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## Welcome

...to the to the Summer 2017 issue of the BMPCA bulletin. We've actually been enjoying some very pleasant weather over recent weeks - and it's good to be able to note that things are warming up for our steel industry too, with several companies reporting fortunes on the upturn in the UK.

Excellent to see too, several of our members enjoying success and earning plaudits in overseas markets; Danieli reports the achievement of a Final Acceptance Certificate

for performance at Gerdau mill in Ontario, along with a new contract in Turkey for a 1600 tonne scrap shear.

And wherever we look, we see evidence of our members working hard to secure the supply chains and capabilities the UK needs for the future - certainly taking a positive approach to Brexit.

'Dieselgate' continues to rumble on, and Innoval's Geoff Scamans explores the issues with great insight. A good read!

Enjoy the rest of the summer and look forward to seeing you all at our AGM and Business Meeting in October.

It's been a busy productive  
month for IAC

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# Message from the Chairman

“ The Brexit negotiations have begun at last but so far we are not any clearer on the target or the final outcome. However the sky has not fallen down and business confidence continues to show signs of improvement. We still have to endure the poor exchange rate for our overseas summer holidays but can temper this knowing the benefit it is giving us for export sales of UK manufactured goods.

The growth of Liberty House group continues apace with the announced intention to conclude an agreement to acquire Scunthorpe based Caparo Merchant Bar from the administrators of Caparo Industries, as well as a provisional agreement to purchase Britain's largest steel pipe mills, based at Hartlepool from Tata Steel. Both acquisitions will no doubt require agreement being reached with the pensions regulators.

Liberty House Group have also signed a binding agreement to buy the entire operations of Steel maker Arrium Ltd based in Australia outbidding a South Korean consortium backed by

POSCO. The group plans to modernize the ageing steelworks, together with Arrium's mining and steel distribution businesses, after it collapsed last year following a downturn in steel and iron ore markets.

As further evidence of the change in steel business fortunes Cardiff-based Celsa Steel UK group of companies has recently reported a return to profit in its latest financial results.

Tata Steel and Thyssen Krupp are still discussing a potential merger although recent reports suggest that the Thyssen Krupp management would prefer to be left with less than 50% of any consolidated company, whereas

the German workers council firmly rejected such an idea.

Will there be a reduction in the demand for iron ore in the coming years and a move to more EAF based recycled steel production? Reports show that China's supply of steel scrap is surging as aged buildings, bridges and cars produced over decades of rapid economic growth are knocked down, dismantled or crushed. Watch this space!

I hope you all enjoy the current issue of the Bulletin and keep submitting your articles for future editions.

Happy Holidays.



Andy Orme Chairman

Please visit us at  
[www.bmpca.org.uk](http://www.bmpca.org.uk)

## Interested in joining an expanding company? **Looking for a new challenge?**

Operating as part of the IAC Group, Industrial Automation & Control Ltd. is the UK's largest independent systems integrator, is expanding its service and support team.

**IAC is looking for PLC and drives engineers to be based within a new division in Sheffield, providing 24/7 technical support at sites within the north east and surrounding areas.**

Supported by a dedicated team in South Wales, extensive training, a competitive salary and benefits are offered. The

new roles will suit customer focussed service / maintenance engineers from an engineering / manufacturing environment.

If you are looking for a new challenge and feel you have the talent and drive to succeed at IAC, please contact Kath Lewis on 01633 293000 for further details.

Applicants are advised to upload a CV via  
[www.iac-ltd.co.uk/careers](http://www.iac-ltd.co.uk/careers)



## BMPCA visits SKF

**On 6th July SKF Bearings at Luton hosted our Business Meeting. The BMPCA aims to always hold our meetings at interesting and varied locations; we have recently visited The Imperial War Museum, Ginetta Cars, Kelham Island Industrial Museum, and Aston Martin to name just a few. SKF ranked highly amongst these locations as a global manufacturer of industrial bearings.**

The company has been manufacturing on the site for over a hundred years. Every single rotating machine part requires a bearing to allow the part to rotate or to transmit a force. In fact, SKF is a manufacturer that keeps the world moving.

As part of the visit we enjoyed a factory tour and observed first-hand how the bearing parts are machined and assembled. Every stage of the process is subject to stringent quality control.

Our members are all involved in making plant and equipment in one form or another. Everyone who attended the meeting were very impressed with the visit.

It was also nice to see a British manufacturer working to full capacity in a market where demand is strong.



## New Directors at IAC's subsidiary in South Africa



**IAC have appointed new directors and restructured the management at its subsidiary panel manufacturer in South Africa.**

Tiprow Controls was bought by the IAC Group in 2009 after several years of close cooperation. The company operates as a supplier of motor control centres and electrical panels, primarily for the mining industry in the Southern Africa area.

The company is now being run by Jaco de Waal, who has a history of working in the metals industry with VAI, Bronx and others. He is joined by Grace Mokalapa who is Financial Director, and Lynette Warner, who was previously a director before the takeover.



