



A VITAL ECONOMIC CONTRIBUTOR



£6.8 BILLION

in GVA generated annually for UK economy from the wider aluminium sector



97,000+

people employed by the aluminium sector nationwide

• CAPEX - ALUMINIUM EXPERT HAS PRODUCTS ALMOST EVERYWHERE

• 8

• THE ALUMINIUM INDUSTRY MUST ACT NOW AND ACT TOGETHER TO SECURE ITS PLACE IN A LOW-CARBON FUTURE

• 10

• NEW FLEXIBLE COATING, INSEPARABLE CERAMIC COATING FOR ALUMINIUM GENERATED IN AN ULTRA-LOW ENERGY PROCESS

• 14

• WHY ALUMINIUM?

• 18

• ALFED HEALTH, SAFETY & ENVIRONMENT CONFERENCE 2022

• 28

w.h.tildesley Ltd

Drop Forging Specialist



ALUMINIUM FORGINGS

2000, 5000, 6000 & 7000 SERIES ALUMINIUM



ENGINEERING SOLUTIONS SINCE 1874



► SPECIALIST MATERIALS ► COMPLEX FORGING SHAPES ► SMALL BATCHES A SPECIALITY



www.whtildesley.com | tel: +44 (0)1902 366 440 | sales@whtildesley.com

CONTENTS

QUARTERLY MESSAGE FROM THE CEO	3	WHY ALUMINIUM?	18
MEMBERSHIP		CLEANING AND MAINTENANCE PROGRAM	
Benefits of becoming an ALFED member	2	bioXile® helps rebuild superior die-casting standards at Sarginsons Industries Ltd	20
PRESIDENT'S MESSAGE		ENERGY	
So as 2021 draws to a close, what is the "state of the nation"?	5	Don't be scammed by false EII Compensation claims	23
INDUSTRY NEWS		ALFED TRAINING ACADEMY	
Obituary – Barry Clements	5	Whether you are looking to employ apprentices or just want information we can help you	24
New flexible funding for research projects	5	Employer apprenticeship incentives	24
WELCOME TO OUR NEW MEMBERS		ALFED technical training courses	25
Glasshouse	6	ALFED New Courses	26
Integ Metals	6	ALFED New Courses	27
WELCOME TO OUR NEW KNOWLEDGE PARTNERS		ALFED health & safety courses	27
Science and Technology Facilities Council	7	HEALTH & SAFETY	
Swansea University	7	ALFED Health, Safety & Environment Conference	28
MEMBER SPOTLIGHT		GRANTS AND INCENTIVES	
CAPALEX: Aluminium expert has products almost everywhere	8	Powering net zero: grants and incentives	29
LOW CARBON FUTURE		ALFED DIRECTORY	
The aluminium industry must act now and act together to secure its place in a low-carbon future	10	Members, Suppliers & Knowledge Partners	30
TECHNICAL			
Neutron diffraction enables wing quality to soar for Airbus	12		
AluSalt – "Control your own destiny"	13		
New flexible, inseparable ceramic coating for aluminium generated in an ultra-low energy process	14		
How aluminium is helping to decarbonise the transport sector and promote a sustainable future	16		
A pioneer in the supply of renewable energy	17		

ABOUT US

CEO -

Tom Jones

e: tjones@alfed.org.uk

Training & Education Manager -

Kathy Rombach

e: krombach@alfed.org.uk

Technical Manager -

Jan Lukaszewski

e: jlukaszewski@alfed.org.uk

Administration Manager -

Margaret Lane

e: mlane@alfed.org.uk

Marketing & Comms Manager -

Kirsi Lintula

e: klintula@alfed.org.uk

Accountant -

Karen Williams

CONTACT US

Suite 9, Alcora Building
Mucklow Hill, Halesowen,
West Midlands B62 8DG

Tel: +44 (0)330 236 2800

www.alfed.org.uk

FOLLOW US

[linkedin.com/alfed-aluminium-federation](https://www.linkedin.com/company/alfed-aluminium-federation)

twitter.com/alfedaluminium

DIARY DATES

JANUARY

13 • ALFED Aluminium Distribution Sector Group

20 • Drawing, shaping & forming of aluminium

27 • ALFED Finishing Sector Group

FEBRUARY

3 • Corrosion and protection of aluminium

8 & 9 • Welding Aluminium (2x half day)

17 • Casting technologies

MARCH

2 • ALFED HS&E Support Group

2 • ALFED Recycling Sector Group

3 • Automotive Industry meet the Aluminium Industry

8, 9, 15 & 16 • Aluminium for Engineers (4x half day)

17 • ALFED Board Meeting

29 • ALFED HS&E Conference

31 • ALFED Extrusion Sector Group

31 • ALFED Aluminium & Architecture Innovation Sector Group

APRIL

4 - 8 • MACH Show, NEC B'ham

5 - 7 • Engineering Supply Chain Show, NEC B'ham

11-12 • World of Aluminium (2x half day)

27 • ALFED Distribution Sector Group

28 • ALFED Finishing Sector Group

KEY

- ALFED Members meeting
- Training course/webinar
- Event - open to all

FOR MORE INFORMATION PLEASE VISIT:

EVENTS:

www.alfed.org.uk/aluminium-federation-events/

TRAINING:

www.alfed.org.uk/alfed-training/training-with-alfed/#ourcourses

MEMBERSHIP

ALUMINIUM FEDERATION IS THE VOICE OF THE UK ALUMINIUM INDUSTRY

The Aluminium Federation represents businesses who process, trade and work with aluminium. We foster innovation, promote best practice, develop skills and champion member interests. From training and networking to research, advocacy, lobbying and outreach, we help our members solve problems, capitalise on opportunities and boost their competitiveness.

As a member, you become part of an influential community, getting your voice heard within the industry and at the highest levels of government. Working together, we are actively driving UK aluminium forward - and we look forward to working with you in this endeavour.

COLLABORATION:

We bring together recycling and secondary producers, extruders, finishers and stockholders – helping everyone involved in UK aluminium make connections for mutually beneficial business and supply development.

INNOVATION:

You benefit from a range of services that help you stay at the cutting edge. From research and development through to industry benchmarking and technical support, you get insight that assists you to develop your business.

OPPORTUNITY:

We give you a unique opportunity to get your voice heard - within the industry and in government. Whether you're a global company or an SME, you can advocate and influence to improve market conditions for your products and services.

MEMBER BENEFITS:

Benefit from a range of services that help you develop your business, workforce and supply chain:

- Advocacy & lobbying
- Market insight
- Training
- Technical support
- Consultancy from energy management support to bespoke training, coaching and e-learning
- Events
- Influence & Policymaking
- Shared Learnings & Networking
- Savings & Partnerships

WHY JOIN THE ALUMINIUM FEDERATION

Whatever your company size or speciality within the industry, we help you access the technical expertise, market insight, business support and government influence you need to boost your competitiveness.

We offer different levels of membership based on your business size – so it's both affordable and valuable.

"As an ALFED member, you get your voice heard. We're a small metal finishing company, but I get my voice heard very loudly. When I was the ALFED President, this gave me influence at a high level with government – I was routinely on calls with ministers and civil servants. And I had my voice heard even before I was president. In 2004, the British standard changed to an EU-wide one that was much weaker. I campaigned to change it, and as an ALFED member, I had a say via the Finishing Group. I got my opinions over, and the standard is now changing. It was a real success for our business."

Giles Ashmead, Director, Powdertech

**CONTACT US
TO DISCUSS HOW
ALFED MEMBERSHIP
CAN HELP YOUR
BUSINESS**

T: 0330 236 2800

www.alfed.org.uk

ALFED
ALUMINIUM FEDERATION

EVERYTHING WE DO FOCUSES ON HELPING UK ALUMINIUM BUSINESSES CAPITALISE ON OPPORTUNITIES

THE ALUMINIUM INDUSTRY IS AN ESSENTIAL COMPONENT AND THE FUTURE OF THE MODERN UK ECONOMY

The aluminium industry is a vital part of the UK manufacturing sector. The strategic importance of this lightweight and highly recyclable metal is set to increase as the UK economy moves towards more sustainable and circular models of production and consumption.

Aluminium is a metal with diverse applications which is highly recyclable and is playing a leading role in the UK's transition to a more sustainable future. The UK aluminium sector's significant economic contribution to the UK economy is undeniable and growing. The economic impact of the wider aluminium industry provides 97 000 jobs across the UK and a contribution of £6.8 Billion in GVA to the UK economy.

Recently published report by the Fraser of Allander Institute provides a clear insight of the amount of economic activity and contributed value of the UK aluminium industry. The Fraser of Allander Institute (FAI) at the University of Strathclyde entered Scottish public life in 1975. In the 40 years since, it has become established as a leading independent economic research institute focused on the economy. This report was produced in collaboration with the Aluminium Federation (ALFED).

Economic indicators for the wider aluminium industry:

- The wider aluminium industry directly employs 37,000 people across the UK, with the largest share of those employed being located in the West Midlands.
- The wider aluminium industry contributes around £2.97 billion in Gross Value Added (GVA) to the UK economy.

Economic impact of the wider aluminium industry:

The wider aluminium industry is closely tied to many other parts of the UK economy. The production and manufacturing of aluminium goods requires purchasing from suppliers which supports output and employment across the UK.

Our economic model of the UK has been used to estimate the amount of economic activity supported directly and through spill-over impacts by the wider aluminium industry, we find the wider aluminium industry supports:

- The employment of 97,000 full-time equivalent (FTE) jobs in the across the UK.
- The contribution of £6.8 billion in GVA.

Read more: <https://bit.ly/3n2gFUD>

What was in the COP26 agreement?

The agreement - although not legally binding - will set the global agenda on climate change for the next decade:

Emissions

It was agreed countries will meet next year to pledge further cuts to emissions of carbon dioxide (CO₂). This is to try to keep temperature rises within 1.5C - which scientists say is required to prevent a "climate catastrophe". Current pledges, if met, will only limit global warming to about 2.4C.

Coal

For the first time at a COP conference, there was an explicit plan to reduce use of coal - which is responsible for 40% of annual CO₂ emissions. However, countries only agreed a weaker commitment to "phase down" rather than "phase out" coal after a late intervention by China and India.

Developing countries

The agreement pledged to significantly increase money to help poor countries cope with the effects of climate change and make the switch to clean energy. There's also the prospect of a trillion dollar a year fund from 2025 - after a previous pledge for richer countries to provide \$100bn (£72bn) a year by 2020 was missed. While some observers say the COP26 agreement represented the "start of a breakthrough", some African and Latin American countries felt not enough progress was made.

Fossil fuel subsidies

World leaders agreed to phase-out subsidies that artificially lower the price of coal, oil, or natural gas. However, no firm dates have been set.

"April is the cruellest month"

In the words of T.S. Eliot, who said: "April is the cruellest month." The Spring of 2020 the UK aluminium sector faced challenges that had yet to be fully realised and understood. The profound effect on our sector was unprecedented, destabilising our communities, derailing our economy affecting companies and organisations and by its very nature changed how we conduct our daily lives and businesses.



The toll on the UK economy is undeniable and severely added to the overall economic burden to the UK aluminium sector and the wider supply chain.

As the UK economy recovers from the pandemic our sector had the added burden of a dysfunctional Brexit, the logistical nightmare of labour and container shortages and the rising costs to move goods, followed by the raw material crisis. What else could the UK aluminium sector endure? Fuel shortages, sky high energy prices, supply chains are so stressed resulting in shortages and delays in everything we touch from computer chips, solar panels to furniture and cars. Not to mention the additional costs to industry announced in the budget.

The UK aluminium sector is the engine of the UK economy, the circular economy, future sustainability, and decarbonisation. It is a testament to you all, your leadership, and the resilience of our sector as it leads the UK industrial recovery and positions itself to deliver the future green agenda.

May I and my team thank every member and every stakeholder for their continued support, their drive and commitment in our work for the sector, you have made the Aluminium Federation a go to organisation for the sector, the wider supply chain, for government, for academia and industry.

A handwritten signature in black ink, appearing to read 'Tom Jones'.

Tom Jones,
CEO, Aluminium Federation



A leading supplier of cut aluminium plate & bar in the UK



ALUMINIUM PLATE SERVICES

A company you can count on

Durbin Metals is one of the leading suppliers of cut Aluminium plate & bar in the UK.

Durbin Metals combines the strengths of a large organisation with the friendly, flexible and customer service-oriented approach of a local family business. We are simply here to help our customers to be successful.

The company is committed to a continuous programme of investment in technology and tooling, highlighted by recent expenditure in cutting facilities. The new equipment can process up to 350mm thick Rolled Plate, 1000mm thick Cast Plate and 21" diameter Bar. Stainless Steel long products can also be processed.

The in house plate plant includes a capacity of up to 4000mm long, 2000mm wide and 1000mm thicknesses, all capable of tight cutting tolerances.

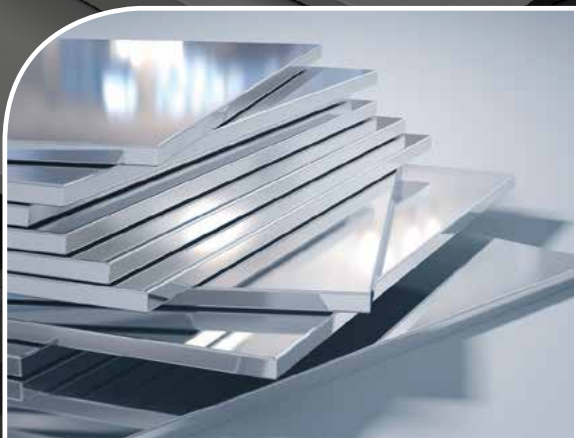
Durbin Metals provides additional processing capability for customers that do not have the capacity or machinery that is sometimes needed, and supports engineering and manufacturing units across a wide range of industries.

In addition to Plate and Bar saws, in-house plant includes a specialist vertical borer dedicated to cutting circles and rings up to 1450mm diameter and 160mm thickness with fine tolerance machined edges.

Durbin also supplies yellow metals and plastic solutions to UK industry.

For 'Just In Time' materials supply and processing, Durbin Metals is the supplier of choice.

Call today to discover why.



