TLS celebrates 10 years anniversary
> Insider Views
> Impressum



Christopher H. Wasserman, founder and president of TeroLab Surface:

«My goal is a company where all employees feel that they are in the right place doing the right job and are valued as individuals.»

«We are on the right track»

On the occasion of the 10th anniversary of TLS, TeroLab Surface News spoke with the company's founder Christopher H. Wasserman, who is also president and sole shareholder of the group.

What were your expectations when you founded the company a decade ago? Have they been fulfilled?

I have always been convinced that surface engineering and Thermal Spray have great potential. Thermal Spray technology is still unknown in many fields. It has not yet been fully exploited in many industrial applications, as many engineers are still unaware of its full potential.

Thermal Spray contributes to prolonging the service life of key engine components. Coatings can be applied to new parts as well as to worn ones.

By doing this TLS is able to recycle and save precious raw materials, to reduce costs by eliminating down time and – in general terms – to protect the planet from unnecessary waste. This vision still holds true today.

Has the business changed over the last ten years? If so, in what respect?

Having the right technology was not enough to build a great company. It was and is my goal to bring people together in order to share the vision of a company where leaders and managers are working at the service of their employees and customers. I wanted a company where all employees feel that they are in the right place, that they are doing the right job and have the feeling that they are valued as individuals. Therefore, everybody contributes with his or her talents to make the company grow. We have essentially achieved this, but there is still more to be done.

Because of the current economic crisis there is now a growing readiness of business leaders to invest in the development and growth of individuals instead of focusing only on the financial performance. Since this is my credo I see it as a positive change.



Great undeveloped potential: Thermal Spray is a technology of the future

Have you made a decision during the last ten years which you would change with hindsight?

I have no regrets looking back since we have achieved much in the last ten years. Building trust among all employees is a daily process that takes its time. Trust is difficult to build and is easily destroyed. Had I strictly looked only at the financial side of business we could have achieved a better performance. But the image that the company has today is different. It is much more innovative and has entered a new field of engineering.

What success are you especially proud of?

I want to thank all managers, employees and customers who have shared this vision and have trusted me, because we were persistent in charting the same course. We have patiently built the company up by moving towards our goals. Our strategy has consistently been pursued even though the results were not always immediately visible. In an overall view we can say that our long-term approach is better focused on sustainable growth than on short-term success.

What is it that makes you really angry?

Any attitude of hypocrisy and selfishness. In other words the behaviour of acting in contradiction to what one says and of not helping others.

Continued on page 2

Plasma Spray Technology Advance through Multiple Arc Systems (2)

Apart from the triple-cathode spray systems already featured in TeroLab Surface News No. 15, the Axial III plasma burner by manufacturer Mettech is another promising application of the multiple arc principle.

The Axial III plasma burner is remarkable for its array of three cathodes and three anodes and for its axial powder injection. The construction uses three cathodes which are electrically insulated from each other and three anodes. The cathodes are arranged at an angle of 120 degrees. Three separate plasma jets emanating from the three anodes combine their flows directly before entering the plasma nozzle and so form a united plasma stream. Three different types of plasma nozzle are available and can be chosen according to the spray material applied.

Performance characteristics

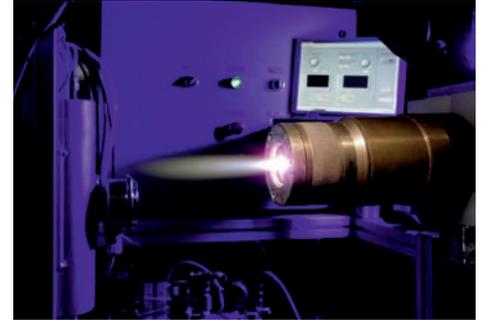
The burner design allows for notably increased gas flow quantities compared to conventional plasma burners. For instance, the maximum flow rate for argon is 400 litres per minute. The high gas flow volume in combination with the specially designed plasma nozzle permits considerably higher plasma gas velocities when compared to conventional plasma gas burners. Inside the plasma burner the spray powder is inserted axially into the plasma jet immediate-

ly in front of the meeting point of the three separate plasma streams, where it is then accelerated by the plasma gas.

The increased gas velocities also cause the sprayed particles to be accelerated considerably. Since the powder is injected axially, nearly all powder particles pass through the hot zones of the plasma jet where they are rapidly heated, thus melting onto the substrate very efficiently. Including non-molten or partly-molten particles in the coating can thus be minimised. In addition to this the oxidation of the metallic particles is significantly reduced because the powder is injected straight into the core of the plasma.