**Jaco de Waal**

Jaco is redirecting sales and has made an immediate impact on the company structure, bringing the business into line with the control and ethics of the parent company. Tiprow are putting training and development at the centre of their strategic plan and implementing QA and 5S principles to streamline the manufacturing process and make the company more efficient.



**Lynette Warner**

Lynette was asked to re-join the board to assist in the marketing of Tiprow to the mining consultants who make up the majority of the customer base for Tiprow. Mining and aggregates in South Africa has had a difficult time in the past couple of years with legislative and market forces combining to provide huge issues across the supply chain.



**Grace Mokalapa**

Grace has been brought in to overhaul the accounts function; her previous experience with accounting firm Cohen Hill Funk has been essential to ensure that reporting is brought into line after a couple of years of poor results.

The new Tiprow directors, along with the IAC board, are confident that the new regime will be able to take advantage of the improving situation in South Africa and can forward to a prosperous future.





# Danieli receives FAC for non-ferrous separation system at GERDAU, Canada

**In December 2015 a contract was signed between GERDAU and Danieli for the upgrade of the non-ferrous scrap separation system at Gerdau's steel mill in Whitby, Ontario.**

This job has been a challenge from many points of view, given the performances required from the plant not limited to the compliance of the local

standards in terms of safety and design prescriptions.

Danieli has been selected as the main supplier responsible for the overall system design, from initial conceptual layout to supply, (either procured and fabricated), of all equipment required to achieve the performance targets required by Gerdau.

The technology for the new system allows Gerdau to sort

the ASR and landfilled material and extract non-ferrous scrap metal that is not used in the steelmaking process. The non-ferrous metals, such as aluminum, copper and stainless steel, can be separated from the scrap steel mix and recycled or sold to be used in other manufacturing processes. With the new plant fully operational, Gerdau is able to process more than 40 million pounds of non-ferrous scrap material annually.

The Whitby mill uses ferrous scrap steel from end-of-life vehicles and other sources to be melted and produced into merchant bar quality products

and reinforcing steel used in a variety of applications, including major commercial buildings, freeways, bridges, parking garages and other concrete structures throughout North America.

The performance test period was characterized by the satisfactory achievement of all the contractual performance figures, some of them even over and above contractual requirements. GERDAU signed the Final Acceptance Certificate on April 27, 2017.







# Turkish manufacturer MKEK

## adds a new 1600 tons scrap shear to its steel plant

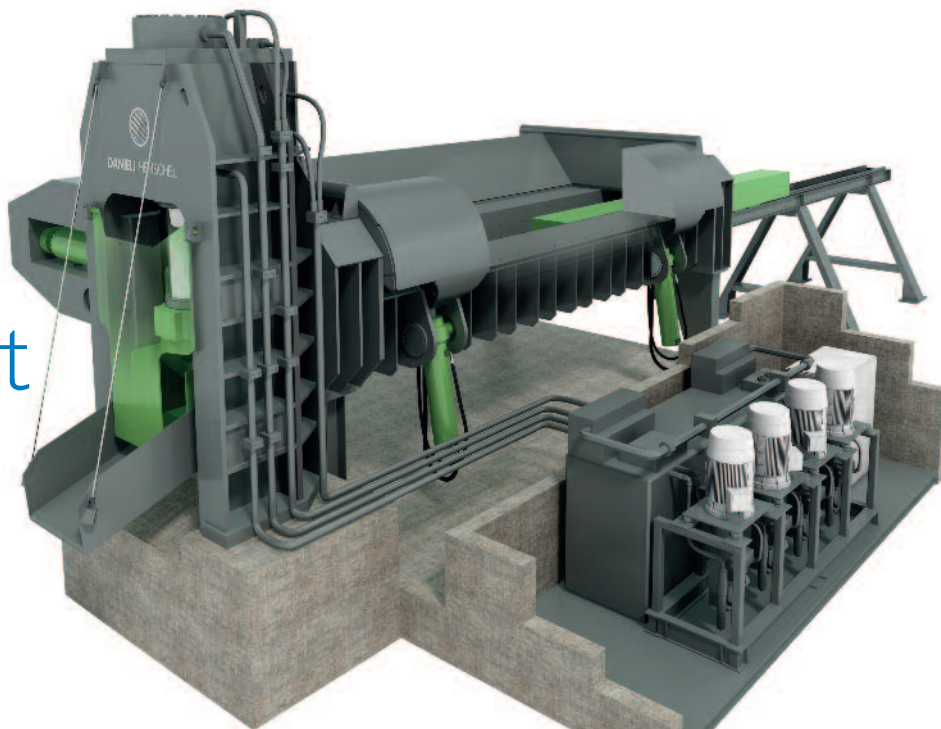
**Danieli Centro Recycling has been awarded a contract with MKE, Turkey for a 1600 tons scrap shear with side compression, type CIB 1600-10L.**

The shear to be delivered is one of the heaviest of the range, developing 1600 tons of cutting force, which gives the machine the capacity of shearing rounds with diameter of up to 230 mm or plates with a maximum thickness of 136 mm.