#weareheretohelp

Tel: 01922 453982

Email: sales@durbinmetals.co.uk

www.durbinmetals.co.uk

SO AS 2021 DRAWS TO A CLOSE, WHAT IS THE "STATE OF THE NATION"?

Energy prices are sharply increasing; material prices are at a record high. The country is feeling the effects of shortages of drivers, hospitality staff and healthcare workers. And maybe worse than any of this, COVID-19 appears to be on the rise again in Europe and remains high in the UK (although the feeling that 'it's over' seems to be the prevailing mood).

So are these reasons to feel down? That's a tough one, because for much of the aluminium industry, 2021 has been a good year. Demand has been strong and looks good into 2022 and whilst there have been challenges, the gradual return to 'normal' has kept profits pretty strong.

I guess the big question is; will it remain this way for the remainder of 2022? And I think that is the £1 million question.

The recent price increases in commodities have been unprecedented, in terms of the magnitude and speed of the increase. These price rises are happening in metals, agriculture and energy. As far as anyone can tell, pent-up demand has partly been a driver of these price increases (implying that it is transient), but also supply constraints have been exposed, due to years of under-investment (implying that it is structural).

A supply chain is only as strong as its weakest link. When it comes to the current state of the global supply chain, weakness is everywhere.

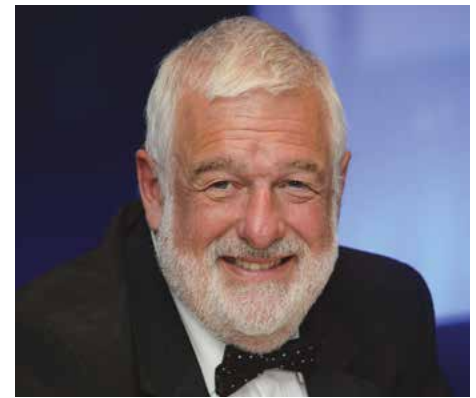
Higher costs of containers, shipping, haulage and storage lead to higher consumer prices and overall inflation.

If the disruption gets worse or drags on for longer than expected, policymakers will get impatient with the current ultra-loose monetary policy that is helping fuel demand for goods and begin to raise interest rates. Additional delays in the delivery of key inputs could also lead to a decline in manufacturing.

I guess the overall outlook may be summarised by saying the economic weather forecast would be 'cloudy with some sunny spells but with sudden and unexpected storms'. How do you dress for that!

Well as Alfred Wainwright said in his book, *A Coast to Coast Walk*, "there's no such thing as bad weather, only unsuitable clothing".

But what of ALFED and how has the federation fared over the last two years. Well, I am pleased to report that it thrives, with over 145 members in all parts of the aluminium value chain, and ever-stronger



links to Government due to the work done to support the BEIS, HMRC and DIT on COVID and BREXIT issues. We have strong links to a number of top rate universities who are our Knowledge Partners and we continued throughout lockdown to provide training support via online classes to ALFED members and others in the wider aluminium community. Furthermore, ALFED has managed to retain and improve its cash reserves and has plans to spend this on enhanced value for its membership.

After a very interesting and I would have to say "strange" two years as President, I will hand over to a new President at the end of this year. Mike Dines from Tandom Metallurgical Group will be President of ALFED next year and I am sure he will bring a new and unique perspective to the federation and will lead ALFED to even better things and I wish him all the very best.

Clive Bush,
President, Aluminium Federation

OBITUARY – BARRY CLEMENTS

It is with great sadness that Pre-Treatment Solutions Ltd announce the passing of their Managing Director Barry Clements.

His knowledge, attitude and guidance and tireless efforts to make this company progress resulted in Barry being respected right across the industry. He was hardworking, self-motivated, not afraid of new challenges and always learning and looking for opportunities to develop. His positive caring attitude, kindness and generosity meant that he was well liked by everyone who worked with him.

From his early days as an aircraft technician at BAE Systems, Barry went on to be a Technical Sales Representative for SAI Abrasivi, Area Sales Manager for Jenolite UK Ltd, Area Sales manager for BP UK Oil Ltd, Sales director for Blackfast Chemicals Ltd and Managing Director for Pre-Treatment Solutions Ltd.

All at Pre-Treatment Solutions Ltd and Barry's family would like to take this opportunity to thank everyone for their heartfelt condolences and kind words.

He will be sadly missed.



INDUSTRY NEWS

NEW FLEXIBLE FUNDING FOR RESEARCH PROJECTS

A Programme of Research and Innovation for the UK Steels and Metals Sector (PRISM) is delivering funded research projects at the Materials Processing Institute.

The programme, funded by Innovate UK and delivered by the Materials Processing Institute (www.mpiuk.com) aims to improve the competitiveness of the UK Metals Sector by providing funded research and innovation services in the areas of the Circular Economy, Decarbonisation and Digitalisation. It is also supporting the sector's future research and development needs by enhancing the facilities at the Institute.

A world class Advanced Materials Characterisation Centre has been installed and there are projects in progress for an Industrial Decarbonisation Centre and a Circular Economy Technology Centre. The programme is funding collaborative projects, with two or more industrial partners, at a rate of 50% and private projects at a rate of 25%.

There are several advantages compared to most other sources of funding. Projects are tailored to the industrial partner's needs, rather than having to meet the specific requirements of an individual funding call or competition, increasing accessibility, increasing the chance of success, and reducing preparation costs. The whole sector's supply chain can benefit from the funding, allowing larger challenges to be addressed and, through involving more partners, reducing the cost to individual companies.

More information on the programme and contact details can be found at www.mpiuk.com/prism.htm



GLASSHOUSE

Glasshouse specialises in market-leading aluminium and timber products, bringing a harmony between traditional charm and the cutting-edge options currently available in the industry. They also offer luxury composite doors and high performance lantern roofs.

With more than 40 years experience, Glasshouse draws upon a wealth of knowledge in the industry to deliver a home improvement service that is built upon respect, professionalism, efficiency, and promptness.

www.glasshouseltd.com

GLASSHOUSE

INTEG METALS

Integ Metals supplies metals and composites to businesses in industries such as aerospace, automotive, leisure, medical, construction, petrochemical, energy, manufacturing and marine.

Their products are sent all over the world to companies that want the hassle and worry taken out of their material supply. They are a one-stop shop for almost any engineering applied metals and composites which you may require.

www.integmetals.com

Integ Metals
For all of your engineering supplies



WHY JOIN THE ALUMINIUM FEDERATION

Whatever your company size or speciality within the industry, we help you access the technical expertise, market insight, business support and government influence you need to boost your competitiveness.

We offer different levels of membership based on your business size – so it's both affordable and valuable.

Contact us to discuss how ALFED membership can help your business.

T: 0330 236 2800

E: info@alfed.org.uk

ALFED
ALUMINIUM FEDERATION

THE VOICE • OF • THE • UK • ALUMINIUM • INDUSTRY

EY
Building a better working world

Should innovation be a function? Or a mind-set?

■ ■ ■

The better the question. The better the answer.
The better the world works.

SCIENCE AND TECHNOLOGY FACILITIES COUNCIL

Science and Technology Facilities Council offers entrepreneurs, start-ups, SME's and corporates the facilities, environment and people needed to de-risk innovation and accelerate business growth.

Through access to large science facilities, complementary technologies and IP, and a flourishing network of science and industry experts, companies become part of a collaborative innovation ecosystem.

From securing funding, to carrying out product development and finding solutions to key industrial challenges, STFC helps high-tech businesses in many sectors, from space to health technology, to thrive.

www.stfc.ukri.org/innovation



Science and
Technology
Facilities Council

SWANSEA UNIVERSITY

Swansea University is a research-led university that has been making a difference since 1920. The University community thrives on exploration and discovery, and offers the right balance of excellent teaching and research, matched by an enviable quality of life.

The METaL Project are based within Swansea University's Faculty of Science and Engineering, and are supported by the European Social Fund, through the Welsh Government.

The project provides work-based training for Welsh industry, focusing on advanced materials and manufacturing subject matter, with an ultimate goal of raising skills, boosting performance and productivity to drive the growing industrial sector in Wales.

Course topics include Introduction to CAD, Environmental Impact & Sustainability and Corrosion & Coatings Technology, amongst others.

www.project-metal.co.uk/



Swansea University
Prifysgol Abertawe

Join us for
our next free
online webinar

January 25th, 2022

14:00/15:00h CET

13:00/14:00h GMT



Guido Plicht
Industry Manager Metals
Processing, Europe

Heat Treatment goes digital: understand how cloud-based process analytics can help you reducing the CO₂ footprint and costs per part.

To register visit www.airproducts.expert/en/MP/



ALUMINIUM EXPERT HAS PRODUCTS ALMOST EVERYWHERE

Capalex has embarked on programme of investment since being bought by Amari Metals in 2019.

Aluminium extrusion is not a process that the vast majority of people are familiar with. Even the word 'extrude' is not a regular part of daily language for most of us.

However, once the process is explained to you, you will begin seeing aluminium extrusion everywhere, from cars to table legs, planes to ambulances and in components for everything from printing to making sausages.

In the UK, one of the major practitioners of the process is Capalex, in Cleator Moor, which has been based in the town since it was established in 1979.

In very basic terms, aluminium extrusion involves taking cylinders of aluminium - known as billets - and heating them until the metal is malleable in a similar way to plasticine. It can then be forced through a steel die - a disc with a particular shape cut into it - to create a limitless array of parts which are used in a never ending variety of applications.

Capalex does this using high pressure presses and then draws the metal out along cooling tables before cutting the pieces to length. Different alloys of aluminium are used for different purposes; for example, one may be stronger while another may be more suitable for powder coating or polishing.

"Pure aluminium is soft, ductile, corrosion resistant metal and has a high electrical conductivity, but alloying with other elements is necessary to provide higher strengths," says general manager Richard Owen.

"Aluminium is one of the lightest engineering metals, having a strength to weight ratio superior to steel and it can be produced in a range of alloys and we stock and extrude in the biggest range of alloys in the country."

As well as extruding the initial shapes, Capalex also machines the parts to order as well as anodising - coating them in a protective layer - and powder coating them in any colour required.

It develops the drawings for the die and advises on the process, although the shape itself and any associated patents or copyrights are owned by the customer.

It prides itself on turning orders around quickly, in as little as three days if a customer has a die already made.

"One of the reasons people come to us is because we don't have a minimum order quantity, which is very unusual in the industry," says Richard.

"Normally, you'd have to buy a minimum of 250 kilos with some companies, it would be half a ton of material, but a lot of customers might only want 50 kilos or 100 kilos."

He says this helps open the door to many more start up businesses, as well as prototyping.

"We've got a range of facilities on site including machining and powder coating and we're able to turn around prototypes and then pre-production very, very quickly. Obviously we do that because that then



• Richard Owen, General Manager, Capalex.



leads into production and we've then got a volume business."

Aerospace has always been a core part of the company's business, but a tour of its factory reveals parts being prepared for a host of uses, including buttons for high-end entertainment systems, legs for operating tables, jet ski nozzles and parts for luxury sports vehicles, to name just a few.

Richard says there is also a growing interest in using aluminium as a replacement for plastic in order to reduce plastic waste.

"Aluminium is 100 per cent recyclable and 70 per cent of all the aluminium ever produced is still in use, whether in its original form or recycled back into something else," he says.

"In terms of metal from this plant there is no waste, any excess from our production process goes literally back into the melting pot."

Over the last 12 months a variety of factors have seen the global aluminium price soar, including the pandemic, a slowdown in smelting output in China and a coup in Guinea, one of the main sources of bauxite ore from which aluminium is extracted.

Such is the demand for the metal that Richard says Capalex now sells excess left over from production to recyclers for nearly the same price as it used to buy raw aluminium a year ago.

The company was bought by Amari Metals in February 2019, and this has given Capalex capacity to invest in developing its business, installing new equipment and streamlining its processes.

This has included investing in a new website, which acts as its main conduit for attracting customers.

"We get enquiries every day from all over the world, as far as Australia and South America," says Richard.

"We already supply China, the Philippines, the States and to an extent Europe as well."

In common with many UK manufacturers Capalex is focused on offering specialised services and high quality products rather than competing on volume and price. The approach is paying off, with a seemingly endless demand from customers.

"We can offer tight tolerances and special alloys and a wide range of services and that's relatively hard to find internationally," says Richard.

Other investments have included increasing the size of a huge oven used to temper the aluminium to a particular hardness.

Works manager Paul Bennett explains that aluminium will naturally harden throughout its lifetime, but Capalex uses the oven to recreate the effect of years of hardening in a matter of hours.

"This is a new investment which came in May this year," he says.

"We are always looking at how we can increase capacity so we made the new oven taller and wider as well so we doubled capacity."

The company is planning to make more investment over the coming months, which Richard hopes will combine with the experience of its team of over 50 staff to continue growing the business.

"I've worked in companies all over the world and the people here are some of the most genuine and hardest working I've come across," says Richard

While the firm's nine managers have a combined 106 years' experience between

them, its longest serving member of staff has worked there for 38 years.

The workforce includes generations of the same family, such as maintenance manager Chris Nixon and his son Bradley, from Egremont. Bradley completed a level three mechanical engineering apprenticeship with Capalex in July.

"I am really enjoying it so far," says Bradley, who studied for his apprenticeship at Lakes College.

"It's very hands-on compared to other places you could work and if you're enjoying your work every day then that's half the battle."

Originally published in the December edition of in-Cumbria magazine

CAPALEX



THE ALUMINIUM INDUSTRY MUST ACT NOW AND ACT TOGETHER TO SECURE ITS PLACE IN A LOW-CARBON FUTURE

With the Intergovernmental Panel on Climate Change (IPCC) warning we have twenty years left to prevent the worst effects of the climate crisis, the race to net zero is on in both the public and private sectors¹. Around the world, the urgency of climate change is coinciding with changes in consumer sentiment to accelerate the green transition. For companies up and down the supply chain, this presents both a profound risk to the status quo and the most significant opportunity of a generation.

