

# Providing advanced technical solutions for steelmakers

Joachim von Schéele offers an insight to his role as Marketing Manager for the metals and glass industries at Linde Gases Division, supplier of industrial gases, as well as a valuable source of technical solutions and services.

**I&ST: The Linde Gases Division serves many industries. Please give us a brief insight to its steel industry activities.**

The basis is reliable supply of industrial gases, such as oxygen, nitrogen, argon, hydrogen etc. Since the acquisition of BOC, we supply roughly every four steel plants in the world, excluding the mills still having their own internal gases supply.

But Linde is also an important supplier of technical solutions and services. Our own solution portfolios are focused on heating and heat treatment but additionally, we work with partners. As an example, for electric arc furnaces equipment, MORE is our partner. We also support customers with evaluations and proposals even if we do not have a unique technical solution but vast knowledge and experience; blast furnace iron making is a good example of that.

**I&ST: As Marketing Manager, Metals and Glass Industries, how do you see your role within the company and what are your key responsibilities?**

Linde has activities in around 100 countries and many of our customers' business are also global, so it is very important with co-ordination and information sharing. Resources will always be a scarcity, making prioritisation and focusing key elements in our daily work. We need to launch and promote the products that make a difference and we need to be as sure as possible of doing the right thing before we bring anything to the market or a certain group of customers. I don't know how many times a day I repeat the words 'mapping', 'screening' and 'targeting'. Continuous training of our people is, of course, an important aspect.

Moreover, sales are so much about expectations and perceptions and to be honest, in many countries we are still seen as nothing but an industrial gases supplier. Why would a steelmaker buy advanced techni-

cal solutions, to be applied right at the heart of the production chain, from what they see as a gas supplier? Making sure that the perception of Linde is as correct as possible is extremely important. Last but not least, what we bring to the market should be 'easy to buy'; we need to secure a customer's perspective on all that we do and promote.

**I&ST: Is there a particular product or service that you regard as being key to the success of Linde Gas and why?**

Talking about our solution portfolios, there is no doubt that REBOX, our oxyfuel solutions in reheat and annealing furnaces, is a great success. We are a true market leader, having ten times more reference installations than our competitors combined. From a technical viewpoint, we have been pioneering and driving this development for almost 20 years. A product that could substantially decrease fuel consumption, CO<sub>2</sub> and NO<sub>x</sub> emissions, scaling losses and increase furnace throughput should of course be a success.

However, to acquire new members to the REBOX community, the key elements are our ability to deliver turnkey installations and issue performance guarantees. Before we had that in place, the growth was still limited and although there are 120 REBOX installations in successful operation, some people see the use of oxyfuel in this field as something exotic. We still have a lot of work to do to inform and explain but the growth potential is tremendous.

**I&ST: Energy costs are increasingly important in the profitability of the steelmaker. How is Linde Gas addressing this issue?**

The simple answer is that all our solutions provide energy savings. We have customers where our technology has reduced their fuel consumption by 65%.



Joachim von Schéele, Marketing Manager, Metals and Glass Industries, Linde Gas

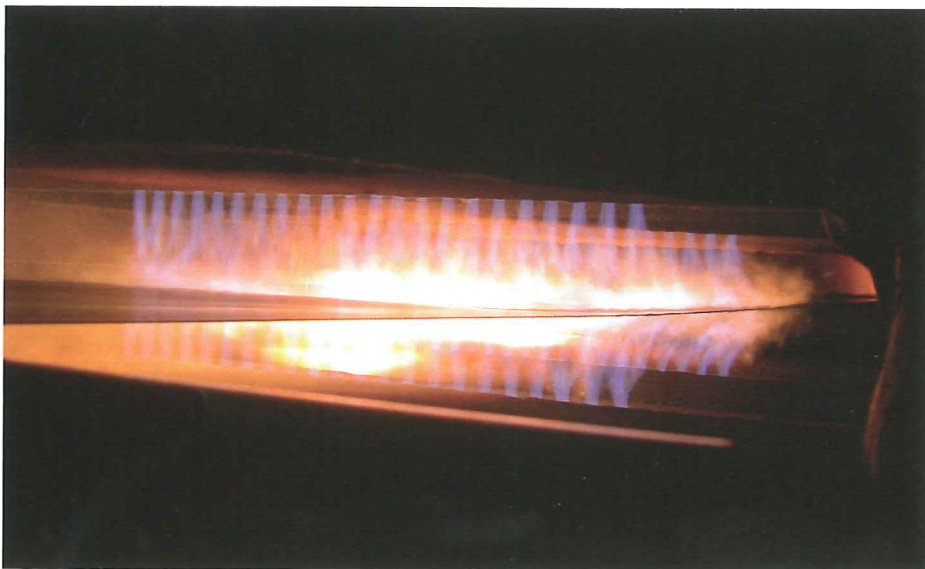
Of course, this largely relates to melting and heating, where modern oxyfuel technologies and not the least flameless oxyfuel, are superior to air-fuel but there are other aspects too. Energy efficiency in heat treatment can be achieved with technologies like our CARBOJET, which substantially improves the utilisation of the furnace atmosphere but of course, also by changing from using endogas, exogas or dissociated ammonia.