It is the intention of MKE to utilize the shear in a 3-shift operation with an average production of 50 tph. This new contract follows the installation of similar shears at Izmir Demir Celik in Aliaga and Toscelik in Osmaniye,

delivered in 2010 and 2012. Besides the shear-baler, Danieli Centro Recycling has also supplied on the Turkish territory a 3-compression baler PTC 1640H, installed in the steel mill of Colakoglu in Kocaeli. Scrap shears of that range are in operation in a large

number of countries around the world, including Russia, China, Australia, United Kingdom and Singapore, where they have proven their reliability and high availability, being on recycling yards or in steel mills.



## Successful start-up for the second scrap shear delivered in Moldavia

With seven scrap yards operating across the country, Metalferos is the leader in the scrap business in Moldova for the recycling of ferrous and non-ferrous metals. The treated scrap is mainly purchased by MMZ steel plant, the largest steel producer in the Republic of Belarus.

The actual volume of recycling scrap is about 240 000 tons per year and they are expecting to



increase production up to 400 000 in the next few years. After a first CIV600-8 start-up in September 2016, a second press-wings shear-baler has just been received by a very satisfied customer.



# Thermofisher: Committed to Providing **Total Solutions**

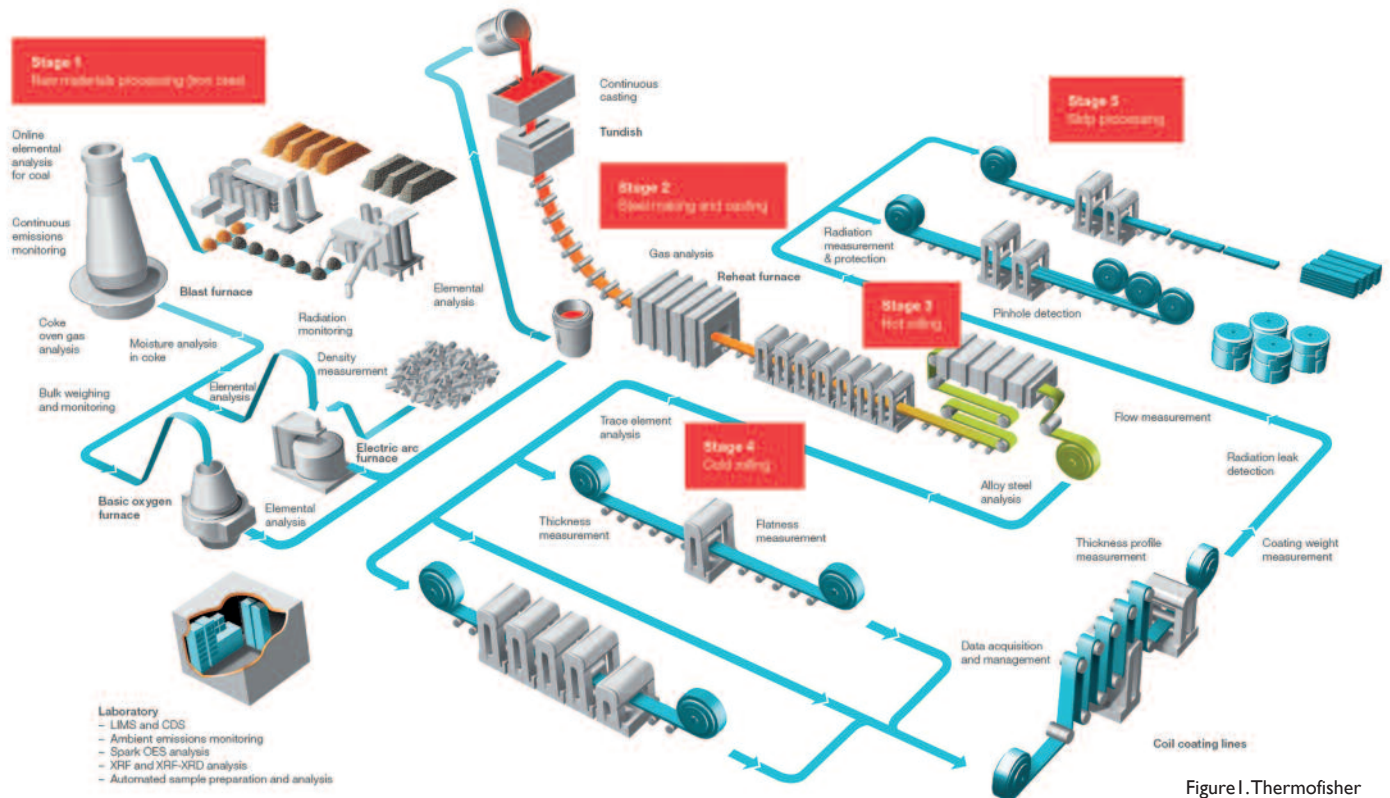


Figure 1. ThermoFisher production process map

As any steel manufacturer knows, steel production is a 24-hour-a-day, 365-day-a-year process, dependent on a consistent supply of raw materials and huge amounts of energy. High demand for raw materials and scrap, increasing energy costs, new production methods and industry consolidation requires steel producers to develop new methods and adapt the latest technologies to lead the industry, both commercially and environmentally.