From national governments to private investors, money is pouring into the creation of a low-carbon economy. Since the pandemic, \$350bn has been pledged by governments towards green recovery initiatives.² Meanwhile, with strong ESG credentials increasingly shown to drive outperformance, investors are pushing companies in their portfolios to go green. PwC estimates that, by 2025, more than half of mutual fund assets in Europe could be ESG-linked - a growth rate of almost 30% a year since 2020.³ Moreover, investors are becoming more active, with the 2021 proxy season seeing a record number of ESG-linked shareholder resolutions achieve majority votes.⁴

The pressure for change from governments and investors is coinciding with shifts in consumer sentiment. According to WWF, searches for sustainable products have increased 71% globally since 2016,⁵ while a Carbon Trust poll found two-thirds of consumers want to understand the climate impact of the supply chains behind their purchases.⁶

Lightweight, durable, and endlessly recyclable, aluminium is ideally placed

for the transition to low-carbon economy. Amid the rapid growth in demand for electric vehicles, every 1 kg of aluminium can replace 2 kg of steel⁷ - a vital factor considering every 100 kg of weight savings delivers a 20% reduction in battery costs and a 10% improvement in mileage.⁸ Meanwhile, with renewables now accounting for 90% of new power capacity expansion,⁹ aluminium makes up on average 85% of every solar panel.¹⁰ Fuelled by rise of the low-carbon economy, aluminium demand is set to increase up to 80% by 2050.¹¹ However, if the industry is to keep up with the expectations of its new green customers, normalising low-carbon production is essential.

At present, aluminium is responsible for 2% of global carbon emissions, with primary production creating 12.6 tonnes of CO₂eq per tonne of aluminium.¹² With demand rising, aluminium emissions could increase by 50% to 1.6 gigatons - more than is currently produced by the UK, Germany, France and the Netherlands combined.¹³

The high emissions created by conventional smelters poses a challenge

for primary producers right through to the manufacturers of aluminium products. With customers under pressure to go green, the aluminium industry must follow suit or risk falling out of favour.

This emerging dynamic is clearly apparent in the automotive sector. Thanks to its lightweight properties, the average amount of aluminium used in EVs is 30% higher than cars with internal combustion engines.¹⁴ However, as noted by McKinsey, the decline in tailpipe emissions from the transition to EVs means climate impacts embedded in materials could rise to 60% of a vehicle's lifecycle emissions from 18% today.¹⁵ The increasing need to address embedded emissions is turning the attention of the automotive industry to its supply chain, with almost three quarters of global manufacturers setting numerical targets for lifecycle emissions.¹⁶

Fortunately, the aluminium industry has a clear path to address these concerns. More than 60% of the aluminium sector's emissions are derived from the production of electricity, meaning a switch to renewable energy can have a huge impact.¹⁷ If the whole industry transitions to low-carbon production, emissions would fall 85%.¹⁸

Producers like En+ are already showing the potential for integrating smelters with clean power generation. Thanks to the company's hydropower assets, its ALLOW brand of aluminium is able to guarantee as footprint of less than 4tCO₂eq/tAl. While not all producers will have direct access to renewable energy sources, engaging now with local governments and power network operators can help secure the right infrastructure for the future.

For manufacturers of aluminium products, who are on the front line of changing customer demands, collaboration across the supply chain is key. A starting point would be to ask for transparency on carbon emissions from suppliers and to jointly agree a decarbonisation pathway.





This could begin with the areas that are easiest to control - at the smelter and company-owned energy assets - while providing more time for suppliers to engage with external energy providers and providers of alumina and bauxite.

Collaboration is also needed in the most innovative areas of the industry to showcase the full low-carbon potential of aluminium and inspire green businesses around the world to integrate it into their product design. For example, En+ Group is working with Ball Corporation, one of the world's largest packaging producers, to create a range of ultra-low-carbon aerosols. The process begins with the world's lowest carbon primary aluminium, made using En+'s ground-breaking inert anode smelting process. By replacing carbon anodes with inert, non-consumable alternatives, the company is able to produce aluminium while emitting oxygen rather than CO₂. Through collaboration with Ball, inert anode aluminium is then mixed with the company's existing supply of secondary aluminium to enable delivery of a pioneering product at significant scale.

The partnership between En+ and Ball points to the future of the aluminium industry. With customers implementing a lifecycle approach, businesses at each step of the aluminium value chain will need to work in concert to deliver certifiably low-carbon products. The companies that act now to forge these links and collaboratively decarbonise have an opportunity to get ahead of customer demands. By acting now and acting together, the aluminium industry can secure its place in the low-carbon economy and enjoy a win-win - what is right for profits and what is essential for our planet.

References:

- ¹ *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, IPCC, 2021
- ² O'Callaghan, Brian, Em Murdock, *Are we building back better? Evidence from 2020 and pathways to inclusive green recovery spending*, United Nations Environment Programme, 2021
- ³ *2022: The growth opportunity of the century*, PwC, 2020
- ⁴ "Record breaking year for environmental, social, and sustainable governance (ESG) shareholder resolutions", Proxy Preview, 2021
- ⁵ "Search for sustainable goods grows by 71% as 'eco-wakening' grips the globe", WWF, 2021
- ⁶ "2020 consumer research shows sustained support for carbon labelling on products", Carbon Trust, 2020
- ⁷ Fitzpatrick, Liam, Bastian Synagowitz, Nick Snowden, "The hidden value in RIO's Canadian aluminium business", Deutsche Bank Research, 2020
- ⁸ Stall, Robert, *How advancing mobility will disrupt the mining and metals sector*, EY, 2020
- ⁹ *Renewable Energy Market Update 2021*, IEA, 2021
- ¹⁰ *Aluminium for Climate: Exploring Pathways to Decarbonize the Aluminium Industry*, World Economic Forum, 2020
- ¹¹ *Aluminium Sector Greenhouse Gas Pathways to 2050*, International Aluminium Institute, 2021
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Desai, Pratima, "Auto parts makers shine spotlight on aluminium's role in electric vehicles", Reuters, 2020
- ¹⁵ Garilbaldi, Matias, Eric Hannon, Kersten Heineke, Emily Shao, "Mobility investments in the next normal", McKinsey, 2021
- ¹⁶ *Toward zero carbon for Korean industry: The role of aluminium in the low-carbon transition*, En+ Group, 2021
- ¹⁷ *Aluminium Sector Greenhouse Gas Pathways to 2050*, International Aluminium Institute, 2021
- ¹⁸ Calculation based on comparison between low-carbon aluminium produced by En+ Group and global average

ABOUT RUSAL

RUSAL (www.rusal.com) is the world's leading producer of low carbon aluminium. The company is responsible for 5.8% of global aluminium production. Some 97% of the Company's aluminium is produced from renewable electricity, and by implementing innovative and energy-saving technologies RUSAL is able to reduce greenhouse gas emissions at all production stages.

In 2020, the Company accounted for about 5.8% of global production of aluminium, 6.5% of alumina production and 44% of RUSAL's production accounts for value added products.

RUSAL's offices operate in 20 countries across the world and spread over five continents.

The carbon footprint of the Company's low-carbon aluminium under the brand ALLOW (<https://allow.rusal.com>) is five times lower than the industry's average (Scope 1 and 2, at smelter).

RUSAL common stock is traded on the Hong Kong Stock Exchange (trade code – 486).

RUSAL's ordinary shares are traded on the Moscow Exchange (trade code – RUAL).





Science and
Technology
Facilities Council

Neutron diffraction enables wing quality to soar for Airbus

Airbus, a global leader in the aerospace sector, accessed STFC facilities and expertise to assure weld quality in welded aluminium alloys used in aircraft components, and to develop manufacturing techniques.

Challenge

Residual stress are those stresses that remain in an object even in the absence of external loading or thermal gradients. Residual stresses sometime remain in a welded structure when some parts of a weld cool and contract more than others, leaving potential weaknesses and the possibility of crack formation.

Residual stresses are often invisible to a manufacturer, unless they result in significant distortion. These stresses can negatively affect structural integrity. However, beams of neutrons can be used to probe deep into the structure of metallic engineering components like aircraft wings.

Solution

Scientists at STFC's ISIS Neutron and Muon Source use neutrons to examine the interior of large engineering components and identify areas of stress that might lead to unexpected behaviour. Neutron diffraction enabled measurement of stress fields in large aircraft wing test panels providing information leading to a better understanding of performance.

The research for Airbus that took place at ISIS focused on the integrity of welds in aluminium alloys, which are often very difficult to weld, and to assess their suitability for future aircraft programmes.

Benefits

The research conducted enabled Airbus to discover areas of potential stress and weakness in its aircraft parts. Airbus engineers were also enabled to adjust manufacturing processes and to make lighter and safer aircraft parts at a lower cost.

The process was integral to the development of welding techniques and confirmed the integrity of aircraft parts. This assured the quality of engineering components before the manufacturing process.



Image credit: Pixabay

"Residual stress measurement carried out at ISIS have been invaluable in researching and developing existing and novel material manufacturing and processing techniques. The fact that neutron diffraction is a non-destructive technique means it can even be used to improve component performance in manufactured parts."

Richard Burguete
Structures Test Programme Manager
R&T, Airbus

About us

Science and Technology Facilities Council offers entrepreneurs, start-ups, SME's and corporates the facilities, environment and people needed to de-risk innovation and accelerate business growth.

Through access to large-scale science facilities, complementary technologies and IP, and a flourishing network of science and industry experts, companies become part of a collaborative innovation ecosystem.

From securing funding, to carrying out product development and finding solutions to key industrial challenges, STFC helps high-tech businesses in many sectors, from space to health technology, to thrive.

www.stfc.ukri.org/innovation

@STFC_B2B

**Bridging the gap between
pioneering science and business**



Altek are pleased to share news of successful installations of the AluSalt Salt Slag processing technology.

“Over the past 2 years, our pioneering partners of the AluSalt solution, JBM International Ltd and Cast Aluminium Industries LLC, have worked together to develop the complete Total Dross Management Solution which has significant benefits to the environment and economics”, said Ian Johns, Managing Director of Altek. “Together, we have created an environmentally compliant on site process starting with Electro Magnetic Stirrers, Dross Presses, Tilt Rotary Furnaces and the AluSalt, enabling recyclers to maximise Aluminium recovery, reuse their own salt, reduce CO2 from road transportation, avoid unsafe stock piling of slags, make use of Non-Metallic Particles; basically control your own destiny.”

Working with academic institutions and Harsco Environmental, unique solutions to convert the NMP into value products are available. This ensures zero waste from the process.

Miles Brough, Managing Director of JBMI says “As a forward-thinking aluminium recycler and alloy manufacturer, developing the AluSalt plant at our UK site with Altek has enabled us to take giant strides to achieve our ultimate goal of zero waste. Modern and socially responsible manufactures have ever increasing demands and expectations for environmental sustainability.

Our vision is to be the authors of our own destiny, to be self-sufficient and not have our growth or very survival dependent upon third party salt slag processors. Our ethos has always been to find solutions to recycle our own wastes and then to help others achieve the same objective. The reward for doing this is ‘freedom of mind’ and the ability to take control of our business, which is invaluable.

JBMI International Ltd are therefore very proud to be associated with Harsco and to be the first in the world to invest in the Alusalt

recycling plant and we will continue to work as strategic partners to improve and develop the system for the benefit of others.”

Mr Waheed Ahmed, General Manager of Cast Aluminium Industries LLC, a leading specialist and visionary in the industry says “Cast Aluminium industries LLC (CAI) has invested in state-of-the-art salt washing technology “AluSalt” by Altek to fulfil its zero-landfill vision at its Dross recycling facility in KIZAD, Abu Dhabi. This investment has enabled CAI to recover salt and use it back in our process.”

This has all helped to deliver a successful installation of our most recent facility in Bahrain for Harsco Environmental. “The facility is capable of processing 40KT of Salt Slag a year. The flexibility of the solution enables us to provide bespoke solutions from 15KT to 80KT per year.” said James Herbert, Sales and Technical Director of Altek. “We are also working on solutions for the smaller recyclers who wish to become self-sufficient and in 2022 we will launch AluSalt Mini, which will process 5KT-15KT of Salt Slag a year and provide the same benefits of its bigger sister.”

If you wish to learn more, please contact ALTSales@harsco.com.

NEW FLEXIBLE, INSEPARABLE CERAMIC COATING FOR ALUMINIUM GENERATED IN AN ULTRA-LOW ENERGY PROCESS...

Imagine a coating material that could make all pumps, motors and processes run more efficiently. Can vastly extend an alloy component's operational life with extreme resilience to all environments, and reduce servicing requirements. Enabling components across all sectors to be manufactured in lightweight alloys, outperforming heavier, denser metals, and made in an ultra-low energy process. This material would transform the timelines to reaching climate targets.

The material to achieve the above is ceramic. In itself, not exactly new. However, if this ceramic was generated in a carbon neutral process, was inseparable from the component and flexible, we now have something to evolve the aluminium component market. This coating could pave the way for new composites to transform timelines to reduce emissions by increasing efficiencies in all processes, present more effective catalytics and higher capacitance power storage, without the need for rare earth materials.

We could speed the transition from combustion to electric vehicles and reduce emissions from the millions of combustion engines remaining on the road for decades to come. Automotive components could be manufactured lighter reducing the wear on roads and particulate matter pollution could be reduced. Treated components have extreme total protection from corrosion, heat, chemicals, gases, abrasion, lasting significantly longer and reducing the climate impact across the whole supply chain.

Where do we find this ceramic?

A research team in Hampshire have brought to market new techniques in ceramic coating for alloys. An adaptation of existing micro-arc oxidation processes with a power modulation device, generates a ceramic coating that significantly broadens the possibilities with lightweight alloys. As the ceramic layer is generated, molecules of the aluminium and the ceramic swap over forming a third composite layer, which is inseparable and remains for the operational life of the substrate.

Over the past two decades, the project team has worked with multinationals testing the coating in various forms, on a multitude of applications. Essentially, the ceramic forms an impenetrable protection against corrosion and unlike other ceramics that just have a crystalline

layer, the new ceramic has an amorphous composite layer with zero porosity. A treated component has all the benefits of ultra-hard ceramics meaning it will have a vastly increased operational life with far fewer service requirements.

If this was not impressive enough, there's one further beneficial characteristic unlikely observed before on such ceramics...it is flexible!

The scientific team in the small, but growing company called UCR, has coated everything from wire, the thickness of a human hair, to solid aluminium substrates, to metres of foil. All demonstrating an unparalleled performance for the target application.