The technologies we are developing and promoting could also lead to a higher material yield in the process, which is an important way of saving energy costs too. An example is the reduction of excessive scaling in reheating. Also, many of our solutions create higher throughput capacity which, in times like these, when steel production is down at many places, can create large energy savings by enabling changed operation patterns, including fewer operational furnaces, less shifts per week etc.

**I&ST: You travel extensively in your role. Do you enjoy this aspect and how important is it in developing business in the steel industry?**

I have been part of the international steel community for more than 20 years and it is of course a great pleasure to meet old and new friends in the steel business. Also, I am truly interested in different cultures. At home, we use four languages – English, Arabic, Swedish and German – more or less all the time, which maybe our neighbours consider as weird but I only see as positive.

Being successful in acquiring new business depends very much on understanding needs, on trust and timing. This can only be achieved by meeting people in person, by going to the mills and discussing what is important to them and what is high on the agenda. Marketing requires a lot of legwork, not least on the



Direct Flame Impingement Oxyfuel flames heating directly onto a steel strip

shop floor. I am not sure if that is exactly what is being taught in schools!

**I&ST: Where do you see the growth areas for Linde Gas in the steel industry and what plans have you put in place to capitalise on them?**

We will continue building on the platform established



A rotary hearth furnace at ArcelorMittal Shelby operating with 100% flameless oxyfuel

in two directions: Taking the concept of being a solutions provider into more countries; launch new product and service offers. We focus on where we can make a difference and try to establish partnerships in other areas. For our technical solutions, we basically focus on retrofits. For new plants, we are happy to co-operate with other equipment suppliers.

**I&ST: What drives you to be successful?**

I love the teamwork and it is a great privilege having such skilled and enthusiastic colleagues. And of course, there is the satisfaction associated with achieving what we target, when finally the ink is there on the dotted line; even knowing that this is the starting point for a lot of hard work for us.

But there is also another aspect that brings a great deal of satisfaction. We have been pioneering certain areas, coming up with entirely new technical solutions; Direct Flame Impingement Oxyfuel is a good example. The first customers adopting such a new technology are of course both brave and worthy of every recognition. On many occasions, they are extra brave; they may have to be so to secure the long term survival of their plants. Using DFI as an example, I would say that we maintain very special relationships with Outokumpu at Nyby and ThyssenKrupp, Finnerntrop, both comparatively small operational units within big international groups. The satisfaction relating to this kind of installations goes far beyond the commercial terms.

**I&ST: Where do you hope Linde Gas and you, respectively, will be in five years time?**

I see being a solutions and service provider as a key

**These are a few of my favourite things .....**

**Food:** A complete Eastern Mediterranean meal, consumed over a period of several hours.

**Drink:** Water, although I also love good red wines, particularly from the Americas. Living in Munich, however, I'm more exposed to beer.

**Sport:** Watching: Basketball; Participating: Swimming.

**Book:** Two that have been important to me are *Modern Times* by Paul Johnson and *From the Holy Mountain* by William Dalrymple.

**Music:** All that I grew up with. My favourites have not developed much and it still makes me happy listening to Abba, as do the kids!

**Car you drive:** Volvo V70, so practical and nowadays slightly less ugly.

**Dream car:** I don't dream about cars.

**Holiday destination:** Iran – a beautiful country with so many extremely interesting places.

to achieving sustainable, profitable growth. It is certainly demanding but also highly rewarding. To continue developing in this direction, which includes complex sales and installations, requires recognition of the benefits of establishing further globally operative independent P/L units, including highly skilled people.

I truly enjoy this type of business environment and would love to continue in it. However, if possible, my family and I would prefer to be based in a location with warmer winters and less rain during the summer!

**Reader Reply No.54**

# Digital line scanner development

Following an extensive R&D programme combining optics, electronics, firmware and mechanical sensor design, UK-based Meta Vision Systems has launched a 3D digital laser scanner for use in automated welding equipment. Designated DLS300, the equipment can also be used in other manufacturing applications, including profile measurement and scanning for reverse engineering.

Conventional laser vision systems based on the triangulation principle use a laser stripe projected onto the target. This is processed by a 2D area camera to produce a 3D profile of the target. Use of a laser stripe has practical limitations, however, since constant laser power is used for the whole stripe. It is therefore not possible to vary the intensity to increase the light reflected from dark areas and decrease the light received from lighter areas. The camera images the complete scene including either side of the stripe, which can lead to further problems with dynamic range and unwanted reflections.

Meta's sensor uses triangulation but is based on a scanning spot rather than a stripe, solving the two main problems of stripe-based triangulation. First, it is easy to implement effective automatic gain control to compensate for reflectivity changes and second, imaging is via a linear charge coupled device, which only looks at the region of interest and is not affected by reflections.

Additional claimed benefits include a programmable field of view and independence of the sensor's

depth of field from the width of field.

According to Meta's Technical Director, Jonathan Moore, by exploiting the latest developments in programmable electronics, the company has been able to integrate a lot of intelligent signal processing inside the sensor head. "The connection from the sensor to the outside world is by Ethernet, providing digital control of the sensor from any external device over a UDP link and enabling rapid digital reporting of the sensor data."

Managing Director, Bob Beattie confirmed Meta's pleasure with the performance of the DLS300, which has exceeded expectations and the initial design specification.

**Reader Reply No.55**

The DLS300 sensor from Meta used in automated submerged arc welding