Thermo Fisher Scientific, the global leader in scientific and process instrumentation, recognises this and is committed to helping customers optimise their steel production at every critical stage, from incoming raw materials to the final coating line. With this in mind, a new corporate capabilities brochure for the steel market is now available. Titled **"Optimize Your Metals Production Process"** it details the company's extensive capabilities throughout the entire steel production process, and how Thermo Scientific™ products can help customers to improve production and product quality at every stage.

A particular highlight in the brochure is the **"Thermo Scientific Solutions in Steel Production"** process map, shown above figure 1, covering the five main processing stages: *Raw materials processing, steel making and casting, hot rolling, cold rolling and strip processing.*

The map details the breadth of Thermo Scientific products, software and services offered at each stage of the process and covers critical functions such as elemental, phase and inclusion analysis in the melt shop, gas, moisture and air quality analysis, online thickness and coating weight measurement in the rolling mill and

managing process and laboratory data plant wide.

The brochure also details the full range of services and support available worldwide to customers once equipment has been installed. This includes options such as product maintenance with multiple levels of support agreements, education and training to optimise the use of Thermo Scientific instruments and expand operator skills, professional services for process review and to meet best-practice goals and an extensive spare parts service and system upgrade and enhancement packages.

Visit our website and take a look at the new Thermo Fisher Scientific steel capabilities brochure and see how Thermo Scientific technologies can help improve plant efficiency and product quality, whether producing steel from iron ore or scrap and regardless of whether the end product is several inch-thick slabs or galvanized sheet less than a millimeter thick. The product line is extensive, process expertise runs deep and services and support will keep your systems consistently running at top performance.

Learn more at:  
[www.thermofisher.com/metals](http://www.thermofisher.com/metals)



# Beyond Dieselgate

## ALUMINIUM LIGHTWEIGHTING OPPORTUNITIES

by Geoff Scamans

**It has become glaringly apparent, following the VW “Dieselgate” debacle, that there is a large and growing divergence between the measured CO<sub>2</sub> emissions and what actually happens when cars are driven on the road. This means that the vehicle OEMs are much further away than we all thought from delivering CO<sub>2</sub> reduction from our cars, and that the legislated requirements for 2020 and beyond will be much more difficult to achieve if realistic testing becomes the way of measuring actual CO<sub>2</sub> vehicle emissions.**

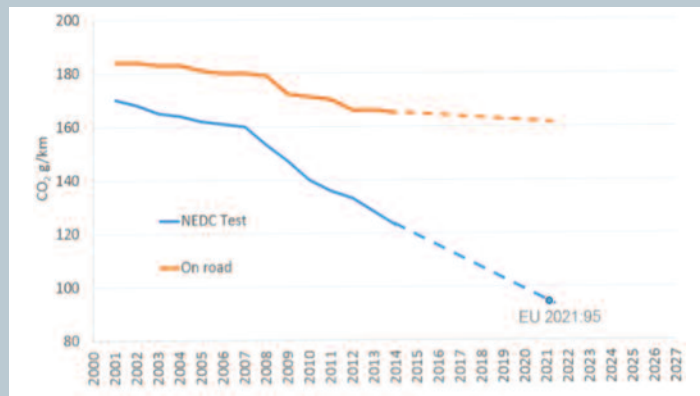
The OEMs are however being given wriggle room as, although the now obsolete NEDC (New European Drive Cycle) test method will be replaced by the more realistic WLTP (Worldwide harmonized Light vehicles Test Procedure) in 2017, the CO<sub>2</sub> targets will be softened to allow manufacturers time to cope with the more demanding actual emission based requirements. We may still be many years away from realistic vehicle testing and regulation based on these measurements, but they will both come and will make life very challenging for all OEMs unless they make their emission reduction technologies much more effective.

### Emissions reduction was going well...

In terms of historical perspective, following the mandatory CO<sub>2</sub> regulation for cars introduced by the EU the measured emissions on test fell at about 1%/year from 2001 to 2008 and then improved to an average of 4%/year after 2008. Everything apparently looked to be in order as the average CO<sub>2</sub> emissions from new cars reached 123 g/km that was well ahead of the 130 g/km legislated requirement of 2015.

### ...but then it all changed.

This situation has now changed dramatically as we are now aware of the divergence between the measured values and the on-road vehicle performance. This means that today vehicles falsely qualify for lower rates of taxation as these



Divergence of New Car Fuel Efficiency / CO<sub>2</sub> between NEDC test and On Road measurements

rates have been based upon the emissions data published by the car companies, which we now know is unrealistic. Consumers may now have to anticipate a hike in tax if 'on the road' figures are to be used. Furthermore, the average vehicle owner will pay about £400/year more in fuel than they thought they would from their car's data sheet.

It's a similarly sorry tale for the environment. Whilst we have thought that average vehicle emissions reduced by 27% from 170 g/km in 2001 to 123 g/km in 2014 they actually only fell by 8% from 184 g/km in 2001 to 168 g/km in 2014 when actual emissions data is used. The divergence issue affects all classes of vehicle, all manufacturers and all diesel, petrol and hybrid vehicles. More alarmingly, the divergence in

real and test performance is largest for hybrid vehicles.