UCR is growing and becoming a group with spin outs for various applications. Their objective is to maximise the positive



impact this material could have on the climate and environment. How does a small company do this? "We don't need to reinvent the wheel", said the Project Lead and Managing Partner Keith Cook. "We need to collaborate with commercial partners that have market influence for a far reaching distribution. We will provide the expertise for the technology and work with a partner to develop applications for their market. Development times are relatively short, depending on application and they would effectively become the leading performance in their sector."

Let's focus on the ceramic. UCR presents a ceramic coating generated in an ultra-low energy electrolytic process. The ceramic has an inseparable, flexible bond to the aluminium substrate providing complete protection from heat, corrosive and abrasive environments, and eliminates component failure due to creep.

In the generation of the ceramic, a third layer is created between the coating and the substrate. An amorphous layer where the molecules of the forming ceramic and aluminium combine to create a composite that exhibits the beneficial characteristics of a solid ceramic, yet is flexible, permanent and will greatly extend the life of the component and reduce the need for maintenance or replacement.

With the right specification, the ceramic not only dissipates heat more efficiently but may also exhibit a self-cleaning effect. For example, Dr Ron Robertson of UCR, has ceramic coated turbine blades that run on an air bearing. The problem to resolve was the heat generated at high RPM and the gaseous creep, which led to pump failure. The pump was operating in a high moisture, high corrosive environment and anodising failed to resolve the problems.



The outcome was increased emissivity and an increase in pump efficiency by 27%. The process evenly formed the ceramic to a quality that did not require recalibration before operation. This demonstrates that during the ceramic generation, we do not observe any build up on the edge of the substrate, nor less coating in broader flat areas. A near perfect even distribution.

The above example replaces anodising and other coating processes. UCR have been asked to look at applying their techniques to anodising and retrofit to existing electrolytic processes, even electrolyzers for green hydrogen.

Elements can be added to the ceramic solution and the ceramic can be applied with several techniques, depending on the substrate to be coated. All generated with energy modulation to reduce the power requirement.

Adding elements present catalytic properties and UCR is researching various applications to reduce emissions across the vehicle and industrial sectors. The ceramic generated in a carbon neutral process, presents the opportunity to increase efficiencies in all pumps and motors, and reduce the climate impact

across the supply chain. With every application we move to carbon negative.

When generated in zero porosity specification, creating both conductive and insulative ceramics, there's the possibility for significant improvements for batteries, such as more resilient cathodes, anodes, cells, busbars, solid state power storage.

There are many applications across all sectors. Most with relatively short development timelines. UCR stands for Universal Collaboration Research, and presents a collaborative research and development platform. UCR engages with commercial partners that support a development programme, with assistance from educational institutions and innovation hubs. UCR's objective is to maximise the positive impact to reduce emissions, to reduce the climate impact across industry. This small research company is one to watch!

For further information please visit www.ceramicalloys.com or www.ucrgroup.co

HOW ALUMINIUM IS HELPING TO DECARBONISE THE TRANSPORT SECTOR AND PROMOTE A SUSTAINABLE FUTURE

By H.R. Kotadia^{1,2}, T. Peijs¹

¹WMG, University of Warwick, Coventry CV4 7AL, UK

²School of Engineering, Liverpool John Moores University, Liverpool L3 3AF, UK

Aluminium is a universally versatile metal, after steel. Therefore, it is widely used across various sectors. The automotive industry is a particularly large consumer of the material, currently using approximately 19% of all aluminium consumed worldwide. Demand is expected to double in next 30 years due to the surging sales of Electric Vehicles (EV), from 2 million in 2018 to 12 million in 2025.

Why aluminium is the metal of choice

Aluminium is the metal of choice for EVs because of its proven track record in Internal Combustion Engine (ICE) cars, with its ability to reduce the weight of vehicles whilst enhancing performance, safety, fuel efficiency and durability making it a particularly effective choice. These factors also mean that the material contributes extremely positively to national and international efforts to minimise the levels of carbon emitted by road vehicles.

The price of aluminium is typically about three times higher than of steel, but the automotive industry is prepared to accept the price difference as it needs to compensate for the weight of batteries (400 to 800 kg) and therefore prioritise materials that enable effective light-weighting to ensure sufficient distances can be achieved between charges.

It is estimated that, for every 100 kg weight saving, an EV can increase its mileage by approximately 10-12%, reduce battery costs by 20% and save 20% daily worn-out costs.

Keeping electric and hybrid vehicles cool and light

Studies have found that aluminium intensive vehicles can cost approximately £500 less than vehicles constructed using steel, given an equal range target. By using lightweight cast extruded and rolled structural components with aluminium thermal management and aluminium cables, it is possible to make electric and hybrid cars stay cool and light.

Additional key advantage of using aluminium is its complete and infinite recyclable characteristics. Aluminium uses 90% less energy than creating virgin aluminium and could reduce CO₂ emissions by up to 26%. It is also usually 20-30% cheaper with no loss of properties.

Most recent automotive trends show that alloy selection is moving towards 6xxx alloys from 5xxx mainly because of the higher strength and formability that can be achieved. At the same time, there is an enormous challenge to weld and form 6xxx due to hot-cracking susceptibility through conventional welding technology. This limitation can be overcome through a better understanding of alloy constituents and exploring innovative new technologies. Above all, it is essential

to put complete recycling management at the forefront of decision making when it comes to selecting materials to use. For example, embedding circular product design principles and supporting a circular business model where all materials can be used to their full potential to drive down the level of CO₂ emitted throughout the vehicle manufacturing process.

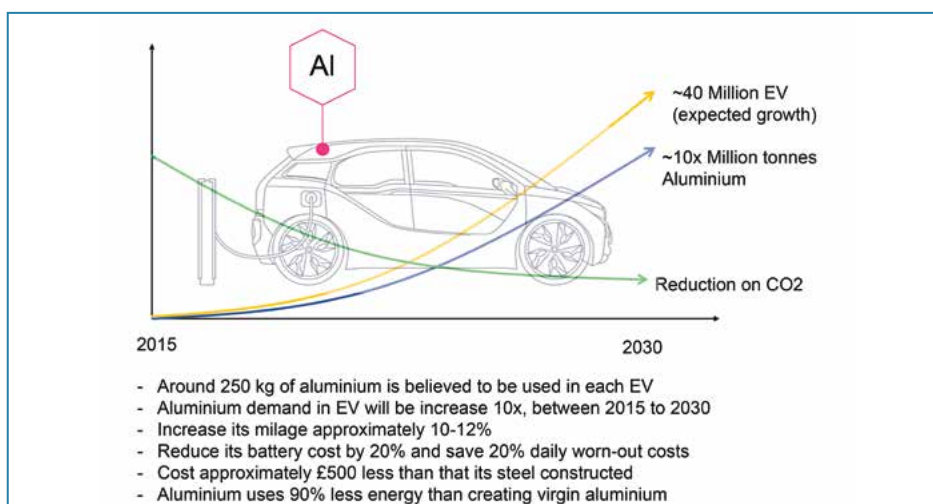
Research and development at WMG, University of Warwick

At WMG, University of Warwick, we work on this multifaceted problem by integrating material science, processing, and advantageous tools like Machine Learning (ML), Artificial Intelligence (AI) and supply chain management into our research and development activities. In terms of Al-alloys, our research focuses on adopting fundamental and applied research to engineer microstructures, which are suitable for transport applications. This includes careful consideration around material recycling with a view to increasing residual tolerance such as Fe on Al.

Our research on forming focuses on improving material formability through hot-forming and quenching. In terms of welding and joining, we are using Self-Piercing Riveting (SPR), ultrasonic welding and Remote Laser Welding (RLW) for Body in White (BIW) structures and battery construction.

Our recent research focus is to use ML and AI to separate scrap metals and improve waste management processes. WMG's material testing facilities are capable of testing material from the coupon to component level. Alongside this, our characterisation facility is capable of analysing materials in nanometre (nm) detail by using advanced microscopes.

Find out more about WMG's Materials and Manufacturing research here: <https://warwick.ac.uk/fac/sci/wmg/research/materials/>





A PIONEER IN THE SUPPLY OF RENEWABLE ENERGY

Fronius fuels hydrogen-powered bus using 100 percent locally produced, green hydrogen

Austrian energy solution expert Fronius once again reaffirmed its role as a pioneer in the supply of renewable energy, as part of a two-week trial of a hydrogen-powered bus in August in Wels (Upper Austria). During this flagship project that is unique across Europe, the bus was fueled by the Fronius Solhub using green hydrogen generated locally from solar energy.

The "Solaris Urbino 12 Hydrogen" trial was launched in the presence of numerous political and business representatives. During this trial, the hydrogen-powered bus was used as public transport for two weeks in the city of Wels. At the Fronius site for research and development in Thalheim at Wels, it was fueled daily with approximately 13 kg of hydrogen produced from solar energy. Fueling took around 15 minutes, with the bus travelling at least 160 km¹ irrespective of the usage conditions. "The best part is that heat and water vapor are the only products of the chemical reaction in the fuel cell, which acts as a miniature power plant. Fueling with hydrogen is quick, convenient, and barely any different to fueling a diesel vehicle," enthuses Anna Mejer, General Manager at Solaris Bus.

"We are excited to be part of this unique project. With the Solhub we are offering a complete turnkey solution that enables local, green hydrogen to

be generated and used for the fueling of fuel cell vehicles. This also means we have taken another step towards our vision of 24 hours of sun. The Solhub offers enormous potential for companies and municipalities, both of which play a key role in shaping and implementing the energy supply of tomorrow," explains Martin Hackl, Global Director of the Business Unit Solar Energy at Fronius International GmbH.

For Fronius, the focus during the trial has been on creating awareness of the need for locally generated green hydrogen and proving its practicality. "In doing so, we are demonstrating that the technology works and is already suitable for everyday use," says Thomas Rührlinger, Business Development Hydrogen Solutions at Fronius International GmbH.

Fronius Solhub as the solution for a climate-neutral future

Green, i.e., renewable energy is a key factor in decarbonisation and reaching climate goals. "The greatest challenge here is the availability of green hydrogen. Fronius Solhub solves this problem by generating green hydrogen from solar energy directly on site," explains Martin Hackl. This eliminates the need for long, environmentally hazardous transport and import routes and at the same time guarantees CO₂-free generation of hydrogen. In future, businesses such as the SAN Group will be producing up to 100 kg of green hydrogen per day directly on the company premises.

With the Solhub, Fronius is offering a modular range of solutions for energy sector integration and the storage of renewable energy. Sustainable and locally produced hydrogen has huge potential to become an important foundation in the

- Above: Thanks to the technology used, the bus is able to achieve a daily range of at least 350 km with one tankful of fuel.

energy revolution, allowing for domestic added value and regional business models. "We anticipate numerous additional implementations in the coming years for customers from commercial enterprises and manufacturing companies, municipalities and mass transit operators, logistics and tourism sectors, operators of special vehicles, and renewable energy communities," reveals Rührlinger.

Strong cooperation

Strong cooperation between mobility services and commercial enterprises has created the optimal conditions for implementing the first 100% sustainable hydrogen mobility project. In addition to Fronius, project partners include Wels-Linien, Sabtours, State of Upper Austria, and Solaris Bus.

About Fronius Solar Energy

The Fronius Business Unit (BU) Solar Energy has been developing photovoltaic energy solutions and distributing its products through a global network of expert installation, service and sales partners since 1992. More than 24 Solar Energy subsidiaries, an export ratio of over 93 percent and a total output of more than 21 Gigawatts from installed inverters are testament to this. Its mission is to achieve 24 hours of sun. Day after day Fronius is hard at work turning this vision of a future in which 100% of the world's energy needs are covered by renewable sources into a reality. With this in mind, Fronius develops energy solutions to generate, store, distribute and consume solar energy economically and intelligently.

Enquiries: Natalie Woodford: +44 1908 512 301, woodford.natalie@fronius.com

- The Fronius Solhub produces local green hydrogen from solar energy, solving the main problem of urgently required decarbonisation.



WHY ALUMINIUM?

Aluminium is unique among all other metals, in that its alloys, engineering and metallurgical properties have been systematically designed and developed through the application of metallurgy, within its short history of just one century, in response to known engineering gaps and to the specific needs of society. It is a developed, not a discovered metal.

From its inception, matching its developments aluminium has been recycled not consumed, so beyond doubt leads and is at the forefront of the "Circular Economy".

Truly the holistic and versatile properties of aluminium are establishing it as global designers' metal of choice, substituting and displacing other strategic metals, materials, plastics, and carbon fibre.

Today, further advances in the metallurgy of aluminium are facilitating the design of innovative designs in every facet of society, in packaging, architecture, transport and life sciences and the harnessing of energy.

Fundamentally, aluminium is a light metal, 33% the density of steel, so through the correct application of design it can match the engineering strength of steel, while offering a 40 to 50% weight saving. Weight saving not only in product application, but through its entire life cycle from ore shipping and transportation.

The low melting point of aluminium, 660°C, coupled with its extreme liquid fluidity dominates intricate automotive castings, powertrain, combustion or electric motors, gearboxes, and braking, all coupled with weight savings.

Weight for weight aluminium has 200% the thermal and electrical conductivity of copper. Radical rethinking that has

ELECTROMOTIVE

- Lightweight battery containment
- Hybrid & battery vehicles
- High voltage transmission
- Trunking & cabinets
- Busbars & switchgear
- Traction motors
- Capacitors
- Batteries

EFFICIENT BUILDING & CONSTRUCTION

- Bridges
- Horticultural
- Stadiums
- Industrial
- Skyscrapers
- Windows & doors
- Facades
- Cladding
- Thermal insulators & reflectors
- Heat & noise screens

PACKAGING

- Beverage cans
- Vacuum packs
- Foil packs
- Infinite life food containers
- Sterilised pouches
- Food & confectionary wrapping
- Pressurised containers
- Pharmaceutical "lidding" bacteria proof

ALUMINIUM IS THE MOST RECYCLED METAL IN THE UNITED KINGDOM.

resulted in virtually all air conditioning systems being manufactured out of aluminium. In the United States aluminium wiring is displacing copper.

The ability at moderately high temperatures to be readily extruded sets aluminium apart from all other metals. The ultimate "Net Shaping Process", most versatile of all metal forming process; designers "can put metal where they need it".