Reduced wear

Compared to conventional single arc spray systems the Axial III plasma burner allows for high arc voltages to be applied – ranging from 60 to 200 volts – so that an electrical power up to 150 kW can be achieved. The thermal load of the separate anodes and cathodes is drastically reduced by the triple cathode/triple anode design, which leads to a significantly longer operating life of the electrodes (up to 300 hours).



Substantially increased gas flow: plasma burner Axial III in action

By virtue of the plasma burner's special properties high quality coatings from metals, ceramics and composite materials can be produced.

Boosted throughputs

Compared with conventional single arc systems the Axial III plasma burner permits operational throughputs to be boosted significantly. For instance, when applying AlSi polyester based tarnish coatings with the multiple arc system mentioned above, powder feed rate is increased by 40 percent while application efficiency is raised by 50 percent, compared to a conventional single arc spray system.

Continued from page 1: «We are on the right track»

What are you especially pleased with?

First of all I want to mention the well-being of all our employees and the satisfaction of our customers.

When do you forget about time?

I like to think of the fact that we have brought the company into a shape from which it can move forward on its own – even without me as a shareholder. This means that everybody has developed a sense of personal responsibility.

What can the customers expect from TLS in the coming ten years?

Surface engineering and Thermal Spray

will become part of the major mechanical engineering curricula. Future design engineers will integrate this technology into new components rather than perform reverse engineering as it is the case today. This means that instead of fitting a coating onto an existing part, engineers will take Thermal Spray into account at the part's design stage. Among other benefits this will allow for considerable cost savings in substrate materials.

If you had three wishes, what would you wish for TLS?

My first wish would be to have a good team in place, with managers who lead by their example and continue to delegate decisions as far down in the orga-

nisation as possible. As a consequence the company will be able to adapt more easily to the rapidly changing market conditions.

The second would be for continuity in developing innovations and solutions for the coating industry.

The third wish would be to develop new applications for the local market and enter new markets in those countries where we only have a small presence, for instance in Eastern Europe.

As a general comment I can say that we have had our ups and downs. We have come a long way and we are stronger now than ten years ago. I can safely say that we are on the right track.

Interview: Ellen Gall

REACH – TLS takes on challenge of new chemicals regulation

The European Union's new REACH regulation harmonises and simplifies chemical legislation and brings about fundamental changes. TeroLab Surface is currently implementing company-internal measures to comply with REACH's demands.

REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. The new European Union chemicals regulation came into effect on June 1, 2007. As a European Union law, it is directly and equally binding for all member states.

The process is based on the principle that the industry is directly responsible for implementing REACH. According to the precept of «no data, no market», chemical substances have to be registered before they can be put into circulation within their area of application. All manufacturers or importers and also all retailers and commercial consumers that fall within the scope of REACH are required to obtain their own registration number if they want to put chemical

products into circulation. Here, an unbroken chain of information from each player is essential.

As a downstream user, TeroLab Surface meets the challenge of protecting the environment by closely adhering to the REACH regulations. The basic prerequisite is already on hand in the form of a substance index; further requirements currently being implemented include comprehensive documenta-

tion and appropriate risk management measures.

At the moment TLS is about to complete the phase of informing its suppliers of all substances used, so that all parties concerned can coordinate and harmonise their documentation with regard to its use at TLS. When the documentation exchange is complete, customer information will follow in the first quarter of 2009.

Industry News

Deloro Stellite takes over Plasmatec Inc.

The Deloro Stellite group has taken over the Montreal, Canada-based company Plasmatec Inc. Plasmatec Inc., founded in 1985, is principally concerned with Thermal Spray technology.

The areas the commercial operations of Plasmatec Inc. are focused on are energy production and the aerospace and oil industries. With the acquisition of Plasmatec Inc. the Deloro Stellite group has taken a further step forward in their strategy to expand their coating services worldwide.

ITSC 2009 in the USA

The ITSC 2009, the largest annual symposium in the field of Thermal Spraying will take place from 4 to 7 May 2009, at the Flamingo Hotel in Las Vegas.

Nano composite coatings as a substitute for hard chromium

American MesoCoat Inc. has recently launched its newly-developed product line of nano composite powders. They can be applied by conventional Thermal Spray techniques as well as by electromagnetic fusion. The resultant coatings are highly wear and corrosion

resistant and possess increased ductility compared with hard chromium ones.