### Future aluminium lightweighting challenges

Multiple emission reduction technologies have been identified but far and away the most important and effective and relevant reduction technology is vehicle lightweighting. This CO<sub>2</sub> reduction technology will get the largest boost from the new situation as most of the simple lower cost alternative technology options have already been exploited. The focus on lightweighting will progressively switch from the body-in-white to chassis and powertrain and aluminium, in most of its product forms, will play an ever-increasing role in all these types of structures.

The body structure of the Jaguar F-PACE comprises 80 per cent

aluminium. Additional weight savings come from the composite tailgate and magnesium for parts such as the cross-car beam.

Aluminium lightweighting technology for body-in-white is well established, particularly within Jaguar Land Rover; and more manufacturers will need to switch to aluminium intensive bodies, rather than hang-on parts, to respond to their now urgent and increased need for weight reduction. This must be accompanied by the effective management and recovery of press shop scrap to make the use of aluminium automotive sheet more affordable. The challenge for aluminium extrusions and forgings will be to provide alloys with higher strength without moving to the more expensive aerospace grades of alloy.

Innoval has been providing experience-led technical support to the automotive industry for decades. Read more about how we support aluminium lightweighting projects on the following pages.

*Geoff Scamans is our Chief Scientific Officer. He has 40 years of experience in aluminium alloy science and technology, and he's a Professor of Metallurgy at Brunel University.*



Jaguar F-PACE

# Productivity benefits of strip cooling

By Timothy  
Clemson

Here we use the Innoval Rolling Model to illustrate how the addition of strip cooling to a hot mill can result in large productivity gains.

## HOT MILL EXIT TEMPERATURE



Figure 1. Coiling of hot mill strip

The coiling of hot rolled aluminium strip usually happens at a target temperature related to the metallurgical requirements. The exit temperature of strip from a hot mill generally increases with roll speed. This means that you can vary the speed of the final pass to achieve the target temperature.

For example, if the strip enters the final pass colder than anticipated, you can obtain the same coiling temperature by using a higher roll speed.

This is the basis for the installation of either pre- or inter-stand strip cooling sprays on hot tandem mills. These coolers allow for increased mill speeds and higher output.

## INNOVAL ROLLING MODEL

The Innoval Rolling Model (IRM) is a complete physical description of an aluminium rolling mill. You can use it to see the effect of changing roll speeds on exit strip temperature.

It can also model a quench system before and/or after any given mill stand. For more complex quench systems the Innoval Quench Model (IQM) can be used.

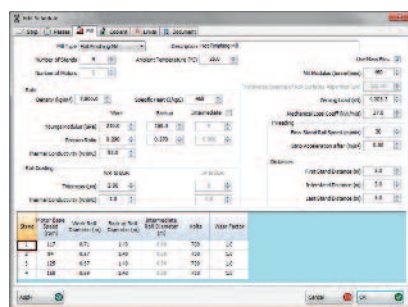


Figure 2. An input screen from the Innoval Rolling Model

The first thing to do is to set up the physical model without strip cooling. This involves inputting details about the mill and the process variables used, Figure 2. The

IRM will then give you a coiling temperature. If all of the inputs are correct this should match the real world to within a degree or two. The example we shall look at here is a four stand hot tandem mill.

## THE MODEL WITH STRIP COOLING

Once you have set up the model, you can run it again with strip cooling. To do this you will need to specify the flow intensity above and below the strip, and the length over which it is applied. The reduction in strip temperature can be very large. In our example, putting a cooler before the final stand drops the strip temperature by around 30°C. This means that the metal is harder when it enters the bite because it is colder. It therefore heats up more during rolling, and so the final coil temperature is only 25°C lower.

You can increase the roll speed until the target end temperature is achieved. The increased speed reduces the cooling but the effect is

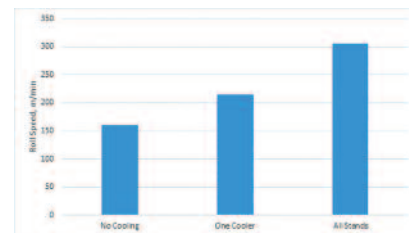


Figure 3: Rolling speeds to achieve a specific coil temperature with different amounts of strip cooling

still significant. The graph in Figure 3 shows the effect on the roll speed of one cooler before the final stand or one on all four stands. In each case, the target coil temperature is the same.

## STRIP COOLING = FASTER MILL SPEEDS

In this example the productivity improvement by adding one cooler is around 15%. If there was cooling before all four stands, this would increase the productivity by around 30%. As this example, and the Innoval Rolling Model illustrates, adding strip cooling to a hot mill can lead to significant gains and a rapid return on investment.

If you'd like to know more about our rolling model, which is available to purchase, or the other services we offer to improve mill productivity, please get in touch... [www.innovaltec.com/contact/](http://www.innovaltec.com/contact/)

# Why ISO 9001 certification is important when you provide a service

By Andy Darby

As a technical consultancy we don't manufacture products. Instead our products are the reports we send to clients on completion of a project. You might think ISO 9001 certification is not quite as critical for us as it is to a company making physical products. However, as I will explain here, it's just as important.