Combining extrusion with the thermal properties of aluminium created heatsinks; without heatsinks, semiconductors and electronic chips cannot function. Hence aluminium is powering laptops, i-Phones and virtually every electronic device.

Conversely, the aluminium properties at extremely low temperatures have enabled the industrialisation of cryogenics.

**ONE
BILLION TONS
OF ALUMINIUM
HAVE BEEN
REFINED DURING
ITS SHORT
HISTORY.**

Aluminium naturally forms a protective oxide, alumina; a hard, self-healing barrier to the environment, which bestows the highest corrosion resistance and longevity of most metals. Thus, given its short history some of the earliest aluminium products are still in original, prime condition.

One billion tons of aluminium have been refined during its short history, of which 75% is still in use and 50% in "first use", testament to its engineered and metallurgical properties.

LIGHTWEIGHT TRANSPORT

- Bicycles
- Automobiles
- Buses
- Trains
- Marine
- Aircraft
- Space travel
- Skylab
- Heavy good vehicles



SUSTAINABLE LIVING

- Photovoltaics
- Lighting
- Smart phones
- Laptops
- White goods
- Cooking utensils
- Litho newspaper print
- Air conditioning
- Heat pumps
- Cryogenics



INFINITELY RECYCLABLE

- Proven circular economy
- Established recycling infrastructure
- Stored energy
- 95% energy saving
- No loss of properties
- No land fill
- No biohazards
- No water pollution
- No toxic gases



MEDICAL & LIFE ESSENTIALS

- Flocculant, fresh drinking water
- Adjuvant, vaccines
- Cryogenics
- Medical gas production
- Skeleton frames
- MRI scanners
- Survival blankets
- Hospital equipment
- Stethoscopes



**ALUMINIUM
IS LEADING THE
CIRCULAR ECONOMY
WITH 800,000 TONS
RECYCLED IN 2019.**

Download the booklet from the ALFED website:
<https://alfed.org.uk/why-aluminium/>



bioeXile® helps rebuild superior die-casting standards at Sarginsons Industries Ltd

Sarginsons Industries have been manufacturing high-calibre aluminium diecastings in the UK since the 1930s. A proud supplier of several respected names in the UK automotive, petrochemical and engineering sectors, they have been the vanguard of innovation and craftsmanship in the die-casting industry for over 80 years.

Sarginsons' operations depend on good water quality in order to deliver timed and reliable cooling for aluminium die-casting. When Chem-Aqua surveyed the system, signs of extensive corrosion due to biofilm presence and poor water treatment program control were identified. This resulted in an increased porosity in the aluminium die-casts which affected product quality. Chem-Aqua's challenge was to review and upgrade the existing cooling water treatment program, in order to help improve operational efficiency and compliance.

ANALYSIS

- Extensive microbiological fouling caused major blockages to die-channels and pipework, resulting in 40 to 60 hours per week of shut downs for cleaning, resulting in significant production losses. Mould and die-channel stripping was particularly labour intensive and challenging.
- High levels of metal ions such as aluminium, iron and copper in the cooling water were the signs of aggressive and active corrosion in the system.
- The visible presence of biofilms, inadequate biocide addition and inconsistent bromine levels were also conducive to poor Legionella compliance and control.

SOLUTION

- Chem-Aqua implemented a deep cleaning procedure involving 24 hour recirculation of the new, patented bioeXile® for biofilm removal, alongside CBD94 for iron dispersion and MB4110 as biocide.
- Iron levels and microbiological samples were taken and monitored throughout the clean. Iron levels increased hourly, reaching 14.5ppm. High levels of *Pseudomonas* up to 6×10^7 CFU/mL were detected during the clean, indicating biofilm removal.
- The system was subsequently drained and all internal surfaces were flushed through to remove any metal deposits. A chlorination procedure was carried out, followed by a final system flush. System was finally filled back up and dosed with chemicals.

bioeXile®

Patented cutting edge biofilmicide

Case Study

bioeXile®

Pre-Clean



Post-Clean



bioeXile® improved water quality

- Post cleaning with bioeXile®, iron and copper levels were reduced to ~1.0ppm.
- After application of the on-line maintenance program, bromine levels remained consistent and within recommended levels.
- Weekly dip slides showed levels within specification ($10^2 - 10^3$).
- Equipment was visibly cleaner after cleaning (see pictures).

After applying Chem-Aqua's cleaning and maintenance program:

- ✓ 4 weeks into the program, downtime from blocked moulds and loss of production from cooling inefficiency have been totally eliminated. No finished products out of specification in the porosity analysis.
- ✓ Metal ion and microbiological results have been returned to and kept at recommended levels.
- ✓ Full *Legionella* HSG274 compliance has been achieved, resulting in a much cleaner and safer system.

Customer Testimonial

"We were experiencing 40 to 60 hours downtime a week. Following the system clean, this reduced to approximately 10 hours a week for the first 4 weeks. We knew it would take a few weeks to totally clear our machines and tooling. However, I can now report downtime resulting from contaminated water has been at zero for the past two weeks. I would like to take this opportunity to thank you for your continued assistance and hard work."



sarginsons

LEADERS IN LIGHT DOWNTIME



NCH UK & Ireland Ltd
NCH House
Springvale Avenue
Bilston, WV14 0QL
Tel (UK): 01902 510200
Tel (Ireland): 042 939 5502
Email: customer.services@nch.com

History

The only UK owned aluminium extruder, providing an award-winning service to UK industries for over 30 years.

Pride

Proud of our Corby based team of industry leading specialists, our multi-press operation, and our ability to problem solve, provide high-quality products and meet short lead times.

Excellence

Short lead times, with market defining customer satisfaction levels.



The possibilities are endless

CALL OUR SALES TEAM 01536 262 437 • alishapes.co.uk

Made
in Britain

THE VOICE OF THE UK ALUMINIUM INDUSTRY

ALFED quarterly magazine offers you a great opportunity to promote your products and services to key decision makers and influencers within the aluminium industry in the UK.

SCHEDULE:

Issue 12 will be available on 25 March 2022

For more information please contact:

Kirsi Lintula, Editor

e: klintula@alfed.org.uk

m: 07768 566 437

ALFED
ALUMINIUM FEDERATION



NEWS
ALUMINIUM
UNTA



Recently there have been calls for government to introduce measures to alleviate the problems faced by industry in the face of the current energy crisis. Recently there have been calls for government to introduce measures to alleviate the problems faced by industry in the face of the current energy crisis.

Hit by four-fold increases in the cost of electricity and natural gas over the course of the past year, it goes without saying these are difficult times for businesses, so any help is welcome.

Capping business energy bills, the temporary removal of VAT and the short-term suspension of non-commodity costs (in particular green taxes) have all been mentioned as possible options.

Another option is to open up eligibility for EII Compensation Scheme, which awards exemptions to eligible Energy Intensive Businesses for up to 85% of the costs in their electricity bills due to the Contracts for Difference, Renewables Obligation and small-scale Feed-in Tariffs.

At present, a business must pass a 20 per cent electricity intensity test to be considered for the scheme. Eligible sectors are defined by a four-digit NACE (Nomenclature des Activités Economiques dans la communauté Européenne) Code.

As things stand, however, the Department for Business, Energy and Industrial Strategy (BEIS) have rejected proposals to reduce this threshold and 'capture' more companies, which makes a mockery of wild claims by some unscrupulous energy brokers that your company could be set to save anything up to £200,000.

The reality is that very few EII companies qualify for the scheme – based on the latest figures published by BEIS – so it is prudent not to be drawn in by the headline figures, and risk giving your energy data away without due diligence, says Energy Management's National Account Development Manager Ian Scattergood.

"Don't be scammed into providing contract or energy supply information without sense checking the details with us first," he advised.

"From the applications we have processed so far it would appear that those businesses that are run profitably and efficiently are less likely to be successful."

You may also be approached about other schemes introduced by the government to encourage the decarbonisation of the economy.

One is the Industrial Energy Transformation Fund (IETF) which is now in Phase 2 and provides around £220 million in funding between Autumn 2021 and 2025. It is designed to support the development and deployment of technologies that enable businesses with high energy use to transition to a low carbon future.

Meanwhile, certain companies operating mineralogical and metallurgical processes (MinMet) will be exempt from the Climate Change Levy (CCL). This measure was introduced in April 2014 to ensure a competitive playing field exists across the European Union for manufacturers of glass and concrete, for example.

But it is important to note that this scheme is run through HMRC, who must be notified of your participation and require annual assessments. Any mis-claims are treated as fraud and it would be you, the business, not the consultant who signed you up to the scheme claiming eligibility, that would have to pay all money back plus interest and run the risk of a wider HMRC audit.

"We have heard of some cold calls of this nature where businesses have been signed up to schemes they aren't eligible for. It is the responsibility of the business to ensure they are happy the claim is appropriate," added Mr Scattergood.

Energy Management, as the preferred knowledge partner to the Aluminium Federation, provides you with independent, unbiased advice on all aspects of energy cost control including any exemption claims you may be eligible for.

For further information please email Ian Scattergood: is@energymangementled.com or call on 01225 867 722.



TRAINING ACADEMY



APPRENTICESHIPS

WHETHER YOU ARE LOOKING TO EMPLOY APPRENTICES OR JUST WANT INFORMATION WE CAN HELP YOU

Yellow Tree are currently working closely with **ALFED** to immerse their aluminium technology training into our apprenticeship standards, to create a combined diploma.

Yellow Tree is a national training organisation. With over 100+ years of combined experience in the team, Yellow Tree specialise in building innovative, employer-led apprenticeship programmes.

They recognise that education is a personal experience for everyone. Different aspirations, learning styles, challenges, outcomes. Businesses are no different.

Their development team will work closely with you, delving into the finer details of your business; to help us understand what drives you, and what drives your workforce. Once these questions are answered, this is what the foundations of your talent development strategy will be built on.

Change can be great. However, we appreciate that a change to anyone's routine, can be daunting. Our commitment to you, is to make the implementation of your program as seamless as possible. The programs are designed to draw out the very best in the learner, whilst remaining sympathetic towards business operations.

Through using teaching strategies that range from group learning to a totally remote experience our end goal is for our education programs to become an integral part of your day-to-day operations.

Yellow Tree are currently working closely with ALFED to immerse their aluminium technology training into our apprenticeship standards, to create a combined diploma.

Yellow Tree has an expanded network and have strong relationships with schools and local authorities across the Midlands. They work with various age groups from teenagers through to 50 plus.

We can offer employment pathways to the manufacturing sectors and would be happy to support organisations to raise their presence within local schools.



EMPLOYER APPRENTICESHIP INCENTIVES

As part of the economical response to COVID19, the government of incentivising employers to recruit members of staff on to apprenticeship programmes.

Employers can claim £4000 for members of staff aged 16-18 who are recruited on to apprenticeships and £3000 for staff members aged 19+.

Payments are split into 2 instalments: 50% paid after 90 days on programme and the remaining 50% paid after 365 days on programme.

These incentives can be claimed for members of staff with a contract start date between 01.10.2021 – 31.01.2021

Incentives must be claimed by May 2022.

For further information please contact ALFED training and education manager Kathy Romback: kromback@alfed.org.uk.



TECHNICAL TRAINING COURSES

INTRODUCTION TO ALUMINIUM

– Introductory/beginner level

These webinars introduce and provide a broad basic knowledge of aluminium and its industry for support staff, administration, accounts, purchasing, for those who are progressing their careers into sales, marketing, manufacturing or quality roles and for new entrants into the aluminium industry assuming no prior knowledge of aluminium or understanding of manufacturing.

Drawing, Shaping and Forming of Aluminium – Module 8

A broad survey of how aluminium is shaped, formed, manipulated, cut, fabricated.

This module outlines:

- How aluminium is joined and/or bonded
- Explaining the potential of emerging hot forming technologies
- Thought provoking technologies for the designers
- Q&A

When: 20 January 2022

Corrosion and Protection of Aluminium – Module 9

- Explaining what corrosion is and its various mechanisms
- Researches alternative coating and protection methods
- Ending with eye catching examples of coated architecture
- Q&A

When: 3 February

Casting Technologies – Module 10

More correctly liquid aluminium engineering, this module compliments both Modules 3, 7 and 8 by exploring how castings offer alternative manufacturing processes. The module outlines the various techniques and their application to specific product applications.

When: 17 February

The format of these modules is live, tutor-led interactive webinar and the approx. length of each is 30-45 minutes.

Cost: ALFED members offer 2 for 1: £33.33+vat/2 persons
Non members: £33.33 +vat/person



WELDING OF ALUMINIUM

– Introductory/beginner level

This live, tutor-led interactive training course will be delivered over two mornings via our online platform.

The course is designed for both those with minimum knowledge of welding and those transitioning into aluminium from steel. The course is also suitable for designers, engineers and technicians.

Elements covered include:

- Aluminium properties applicable to welding
- Theory of welding
- Aluminium welding metallurgy
- Aluminium alloys weldability and applications
- Consideration of heat and energy
- Thermal welding effects
- Temperature measurement
- Welding defects
- Non-destructive testing
- Welding health issues
- Introduction to all techniques and their applicability: Fusion, MIG, TIG
- Welding effects on heat treated aluminium

Date: 8 – 9 February

Time: 9.30 – 13.00 (2x mornings)

Cost: ALFED members £199+vat/person
Non members £299+vat/person

For more information or
to book a place please visit:
bit.ly/TrainWithALFED

For any queries ALFED
Training and Education Manager
Kathy Rombach:
kromback@alfed.org.uk

ALUMINIUM FOR ENGINEERS

– Advanced level

This live, tutor-led interactive workshop will be delivered over four mornings via our online platform.

An intensive course that creates the foundation and builds up knowledge from basic introduction to metals to the wide application of aluminium. The 'Aluminium for Engineers' syllabus covers metallurgy, specification, heat treatment, wrought processing, joining, testing, corrosion, coating and more.

This course is aimed at metallurgists, designers, manufacturing engineers and companies transitioning into aluminium.

Date: 8, 9, 15 & 16 March

Time: 9.30 – 13.00 (4x mornings)

Cost: ALFED members £395+vat/person
Non members £495+vat/person

WORLD OF ALUMINIUM

– Intermediate level

This live, tutor-led interactive course will be delivered over two consecutive mornings via our online platform.