Furthermore, these coatings can easily be mechanically processed. Compared to hard chromium layers the lifetime of these protective coatings is at least double. A tenfold and upward increase in resistance is even possible.

Free E-mail information service

The ASM Thermal Spray Society (TSS) offers an E-mail information service giving advice on Thermal Spray technology and applications. Their «Spray Tips» are free of charge and can be found at: www.asminternational.org.

New PEL values for hexavalent chromate

The OSHA (United States Occupational Safety and Health Administration) has redefined the PEL values (Permissible Exposure Level) for hexavalent chromate. The highest permitted exposure is now 5 µg/m³ per eight hour work shift. Compared to the previous value of 52 µg/m³ this new limit represents a significant reduction, posing a considerable challenge in processing materials which contain chromate, principally in welding and Thermal Spraying.

22 – 23 January 2009

Expert conference
«Thin layers»
Munich, Germany
www.zvo.org

3 – 5 March 2009

MEDTEC Europe
Stuttgart, Germany
www.medtecstuttgart.com

17 March 2009

Thermal Spraying Research
Group of DVS-BV-Munich
Meeting with lecture
Unterschleißheim, Germany
www.gts-ev.de

20 – 24 April 2009

Hannover Messe 2009
Hannover, Germany
www.hannovermesse.de

5 – 6 May 2009

SURFACTS. International trade
fair for surface technology
Rheinstetten/Karlsruhe, Germany
www.messe-karlsruhe.de

What's Up

Marc Morel, CEO of TLS Medical: another step forward with turnover

In his first year as the new director of TLS Medical Marc Morel has already achieved outstanding results. For 2009, the difficult year, he also expects adequate returns but slower growth.



When he took up his post in January 2008 the challenges Marc Morel was confronted with were manifold. Responsible for TLS' orthopaedic implant coatings, Marc Morel and the staff of TLS Medical were

faced with growing price erosion in this market segment. Costs for implants are borne in most cases by health insurers who had been adopting a strict policy of cost saving. Furthermore, implants have to meet a growing number of safety demands: in 2007 the European Union reclassified implants to the class III for medical products, which is subject to stringent safety regulations.

TLS Medical has been able to withstand these challenging market conditions. Thanks to loyal or new clients Marc Morel expects an sales increase of 50 percent. One of the

most positive achievements for him is the fact that the workforce has increased by 20 percent. The market growths of cementless implants had already laid the foundations for a strong position of TLS in the past years. Internal audits and intensified employee training have also made substantial contributions to the increase in productivity and quality control.

In Europe, TLS is one of the leaders in orthopaedic implant coatings. «Products we treated have been implanted around the world» Marc Morel remarks with satisfaction. «This is a sign that our work has met with widespread approval.»

Marc Morel is confident for the future, regardless of the dark clouds gathering in the economic skies: «With additional improvements in our manufacturing processes we will also achieve further gains in competitiveness in the coming years.»

TLS anniversary: harmony as basis

Parallels between managing business and conducting an orchestra were the focus of the decennial celebrations of TeroLab, taking place at beginning of December at the French Swiss town of Lausanne. Part of the celebration was a performance of the Vic Chamber Orchestra of Spain, conducted by Jordi Mora.

«Human values, corporate culture, responsibility and leadership ability are among the decisive aspects in both disciplines» emphasised TLS president Christopher Wasserman in his speech. He praised especially the talents of the individuals and their contribution to the overall success: «We listen to all our staff members, suppliers, partners and customers in the same attentive way as musicians coordinate themselves in order to transform



their orchestra into an integrated whole.» From the musical performance Christopher Wasserman deduced a new principle of success: «From individual goals to unity and harmony.»

Insider Views

- A safety document developed by the ASM Thermal Spray Society (TSS) can be found on the TSS-Website and downloaded free of charge at: <http://tss.asminternational.org>. The document contains guidelines for the operation of protective equipment and safety devices in the domain of Thermal Spraying (Guidelines for the Use of Personal Protective Equipment in Thermal Spraying).
- The 16th general meeting of GTS (Association of Thermal Sprayers of Germany) took place from 3 to 4 October 2008 at Rostock-Warnemunde on the Baltic Sea. The event included a workshop for GTS members.

TeroLab Surface

Editor-in-Chief

Dr.-Ing. Gregor Langer

Technical Editors

Sébastien Beauvais PhD

Dr. Jens-Erich Döring

Dr.-Ing. Lidong Zhao

Editor

Ellen Gall

Publisher

TeroLab Surface Group SA

Realisation

pbdesign

Next edition

March 2009