## ESTABLISHING A QUALITY MANAGEMENT SYSTEM

Very shortly after the creation of Innoval in 2003 we decided to establish a Quality Management System (QMS). We designed the



Figure 1. Our QMS is known as the Innoval Business Management System

scheme to reflect the way we already worked. However, we also made it compliant with the requirements of ISO 9001 certification. We call our system the IBMs, or Innoval Business Management system.

Back in 2003 everyone at Innoval used to work at Alcan's excellent research centre in Banbury. Therefore, we were already familiar with the 'formal report writing followed by review and approval' way of working. Making the transition to a formalized ISO 9001 system really wasn't such a big step.

The single greatest aid in the whole process was the creation and ongoing development of an

electronic database system. We're able to access this via our company Intranet. Our in-house expertise for software creation has been a really crucial feature in our development. Now we have a massive library of records for everything we have done for all our clients.

## AUDITING

Since the start, LRQA has audited us. We find the approximate 9-monthly audit cycle (certificate renewal every 3 years) an appropriate frequency. Furthermore, we feel that their external view and opinions are both well-balanced and useful.

## HOW WE USE ISO 9001 CERTIFICATION

We use ISO 9001 certification to control the processes we use to make our products. In our case, that's our reports. I suppose that is where the biggest misconception about quality management systems arises. A QMS is not specifically about putting a 'badge' on a product. In fact, this is not permitted. 9001 is about the system that produces the product; how is it managed and controlled? How is it reviewed and improved?

(Figure 1. from [www.pixabay.com](http://www.pixabay.com))



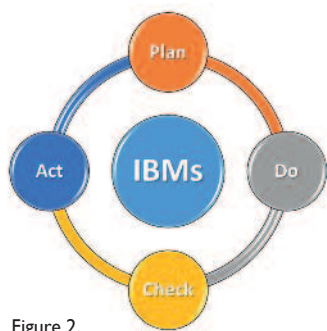


Figure 2.  
The PDCA cycle  
of continuous improvement

At Innoval we apply the oft-mentioned 'Plan-Do-Check-Act' time and time again to help make the system (the way we do things) more robust.

Every product we create, which in our case is a report of some type and format, goes through the same 'life cycle' process. This culminates with a final review and approval by someone other than the author before being supplied to the client.

## HOW DOES ISO 9001 CERTIFICATION BENEFIT OUR CLIENTS?

Quite simply, ISO 9001 certification means that at least one other pair of eyes, in addition to the qualified and highly-skilled person doing the writing (and most probably, performing the associated work) will critically review every report issued by Innoval. This ensures a degree of normalisation with the content and style, for example, by using our corporate documentation. It also means that the client's report benefits from the broader knowledge and experience within Innoval.

## WHAT'S NEXT?

ISO 9001:2015 is now the standard. We are currently certified to the 2008 version of the standard.

The new version, in common with a great number of ISO standards, incorporates an element of risk assessment to drive the continual improvement of the system. Companies must be able to identify risks to the business and put control measures in place.

There is a grace period of 3 years to convert to the new ISO 9001 certification standard. Exactly how we achieve this is a work in progress at the moment. Thankfully, our good friends at LRQA continue to provide us with useful guidance and support. A later blog post will let you know how we've fared!

## IS ISO 9001 CERTIFICATION WORTH THE EFFORT?

To our clients? Without a doubt. Every product is of a high standard

and fully traceable. Furthermore, we have a record of everything we do (and have done) for every client. This is available for future reference if required.

For Innoval? Yes again. The rigour of a periodic external audit causes us to keep our systems up-to-date and maintain the levels of performance that might otherwise gradually become comfortable and degrade over time. The challenge to continually improve and to be able to demonstrate this works for us.

If you want to know more about what we do, or you'd like further information about how we set up our Quality Management System, please get in touch...  
[www.innovaltec.com/contact/](http://www.innovaltec.com/contact/)

# What can a Process Cost Model do? By Andy Darby

A 'model', in the engineering sense, can mean different things to different people. You may have noticed that in our suite of process models, there is something called a Process Cost Model. This post will briefly explain how this type of model can help with many familiar process engineering issues.

With Innoval's Process Cost Model, easily identifiable process parameters such as line speed, target temperature, residence time etc. are input by the user. The model then calculates and predicts the resulting outcomes, simulating the behaviour of the real process as far as possible.

## WHY USE A PROCESS COST MODEL?

Quite simply, the use of such models means that otherwise expensive and time-consuming trials can be carried out without any disruption to the real production lines or without jeopardizing very expensive equipment and materials; there's a health and safety benefit too. 'What-if' scenarios can be safely explored and thoroughly tested in a virtual environment.

## WHAT COUNTS AS A COST?

Increasingly these days, financial costs, e.g. the costs of energy supplies, raw materials, disposal of wastes and by-products, labour etc. are always under scrutiny. In the simplest configurations, so-called 'variable' and 'fixed' costs are usually included. 'Variable' being the term used to encompass those costs which scale with production effort;

'fixed' being those that are present even at zero production.