The World of Aluminium is an intermediate level technical course and is specifically designed for production engineers, process and quality technicians, stockholders, customer facing sales/marketing persons and material/product purchasing individuals. This course is aimed at individuals who require a solid basic understanding to confidently engage with the aluminium industry and its products.

The course creates a solid basic understanding of aluminium, aluminium metallurgy, heat treatment and metal forming processes. It assumes no prior knowledge of metallurgy and is specifically tailored to the industry sector.

Technical elements are balanced with insights into the history of aluminium, its growth as the strategic metal of society, its sustainability properties and illustration of products, to create a holistic broad rounded knowledge.

When: 11 & 12 April

Time: 9.30 – 13.00 (2x mornings)

Cost: ALFED members £199+vat/person
Non members 299+vat/person





TRAINING ACADEMY



NEW COURSES



EFFECTIVE SALES WORKSHOP

The ALFED Training Academy 'Effective Sales Workshop' takes selling to the next level. It is designed to make sales work the way people buy, not the way you sell.

Who is it for:

This course is for you if you want to become the best salesperson/business development professional in your market or the go-to expert for all clients who are serious about finding the right solution for their challenges.

What will I learn:

- Filtering your target market
- Competitive talking points
- Building your prospecting script
- The perfect sales meeting checklist
- Getting a deal unstuck
- Mapping stakeholders
- Plan the work, work the plan: weekly cadence
- Art of the sales conversation
- Objections matrix
- Team selling for impact
- Creating personas and qualifying fast
- Proactive pursuit: turning cold calls into warm leads
- Asking the right questions
- Closing well
- Giving (and receiving) feedback

This comprehensive program will teach you and your team how to lead conversations masterfully from the first touch point to an ongoing relationship. Our course will help you overcome a host of selling related challenges and unlocks all of the potential your market contains.

When: 13, 14, 20 & 21 April 2022

Time: 9.30 – 13.00 (4 x mornings)

Delivery method:

Live interactive session delivered via online platform

Cost: ALFED members £495+vat/person
Non members £595+vat/person

EMOTIONAL INTELLIGENCE WORKSHOP

Empathy is one of the most important skills in management today. Relating to others is vital in the workplace. Whether you are the office junior, the CEO or anything in between this course will increase your emotional intelligence, helping you to identify and manage your own emotions, the emotions of others to show you the way to greater success.

What will you learn:

- Self-awareness in a leadership role and organisational behaviour
- Planning management and leadership effectiveness
- Team personalities, traits, types and challenges
- Explore and develop your own leadership style
- Effective behaviour at work
- Facing challenges
- Goal setting
- Being able to accept criticism and responsibility
- Being able to share your feelings with others
- Being able to solve problems in ways that work for everyone

When: 11 – 12 May 2022

Time: 9.30 – 13.00 (2 x mornings)

Delivery method:

Live interactive session delivered via online platform

Cost: ALFED members £199+vat/person
Non members £299+vat/person



FINANCE FOR NON-FINANCE MANAGERS

This introductory one-day workshop is perfect for non-financial executives, directors and managers at all levels who wish to gain a practical working knowledge of finance.

It de-mystifies the language of finance to enable managers to contribute more effectively to business performance and talk more easily to financial colleagues.

The course enables delegates to understand key accounting concepts, improve forecasting and cost management skills. It can be customised to individual companies using an organisation's own financial information.

Course content:

- How to interpret accounts, profit and loss statements and balance sheets
- Use of financial ratios
- Understanding accounts, accounting standards and rules
- Management accounting
- Control of working capital, stock, creditors, debtors and cash
- Budget forecasting and control
- Cost accounting and control
- Understanding the need to financially appraise capital expenditure projects
- Company taxation and strategies
- The economy, the city and financial control
- There are no pre-requisites for this course
- All delegates will receive a certificate of attendance

By completing this course, you will:

- Be able to demonstrate your understanding of financial techniques associated with capital expenditure and the concept of risk management.
- Be able to keep your budgeting and forecasting under stricter control.
- Understand financial jargon around reports.

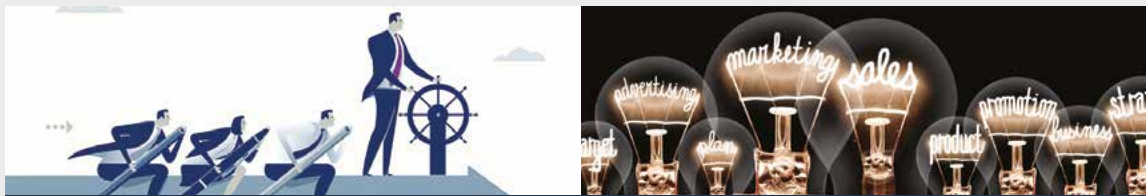
When: 16 - 17 March 2022

Time: 9.30 – 13.00 (2 x mornings)

Delivery method:

Live interactive session delivered via online platform

Cost: ALFED members £295+vat/person
Non members £395+vat/person



TRAINING ACADEMY

NEW COURSES

MANAGING PEOPLE FOR RESULTS

A crucial step to the success of running a successful business is good employee management.

Through skilful staff management you can create a functional and efficient work environment. Your staff are the people that power the growth of a company and help to operate the business on a day-to-day basis.

Productive and hardworking employees will help your business succeed whereas unhappy and lazy employees can cause your business to fail from the inside. Without a good team in place, your business will be going nowhere.

However, we understand that managing your employees isn't the easiest thing to do, especially since there is no "right" management style.

Being a controlling and harsh leader can lead to resentment and demotivation but being too soft can lead to bad habits or laziness.

But don't worry - we understand the struggle and we're here to help.

Course content:

- Objectives
- The elements of management
- Roles and functions of management
- Emotional intelligence
- Core skills
- Interaction
- What does the business want to achieve?

By completing this course, you will learn to:

- Have the right person for the right role.
- Measure staff performance, how well they are meeting their goals and what needs to be done to reach it.
- Oversee employee performance.
- Understand difference between effective and ineffective team.
- Understand staff communication and how they work together.
- Demonstrate consistent leadership.
- Understand the importance of emotional intelligence.
- Appropriate behaviour of staff and how to interact with them.
- Provide positive reinforcement.

When: 1 - 2 March 2022

Time: 9.30 – 13.00 (2x mornings)

Delivery method:

Live interactive session delivered via online platform

Cost: ALFED members £295+vat/person
Non members £395+vat/person

MARKETING

Who is it for:

The ALFED Training Academy marketing course is designed for the marketing executives, marketing co-ordinators, team leaders or any individuals who want to build their career in the field of marketing.

This course covers different marketing techniques to succeed in a competitive market:

- Marketing fundamentals
- Marketing mix
- Marketing techniques
- Different marketing approaches
- Customer communication techniques

What will you learn:

- How to create a roadmap that works for your business.
- Discover the opportunities of digital marketing.
- How to be flexible and agile in the new world of marketing.
- Understand the six processes which will drive marketing in the future.
- What continues to work and what no longer will work in the future of marketing.

When: 8 – 9 June 2022

Time: 9.30 – 13.00 (2x mornings)

Delivery method:

Live interactive session delivered via online platform

Cost: ALFED members £199+vat/person
Non members £299+vat/person

HEALTH AND SAFETY COURSES

The ALFED online health and safety courses are all CPD accredited and certified by various accrediting agencies, including iirm, The CPD Certification Service and ILM.

All of these courses are fully online and the course material will be available to the candidate for one year after the completion of the certification period.

- Asbestos Awareness (RoSPA & IATP Approved)
- Manual Handling (CPD Approved)
- Basic Fire Safety Awareness (RoSPA, IFE & CPD Approved)
- Fire Marshal (RoSPA & CPD Approved)
- Fire Extinguisher Safety (RoSPA & CPD Approved)
- Abrasive Wheels (IIRSM Approved)
- Working at Height (RoSPA Approved)
- Control of Substances Hazardous to Health (COSHH) (IIRSM Approved)
- Working Safely (RoSPA & IIRSM Approved)
- Emergency First Aid at Work - Refresher
- Workplace Health and Safety (IIRSM Approved)
- Working in Confined Space (IIRSM Approved)
- Introduction to Risk Assessment (IIRSM Approved)
- Electrical Safety (IIRSM Approved)
- Slips, Trips and Falls (IIRSM Approved)
- Noise Awareness (IIRSM Approved)
- Risk Assessment
- Personal Safety for Lone Workers
- Display Screen Equipment
- Behavioural Safety

Cost: Prices start from £45+vat/person per course

For more information or to book a place please click:
bit.ly/TrainWithALFED



ALFED HEALTH, SAFETY & ENVIRONMENT CONFERENCE

TUESDAY 29 MARCH 2022
WOLVERHAMPTON

A free to attend one-day health, safety & environment conference with presentations on current issues and upcoming legislation.

It is anticipated this event will attract delegates representing most sectors of the UK aluminium industry. The event is an excellent networking opportunity for quality, health, safety & environment professionals and anyone interested in the H, S & E issues.

PROGRAMME

09:15 Registration & Refreshments

- Welcome
- HSE Update – Martin Giles, HSE
- Construction Design Management – Alastair Mitchell, HSE

11:00 Coffee Break and Networking

11:30

- Alcohol & Drug Abuse in the Workplace – Sarah Taylor-Robinson, Go2Wellbeing

- Overview of Natural Resources Wales regulation and how Wales differs slightly from the rest of the UK – Jeremy Walters, Natural Resources Wales
- Metal Working Fluids – Paul Smith, HSE

12:45 Lunch

13:45

- Lisa Ramos, Inspirational Speaker: Lisa Ramos was involved in a forklift accident at work in 2006 and as a result of this, is now an above knee amputee. Lisa and her husband Dave offer a unique alternative to raising awareness of health & safety issues within the workplace, with their frank and honest account of her rehabilitation, and the long-term struggles that are part and parcel of adjusting to life, as a disabled person.

14:45 Coffee Break and Networking

15:15

- UK Best Available Techniques (BAT) - Oluwafemi Akinremi, DEFRA
- Welding and Grinding: Improving worker health through better understanding the hazards and provision of personal protective equipment - Scott Blakelock and Theo Simon, 3M



- Occupational Health & an Ageing Workforce – Ian Kendall, Croner

16:15 Closing Comments

16:30 End of Event

RESERVE YOUR EXHIBITION SPACE:

There is an opportunity for your company to secure an exhibition space enabling your company to promote your products and to network with delegates. There will be plenty of opportunities during the breaks for delegates to view the exhibits and discuss your products.

- Space approx. 2m wide
 - Table and 2 chairs, with space behind it for a pull-up banner(s)
 - All refreshments including lunch for your representative(s)
- Cost: £325.00 + vat per exhibition space**

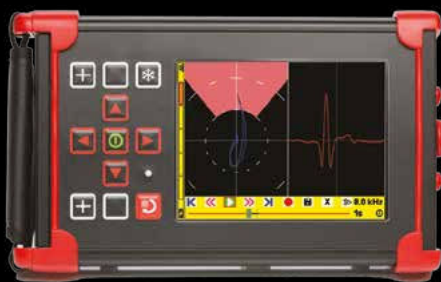
For any queries:

Please contact Margaret Lane at ALFED on 0330 236 2800 or email mlane@alfed.org.uk.

Reserve your free place:

<https://bit.ly/3v9T0nA>

AEROCHECK Eddy Current Flaw Detector



- Rotary drive capabilities as standard.
- Large, crisp daylight readable display.
- Rugged housing & excellent battery life.
- Dual frequency with Auto-mix.*
- Upload on-board step-by-step guides.
- Live loop feature.
- Conductivity measurement option.*
- Two-year warranty.

*AeroCheck + version only

SIGMACHECK 2 Eddy Current Conductivity Meter



- Extremely easy to use making it suitable for use by shop inspectors or engineers.
- Lightweight, rugged instrument built for harsh environments, including rubber boot.
- Standard operating frequency of 60 kHz, auxiliary frequencies of: 120, 240, 480.
- Meets conductivity measurement requirements for Aircraft manufacture & maintenance for the verification of proper alloy/temper or to detect heat damaged components.
- Two-year warranty.

ETHER NDE

sales@ethernde.com t: 01727 648050 www.ethernde.com

POWERING NET ZERO: GRANTS AND INCENTIVES

Many companies are looking to reduce their carbon footprint and make contributions towards net zero. If your company is considering investing in a project over the next twelve months, it is worth considering grants and incentives. With the new budget announcement comes significant promise to support the Government's drive towards net zero. In practice, this means that incentives are made available to support businesses to accelerate their own transition. How can businesses benefit from these incentives?

The grants landscape is complex, and planning is key for success. Grant programmes are often competitive – meaning not every project receives funding. A strong project isn't enough to be successful; companies need to make sure they prepare a strong bid to maximise their chances of getting funded, and to avoid wasting valuable time and resources on a submission.

Research and development and innovation grants are made available to support projects that are focused on developing new technologies and processes and can cover projects ranging from early-stage research projects to a first of a kind demonstrator.

In the UK, there is the Net Zero Innovation Portfolio administered directly by the Department for Business, Energy and Industrial Strategy (BEIS), supporting the 10 point plan for a green industrial revolution, with topics such as advanced carbon capture, usage and storage; direct air capture and greenhouse gas removal; and industrial fuel switching. Additionally, the recent budget announced £1b yearly funding for Innovate UK (the UK's innovation agency); much of that funding is expected to go towards net zero projects.

The UK also has access to Horizon Europe, the European funding programme for Research and Innovation. This programme makes available a wide range of grants to help industry become more sustainable.

Aside from R&D and innovation grants, there are also investment grants available. Those are really focussed on enabling companies to make investments, for instance to help them become more energy efficient and/or reduce carbon emissions. A good example is the UK Industrial Energy Transformation Fund (IETF) that supports the development and deployment of technologies that enable businesses with high energy use to transition to a low carbon future. With a total funding pot of £220m, the next deadline is on 6th of December. When applying for this type of grant, it is important to consider the counterfactual reference, which is the scenario that would occur without grant. The costs eligible for the funding is the difference between the proposed and the counterfactual investment. It is worth noting that some investments do not have a counterfactual (or rather, a "zero investment" one), such as heat recovery systems, process optimisation equipment, or other technologies with a sole purpose of achieving energy savings.