There are other costs too; the costs of finance for example. Many companies are required to borrow money in order to fund capital equipment expenditure (CAPEX). Not only does this need to be repaid, but the interest on that loan also requires servicing.

Figure 1. Carbon footprint is often a metric that is used and reported.



In more recent times, there are other 'costs' that many companies now wish to consider too. Environmental impacts are also 'costs'. Consequently, the carbon footprint of a particular product (expressed in terms of its 'carbon dioxide equivalent') is often a metric that is used and reported.

The largest costs in a process sequence are not always obvious and this is where a process cost model can really help. For example, aluminium sheet is often coated with paint or lacquer for a variety of purposes. These coatings traditionally require the use of a thermal curing cycle. This means the coated metal is passed through a large oven to evaporate any solvent present, and to bring about the chemical and/or physical transformation of the coating.

It is perhaps not surprising that, given the large physical size of these curing ovens, they are often assumed to be the most expensive parts of the process. They do, after all, consume large amounts of electricity and/or natural gas. It was a matter of

some consternation to a client then, when process cost modelling revealed that it was actually the cost of the paints and lacquers that were their largest cost items and by quite a long way too (Figure 2).



Figure 2.  
Illustrative Can End Stock 'top 5' variable costs summary (taken from a recent Innoval process cost model study)

## HOW MUCH DO I GET OUT, FOR THE AMOUNTS I PUT IN?

It is often reasonably well known how efficient a particular process step is in terms of mass-in and mass-out. However, where processes are 'closed' (scrap or by-products are tidily removed away automatically and hidden from view), or processes are sequential (as is the case in many continuous aluminium sheet processes), identification and evaluation of discrete process recoveries can be more difficult. This is where cost models come in. They can assist in the process-by-process recovery calculations which show where significant losses are really occurring. Process improvement activities can therefore be focused on the processes which will benefit the most.

## BUT WHAT ABOUT THE MATERIAL THAT GETS RECYCLED?

The aluminium industry prides itself on being good at recycling. Most processes in our industry will generate aluminium metal waste or scrap. This could be large pieces such as the butt ends sawn off cast ingots or edge trim from rolled sheet, down to chippings and swarf generated when sawing or scalping. Any process model should be capable of handling this recyclate or 'feedback' material, and re-introduce it into the process flow scheme at a suitable point.

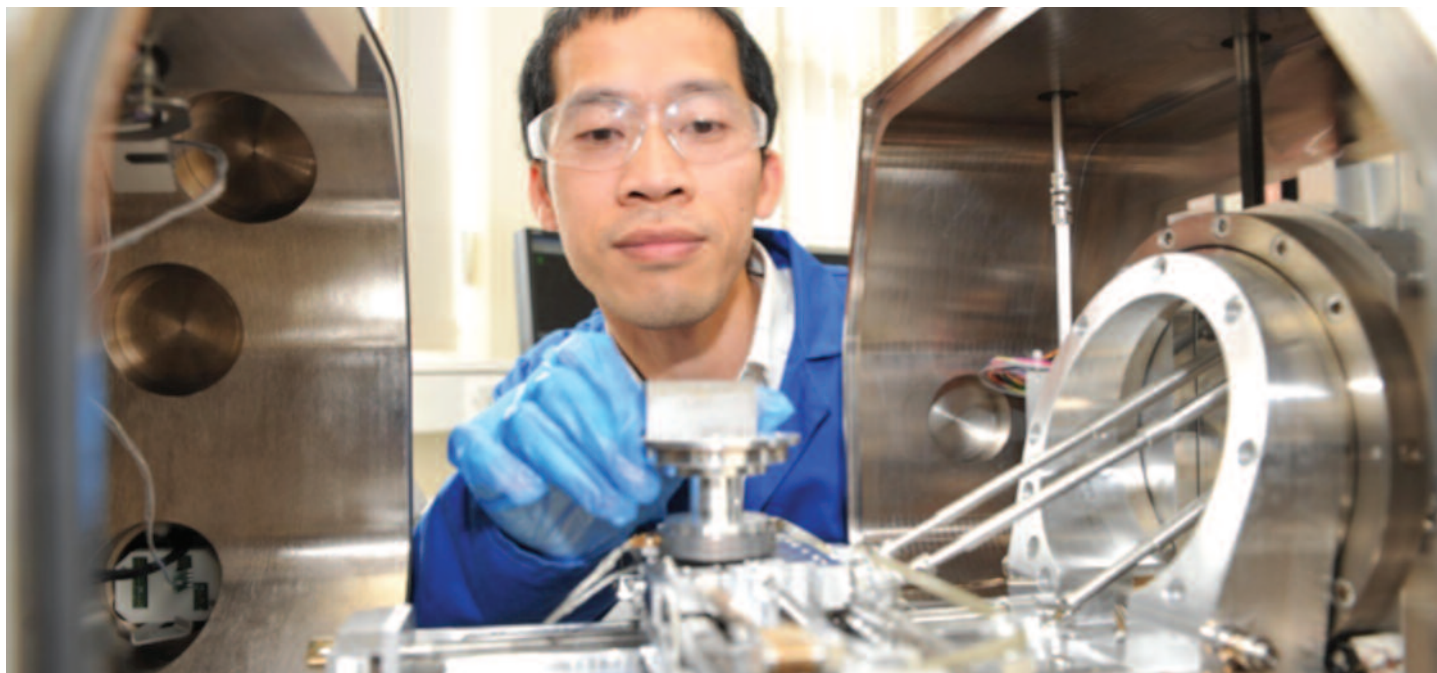
## PROCESSES ARE NOT ALWAYS STAND-ALONE

As well as being able to use process cost models to evaluate process capacity, models (and combinations of models) can be used to determine not just how many, but what size the equipment needs to be to achieve the desired output. Often this type of calculation is necessary because the individual interconnected processes are themselves a complex series of sequential operations.

If you think a process cost model could be just what you need to safely and efficiently optimize your processes, please get in touch. We'll work with you to create a model of your processes, allowing as many different parameters as you like to be adjusted and their effects investigated – without affecting real-life production.

[www.innovaltec.com/contact/](http://www.innovaltec.com/contact/)

# Materials Processing Institute



**Following its return to independent ownership in 2014, the Materials Processing Institute has featured heavily in national and international media as it works with and the steel and materials industries.**

Largely credited with achieving a real shift in the national priority for materials in general, the Institute supports the broader sector through provision of research and innovation services, as well as specialist technical training and high level consultancy support.

## NEW PARTNERSHIPS

2017 marks the first anniversary of British Steel and the first anniversary of the Institute's long term partnership arrangement, of which British Steel Chairman Roland Junck describes himself as 'extremely proud'. In the last year, a similar long term partnership has been formed with Liberty Steel Speciality Steels and following international visits from ThyssenKrupp Steel and voestalpine AG, the wider international recognition of the Institute within the steel industry is growing.

Institute CEO Chris McDonald believes that the organisation's approach to managing research partnerships is part of this stating that 'the Institute runs a number of research partnerships based on mutual benefit. By managing projects as a portfolio we can deploy advanced technology management techniques, adapt dynamically to the fast changing nature of business and leverage private funding with public money. This adds up to a recipe for success for our industrial clients, who generally see a return of 8:1 in their investment in research with us.'

A significant focus in the last year has been developing new ways of working with SMEs and companies in the supply chain. The Institute's SME Technology Centre has worked with over 100 companies in the last year and helped support 10 new spin out businesses. Increasingly important as the UK starts the process of leaving the EU, the Institute is working with large companies and their supply chains to secure the capabilities that the UK needs for the future.

## NEW FACILITIES

New facilities include a state of the art scanning electron microscope, with a unique capability to study microstructures at high temperatures and whilst undergoing stress, ideally for understanding the performance of new and improved alloys during processing. This focus on alloy development has been taken further with the installation of a new 100kg vacuum induction melting facility, to complement the existing extensive pilot scale facilities.

Investing in facilities extends beyond equipment, with a revamped Spenceley Library and Archives, home to the BISRA

process research collection, now offering information, intellectual property and technology intelligence services across industry. As a wider service the Institute now offers freely downloadable digests of international conferences from its library website.

## FUTURE DIRECTION

Researchers are developing new technologies to help companies adapt to the changing face of manufacturing and automation, through Industry 4.0, helping adaption to a low carbon world by supporting the development of zero carbon manufacturing through hydrogen and promoting sustainability through the circular economy. The Institute has published a number of papers pointing to new technology opportunities and is always interested in hearing from potential industrial partners that would like to learn more about these areas.

enquiries@mpiuk.com  
www.mpiuk.com  
Tel: 01642 382000



# Look at what we have engineered this month...

# iac group

## Medical

Power Distribution Board for  
Orthopaedics implant and  
Instrument manufacturer

## Energy from Waste

PLC based control system for  
A Polyvore waste processing unit

## Materials Handling

Pedestal Control stations for  
A Wagon Tippler in Guinea West Africa

## Chemical

Heater Control Panels for  
Two Polymer Extrusion Lines  
in South Wales

## Metals

CCTV Control system and dvr For  
An Inspection Line for Automotive Steel

### What can IAC do for you...

Email: [sales@iac-ltd.co.uk](mailto:sales@iac-ltd.co.uk) Tel: 01633 293000 [www.iac-ltd.co.uk](http://www.iac-ltd.co.uk)





# BMPCA 2017

## Meeting & Social Events Calendar

October 5th AGM and Business Meeting

November 16th Annual Lunch at the Painters Hall London

## BMPCA members

Chesterfield Special Cylinders  
CISDI  
Corewire Ltd  
Danieli Ltd  
Industrial Automation & Control Ltd  
Innoval Technology Ltd  
Metalock Engineering UK Ltd  
MII  
Oldham Engineering  
Premier Hytemp  
Ross Controls  
Sarclad Ltd  
Siemens  
Sheffield Forgemasters Engineering  
Thermo Fisher Scientific



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