In summary, there are lots of different grants available that can cover different project types at different technological maturity. Carrying out a regular review of upcoming grants can help companies avoid missed opportunities and give ample time to confirm an opportunity and prepare a strong application. EY's Innovation Incentives team can help you consider where grant funding might fit into your projects landscape and how best to access that funding.

For more information please contact James Edgar, Senior Manager – Innovation Incentives, Ernst & Young LLP: James.Edgar@uk.ey.com



• Maciej Van Der Steen,
Director,
UK Grants Lead



• James Edgar – Senior
Manager – Innovation
Incentives



The home of aluminium trading



lme.com/aluminium

SETTING THE GLOBAL STANDARD

© The London Metal Exchange (the "LME"), 2021. The London Metal Exchange logo is a registered trademark of the LME. All rights reserved. All information contained within this document (the "Information") is provided for reference purposes only and must not be distributed or reproduced. The Information does not, and is not intended to, constitute investment advice, commentary or a recommendation to make any investment decision. The LME accepts no liability whatsoever to any person for any loss or damage arising from any inaccuracy or omission in the Information or from any consequence, decision, action or non-action based on or in reliance upon the Information.

3M UNITED KINGDOM

Berkshire 01344 857 873
<https://www.3m.co.uk>

3O

Kent 02084 687 335
<https://www.3olimited.com/>

A

AALCO

West Midlands 0121 585 3600
<https://www.aalco.co.uk/>

ABM (ADV BRIGHTWARE MANUFACTURING)

West Midlands 02476 100 567
<http://www.abm-manufacturing.com/>

ADVANCED FORMING RESEARCH CENTRE (AFRC)

Renfrewshire 01415 345 200
<https://www.strath.ac.uk/research/advancedformingresearchcentre/>

AERO METALS ALLIANCE

West Midlands 01932 576 820
<http://www.aerometalsalliance.com/>

AES METALS

Hampshire 01256 886 499
<http://www.aesmetals.co.uk/>

AIR PRODUCTS PLC HERSHAM

Surrey 01932 249 546
<http://www.airproducts.co.uk/>

AKZO NOBEL POWDER COATINGS

Tyne & Wear 0191 401 2362
<https://www.akzonobel.com/>

AKZO NOBEL POWDER COATINGS

West Midlands 0121 555 1500
<https://www.akzonobel.com/>

ALIDECK

Kent 01622 235 672
<https://www.alideck.co.uk>

ALL METAL SERVICES

Warwickshire 01895 444 066
<http://www.allmetal.co.uk>

ALLOY HEAT TREATMENT

West Midlands 01384 456 777
<https://www.alloyheat.co.uk>

ALMETRON

Clwyd 01978 660 297
<https://www.almetron.co.uk/>

ALPHA ANODISING & FINISHING

West Midlands 01384 233 330
<http://www.alpha-finishing.co.uk/home.php>

ALUBEND

Shropshire 03333 050 690
<https://www.alubend.com/>

ALUK (GB)

Monmouthshire 01633 810 440
<https://uk.aluk.com/>

ALUMINIUM SHAPES

Northamptonshire 01536 262 437
<https://alishapes.co.uk/>

ALUPRO

Worcestershire 01527 597 757
<https://alupro.org.uk/>

ALUTRADE

West Midlands 0121 552 0330
<https://www.alutrade.co.uk/>

ALVANCE BRITISH ALUMINIUM

Inverness-shire 01397 902 233
<https://alvancealuminiumgroup.com/>

AMAG UK

Surrey 01372 450 661
<https://www.amag-al4u.com/en.html>

AMARI METALS

West Midlands 01442 260 845

ARCHITECTURAL & METAL SYSTEMS UK

Gloucestershire 00353 21 470 5100
<https://www.ams.ie/>

ARCHITECTURAL POWDER COATINGS

Tyne and Wear 0191 499 0770
<https://apc-gb.com/>

ARCONIC GLOBAL ROLLED PRODUCTS

West Yorkshire 01274 805 104
<https://www.arconic.com/>

ARCONIC MANUFACTURING (GB)

West Midlands 0121 252 8000
<https://www.arconic.com/>

ARGENTUM METAL MANAGEMENT

Staffordshire 01827 726 493
<https://www.argentum.uk.com/>

ARGUS MEDIA

London 02077 804 200
<https://www.argusmedia.com/>

ARZYZ UK

London 0052 81 82 88 0000
<https://www.arzyz.com/en/>

ASC METALS LINCOLN

Lincolnshire 01522 501 777
<https://www.ascmetals.com/>

ASH & LACY FINISHES

West Midlands 0121 525 1444
<https://www.ashandlacy.com/>

ASPECT POWDER COATING

West Midlands 01384 826 115
<http://www.aspectpowdercoatings.com/>

AVON METALS

Gloucestershire 01452 874 500
<http://avonmetals.com/>

AXALTA POWDER COATING SYSTEMS UK

County Durham 01325 347 003
https://www.axalta.com/powdercoatings_gb/en_GB.html

B
BARLEY CHALU

Norfolk 01953 602 771
<https://www.barleychalu.co.uk/>

BARNSHAW'S SECTION BENDERS

West Midlands 0121 557 8261
<https://www.barnshaws.com/>

BRIDGNORTH ALUMINIUM

Shropshire 01746 788 111
<https://www.bridgnorthaluminium.co.uk/>

BROMPTON BICYCLE

Middlesex 0208 232 8484
<https://www.brompton.com/>

C
CAPALEX - CAPITAL ALUMINIUM EXTRUSIONS

Cumbria 01946 811 771
<https://capalex.co.uk/>

CAPITAL REFRACTORIES

Derbyshire 01246 811 163
<https://www.capital-refractories.com/>

CASHMORES METALS

West Midlands 01922 720 930
<https://www.cashmores.com/>

CHEMETALL

Milton Keynes 01908 649 333
<https://www.chemetall.com/>

CMK (TREATMENTS)

West Midlands 0121 552 3131
<http://www.cmkgroup.co.uk/>

COLESHILL ALUMINIUM

Warwickshire 01675 463 170
<http://www.coleshill-aluminium.com/>

CONCORDIA INTERNATIONAL FORWARDING

Middlesex 01784 262 200
<http://www.concordiafreight.com/>

COVENTYA

West Midlands 01902 797 990
<https://www.coventya.com/>

D
DORE METAL SERVICES

Kent 01795 473 551
<https://www.doremotals.co.uk/>

DURBIN METAL INDUSTRIES

West Midlands 01922 453 982
<https://www.durbinmetals.co.uk/>

E
ECODEK

Clwyd 01978 667 840
<https://ecodek.co.uk>

ELECTROSTATIC COATING

Leicestershire 01162 624 671
<https://www.escoating.co.uk/>

ELUMATEC UNITED KINGDOM

Milton Keynes 01908 580 800
<https://www.elumatec.com/en/home>

EMR - EUROPEAN METAL RECYCLING

West Midlands 0121 528 8961
<https://uk.emrgroup.com/>

ENVIROBUILD MATERIALS

London 02045 028 968
<https://www.envirobuild.com/>

EPWIN GROUP

Shropshire 01952 293 229
<https://epwin.co.uk/>

EURAMAX COATED PRODUCTS

Northamptonshire 01536 400 800
<https://www.euramax.eu/>

EXLABESA EXTRUSIONS DONCASTER

Doncaster 01302 762 500
<https://uk.exlabesa.com/en>

F
FABAL UK

Oxfordshire 01865 589 398
<http://www.fabal.com.tr/>

FOUNDRAX ENGINEERING PRODUCTS

Somerset 01458 274 888
<https://factorysuppliers.com/>

FRONIUS UK

Milton Keynes 01908 512 300
<https://www.fronius.com/en-gb/uk>

G
GARNALEX - GARNER ALUMINIUM EXTRUSIONS

Derbyshire 01332 883 950
<https://garnalex.com/>

GESTAMP CHASSIS

County Durham 01325 313 232
<https://www.gestamp.com/en/home>

GESTAMP TALENT

County Durham 01325 313 232
<https://www.gestamp.com/en/home>

GESTAMP TALENT (WOLV)

West Midlands 01543 456 507
<https://www.gestamp.com/en/home>

GESTAMP UK

County Durham 01325 329 168
<https://www.gestamp.com/en/home>

GLASSHOUSE

Glamorgan 029 2023 3133
<https://www.glasshouseltd.com/>

GOULD ALLOYS

Derbyshire 01246 263 300
<https://www.gouldalloys.com/>

GSM ALUMINIUM

West Yorkshire 01274 581 710
<https://www.gsmltd.co.uk>

H

HARSCO ALTEK EUROPE

Derbyshire 01246 383 737
<https://www.altek-al.com/>

HEAT TREATMENT 2000

West Midlands 0121 526 2000
<https://www.heattreat2000.co.uk/>

HERAEUS NOBLELIGHT

Cheshire 0151 353 2710
<http://www.heraeus-infraredsolutions.co.uk/>

HITACHI HIGH-TECH ANALYTICAL SCIENCE

Oxfordshire 01235 977 900
<https://hha.hitachi-hightech.com/en/>

HOGANAS (GB)

Kent 01732 362 243
<https://www.hoganas.com/>

HULAMIN OPERATIONS

Kent 01227 479 180
<https://www.hulamin.com/>

HUTTENES-ALBERTUS (UK)

South Yorkshire 01226 760 910
<http://www.huettenes-albertus.com/en/>

HYDRO ALUMINIUM DEESIDE

Clwyd 01978 660 231
<https://www.hydro.com/en-GB>

HYDRO BUILDING SYSTEMS UK

Gloucestershire 01684 853 500
<https://www.hydro.com/en-GB>

HYDRO COMPONENTS GLOUCESTER

Gloucestershire 01452 502 502
<https://www.hydro.com/en-US/about-hydro/hydro-worldwide/europe/uk/gloucester/hydro-components-glouce>

HYDRO COMPONENTS UK

Mid Glamorgan 01773 549 300
<https://www.hydro.com/en-GB/about-hydro/hydro-worldwide/europe/uk/bedwas/hydro-fabrication-bedwas/>

HYDRO EXTRUSION UK

Derbyshire 01773 549 300
<https://www.hydro.com/en-GB>

HYDRO EXTRUSION UK

Gloucestershire 01773 872 761
<https://www.hydro.com/en/cheltenhamextr/>

I

IMA SCHELLING UK

West Yorkshire 01937 586 340
<http://www.schelling-solutions.co.uk/>

IMPRESSION TECHNOLOGIES

West Midlands 02036 673 593
<https://impression-technologies.com/>

INAL (2020)

Greater Manchester 01617 900 118
<https://www.inal.com/>

INDUSTRIAL PHYSICS

Surrey 02039 363 565
<http://www.industrialphysics.com/ic>

INNOVAL TECHNOLOGY

Oxfordshire 01295 702 800
<https://www.innovaltec.com/>

INTEG METALS

London 0207 193 7920
<https://www.integmetals.com>

IPG PHOTONICS (UK)

West Midlands 02477 103 831
<https://www.ipgphotonics.com/en>

ISC - INTERNATIONAL SAFETY COMPONENTS

Gwynedd 01248 363 125
<https://www.iscwales.com/>

J

JENKS AND CATTELL ENGINEERING

West Midlands 01902 305 530
<https://www.jcel.co.uk/>

K

K HOME INTERNATIONAL

Tyne & Wear 01642 765 421
<http://www.khe.co.uk/>

KEEN

Oxfordshire 01865 261 431
<https://www.keen.biz/>

KINGSPAN (SHERBURN)

North Yorkshire 01944 712 000
<https://www.kingspan.com/gb/en-gb>

KLUTHE UK

Milton Keynes 01908 698 990
<https://kluthe.com/en>

KNOWLEDGE MASTER UK

London 07739 420 535
<http://www.knowledgemasteruk.com/>

KYOCERA SGS PRECISION TOOLS EUROPE

Berkshire 01189 380 567
<https://www.kyocera-sgstool.eu/>

L

LASER PROFILES

Dorset 01202 875 657
<http://www.laserprofiles.co.uk/>

LEVOLUX

Northamptonshire 01452 500 007
<https://levolux.com/>

LONDON METAL EXCHANGE

London 0207 113 8888
<https://www.lme.com/>

LUXFER MEL TECHNOLOGIES

Greater Manchester 0161 911 1000
<https://www.luxfermeltechnologies.com/>

M

MATERION UK

Hampshire 01252 375 001
<https://materion.com/>

MCA UK

West Midlands 0121 709 4813
<https://www.mcalloys.com/>

MECHATHERM INTERNATIONAL

West Midlands 01384 279 132
<https://www.mechatherm.com/>

MEPS INTERNATIONAL

South Yorkshire 01142 750 570
<https://www.meps.co.uk/gb/en/>

METAL COATING SERVICES

Yorkshire 01482 820 202
<http://www.metalcoatingservices.com/>

METALEX ACP LTD (FORMERLY ALIMEX)

Bedfordshire 01908 224 240
<https://www.metalex.co.uk/>

METALEX PRODUCTS

Dorset 03302 232 653
<https://www.metalex.co.uk/>

METALFIN

West Midlands 01922 451 115
<http://www.metalfinstockholders.com/>

METALLIC PROTECTIVES

Warwickshire 01926 811 851
<http://www.metallicprotectives.co.uk/>

METALWEB

West Midlands 0121 328 7700
<http://www.metalweb.co.uk/>

MICAS SIMULATIONS T/A QFORM UK

Oxfordshire 01865 775 412
<http://www.qform3d.co.uk/>

MILVER METAL CO

West Midlands 02476 667 098
<https://www.milvermetal.com/>

MULTI METALS

North Lanarkshire 01698 841 199
<https://www.multimetals.com/>

MULTIPANEL UK

Devon 01304 831 319
<https://www.multipaneluk.co.uk/>

N
NCH CHEM AQUA

West Midlands 01902 510 200
<https://www.ncheurope.com/en/>

NEXTDAY METALS

Northamptonshire 01604 415 036
<http://www.nextdaymetals.co.uk>

NORTON ALUMINIUM

Staffordshire 01543 279 329
<http://www.nortal.co.uk/>

NOVELIS AUTOMOTIVE EUROPE

West Midlands 0121 565 6228
<https://novelis.com/>

NOVELIS EUROPE

Cheshire 01483 853 136
<https://novelis.com/sustainability>

NOVELIS UK

Cheshire 01925 784 113
<https://novelis.com/>

P
PHOENIX MATERIALS TESTING

West Midlands 01384 382 253
<https://www.phoenix-mt.co.uk/>

PLASTOMETREX

Cambridgehire 01223 867 992
<https://plastometrex.com/>

POWDERTECH (CORBY)

Northamptonshire 01536 400 890
<http://www.powdertechcorby.co.uk/>

POWDERTECH SURFACE SCIENCE

Oxfordshire 01869 320 600
<http://www.powdertech.co.uk/>

PRESS METAL UK

West Midlands 01902 498 667
<http://www.pressmetalukltd.com>

PRETREAT

Lancashire 01422 847 671
<https://www.pretreat.co.uk/>

PRE-TREATMENT SOLUTIONS

Leicestershire 02475 090 133
<http://www.pretreatmentsolutionsltd.com/>

PRIMETALS TECHNOLOGIES

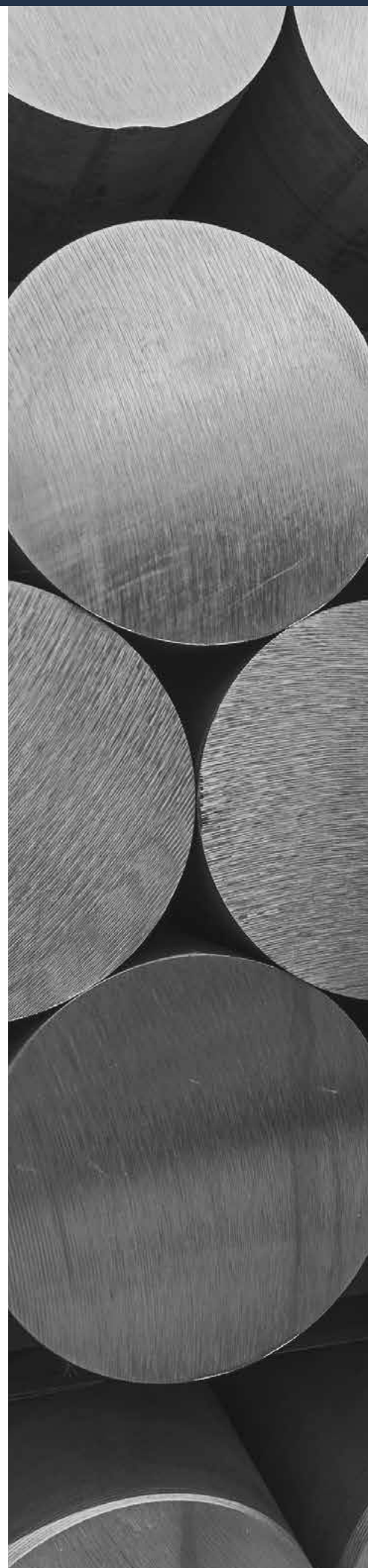
South Yorkshire 01709 726 571
<https://www.primetals.com/>

R
REAL ALLOY UK

Swansea 01792 871 000
<https://www.realalloy.com/eu/#>

REAZN UK

Staffordshire 01543 276 666
<https://www.reazn.com/>



RICHARD AUSTIN ALLOYS (GLASGOW)

Glasgow 01417 718 391
<http://www.raaltd.com/>

RIGHTON BLACKBURNS

West Midlands 01384 276 400
<https://www.rightonblackburns.co.uk/>

RIMSTOCK

West Midlands 0121 525 2525
<https://www.rimstock.com/>

ROTECH LABORATORIES

West Midlands 0121 505 4050
<https://www.rotechlabs.co.uk/>

RUSAL MARKETING GMBH

London 0041 41 560 98 00
https://rusal.ru/en/press-center/press-releases/uc_rusal_opens_trade_office_in_switzerland/

S

SCANSTRUT

Devon 01392 531 280
<https://www.scanstrut.com/>

SDE TECHNOLOGY

Shropshire 01743 450 501
<http://www.sde.technology/>

SENIOR ARCHITECTURAL SYSTEMS

Yorkshire 01709 772 600
<http://www.seniorarchitectural.co.uk/>

SHERWIN WILLIAMS UK

Merseyside 01514 860 486
<https://www.inver.com/en/index.html>

SILBERLINE

Fife 01333 424 734
<https://www.silberline.com/>

SIMMAL

Lancashire 01772 318 218
<https://www.simmal.com/>

SKF (UK)

Gloucestershire 01275 876 021
<https://www.skf.com/uk>

SMITHS ADVANCED METALS

Bedfordshire 01767 604 671
<http://www.smithsadvanced.com/>

SMITHS METAL CENTRES

Bedfordshire 08455 273 331
<https://www.smithmetal.com/>

SMITHS METAL CENTRES

Hertfordshire 08455 273 331
<https://www.smithmetal.com/>

SMITHS METAL CENTRES

Nottinghamshire 08455 273 331
<https://www.smithmetal.com/>

SNELSONS

Cheshire 01606 553 580
<http://www.snelsons.co.uk/>

SPA ALUMINIUM

Kent 01892 533 911
<http://www.spaaluminium.com>

SPARTAL

Gloucestershire 01386 700 898
<https://www.spartal.co.uk/>

SPEIRA UK

West Midlands 01902 396 630
<https://www.speira.com>

SUPERIOR PAINT & POWDER COATING

West Midlands 02476 464 676
<http://www.sppcltd.co.uk>

T

TANDOM METALLURGICAL GROUP

Cheshire 01260 271 122
<https://tandom.co.uk/>

TECOMET (SYMMETRY MEDICAL)

South Yorkshire 01142 855 881
<http://www.symmetrymedical.com/>

THE METAL CENTRE

West Midlands 0121 352 7200
<https://www.themetalcentre.com/>

TIMET UK

Swansea 01792 873 471
<https://www.timet.com/>

TIMET UK

West Midlands 0121 356 1155
<https://www.timet.com/>

TOMBURN

Hampshire 02392 692 020
<https://www.tomburn.com/>

TOMRA SORTING

Leicestershire 01162 181 430
<https://www.tomra.com/en>

U

UK PROFILE COMPONENTS

Oxfordshire 0333 456 0121
<http://www.lovealuminium.co.uk>

ULTROMEX

Merseyside 01512 038 377
<https://www.ultromex.com/>

UNITED ANODISERS

Middlesex 01895 871 700
<https://www.unitedanodisers.com/>

UNITED ANODISERS

West Yorkshire 01484 533 142
<https://www.unitedanodisers.com/>

V

VERTIK-AL

West Midlands 0121 608 7171
<https://www.vertik-al.com/>

VOITH TURBO

Surrey 0208 667 0333
<https://voith.com/uk-en/index.html>

W

W H TILDESLEY

West Midlands 01902 366 440
<https://www.whtildesley.com/>

WESTMORELAND MECHANICAL TESTING & RESEARCH

Oxfordshire 01295 261 211
<https://www.wmtr.co.uk/>

WILLIAM KING

West Midlands 0121 500 4100
<http://www.williamking.co.uk/>

WILSONS

Cambridgeshire 01487 833 600
<https://www.wilsonsmetals.com/>

OUR KNOWLEDGE PARTNERS

A

ADVANCED FORMING RESEARCH CENTRE (AFRC)

Renfrewshire 01415 345 200
<https://www.strath.ac.uk/research/advancedformingresearchcentre/>

B

BARTLETT SCHOOL OF ARCHITECTURE

London 020 7679 2000
<https://www.ucl.ac.uk/bartlett/architecture/>

BCAST, BRUNEL UNIVERSITY LONDON

Middlesex 01895 274 000
<https://www.brunel.ac.uk/research/Centres/BCAST>

BRITISH SAFETY INDUSTRY FEDERATION

Hertfordshire 01442 248 744
<https://www.bsif.co.uk/>

BURCHILL GC

London 07766 461 018
<https://burchillgc.com/>

C

COVENTRY UNIVERSITY

West Midlands 0247 765 7688
<https://www.coventry.ac.uk/>

CRU INTERNATIONAL

London 02079 032 000
<https://www.crugroup.com/>

E

ENERGY MANAGEMENT LLP

Wiltshire 01225 867 722
<https://www.energymanagementltd.com/>

H

HANATECH LTD

West Midlands 01384 913 010
<https://www.hana-tech.co.uk/>

I

INSTITUTE OF MATERIALS FINISHING

West Midlands 0121 622 7387
<https://materials-finishing.org/>

M

MAKE UK - THE MANUFACTURERS' ORGANISATION

London 020 7222 7777
<https://www.makeuk.org/>

S

SWANSEA UNIVERSITY

Wales 01792 606 770
<https://www.project-metal.co.uk/>

T

THE SOCIETY OF MOTOR MANUFACTURERS & TRADERS (SMMT)

London 0207 235 7000
<https://www.smm.co.uk/>

THE UNIVERSITY OF SHEFFIELD

South Yorkshire 01142 222 000
<https://www.sheffield.ac.uk/materials>

TWI - THE WELDING INSTITUTE

Cambridge 01223 899 000
<https://www.twi-global.com/>

U

UKRI/STFC RUTHERFORD APPLETON LABORATORY

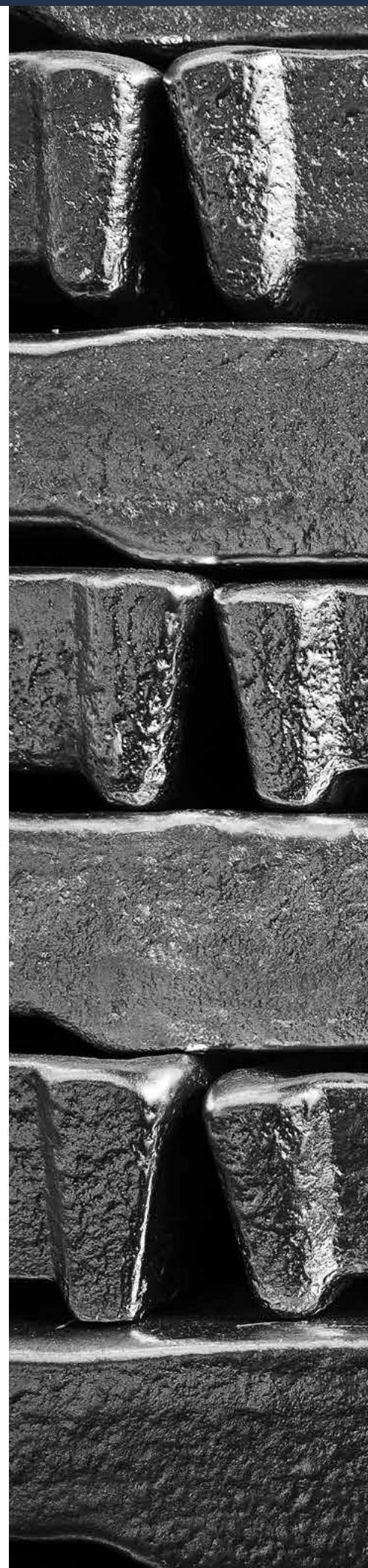
Oxfordshire 01235 445 962
<https://stfc.ukri.org/>

UNIVERSITY OF WARWICK

West Midlands 02476 523 523
<https://warwick.ac.uk/>

UNIVERSITY OF WOLVERHAMPTON

Shropshire 01902 323 900
<https://www.wlv.ac.uk/>



Discover your next course

Our courses are:

- Online courses, so you can train if you are working at work or home
- In-house tailored training specific to your needs, delivered at your site
- Practical, engaging programmes for all levels and roles
- Cost-effective, so you maximise use of your training budget
- Proven and popular modules focus on learning that can be immediately applied in the workplace



Find your next course at <https://bit.ly/TrainWithALFED>



NEC BIRMINGHAM
10-12 MAY 2022

UK'S BIGGEST AND BEST TRADE SHOW
FOR THE WINDOWS, DOORS, GLAZING & COMPONENTS INDUSTRY

DON'T MISS OUT
EXHIBIT AT FIT SHOW
WITH THE INDUSTRY'S VERY BEST

10,000+

POTENTIAL CUSTOMERS

90% OF ATTENDEES

INTEND TO PURCHASE WITHIN MONTHS OF VISITING THE SHOW

SEE THE BEST IN THE INDUSTRY, BE THE BEST IN THE BUSINESS.

RESCHEDULED DATES:
NEC BIRMINGHAM, 10-12 MAY 2022

Taking a stand at FIT Show 2022 is the most cost effective way to get your products and services in front of 10,000+ decision makers. Our team are ready to hear from you!

www.fitshow.co.uk/exhibit

#FITShow22

Engineering Supply Chain Show 2022

Where engineering
and manufacturing
buyers go to find
world-class suppliers,
exclusively in the UK
supply chain



Book your stand today at the Engineering Supply Chain Show 2022 and be part of the UK's national event for manufacturing and engineering - meeting buyers and specifiers with budget authority to spend

Why exhibit at Engineering Supply Chain 2022

Guaranteed audience: Co-located with MACH 2022, the UK's largest national gathering of engineering and manufacturing professionals - with over 25,000 visitors traditionally attending

Quality Sales Pipeline: Engineering Supply Chain 2022 will deliver valuable face-to-face time with buyers and specifiers looking to source capacity from the UK supply chain

Greener Manufacturing: This focused 3-day event is exclusively for UK registered businesses, helping to reduce goods miles as part of the UK's commitment to greener manufacturing

Reshoring Capacity: With government forecasts predicting UK growth of 5.7% in 2022, this exhibition is dedicated to buyers looking to source precision sub-contracting products and services from UK-based suppliers

Profile raising: Be part of the national event to showcase engineering and manufacturing in the UK, with Engineering Supply Chain 2022 delivering a wider audience focused on capacity in the UK subcontracting and supply chain

Don't delay - book today

Call Simon Bytheway on 01952 752518 or email esc@mta.org.uk

Organised by



Jointly sponsored by



engineeringsupplychain.co.uk