The University Of Sheffield.

AMRC Cymru

Food and Drink Industry

What we can do for you

amrc.co.uk

De-risking innovation

Amid enormous challenges for the food and drink industry, it has never been more important to embrace new technologies which have the potential to transform business performance and improve consumer perception.

The University of Sheffield AMRC Cymru is collaborating with Welsh Government and FDF Cymru to focus on productivity improvements, sustainable growth and the development of a resilient sector that is powered by cutting-edge and green technology.

By working together, AMRC Cymru and FDF Cymru can better understand the barriers food and drink manufacturers currently face when it comes to implementing newer technologies, and in doing so support wider productivity gains across the industry.

Jason Murphy, Operations Director, AMRC Cymru
Pete Robertson, Director, FDF Cymru

Sustainable packaging

Who we worked with:
Food and Drink Wales

Sector: Food, Drink and Packaging.

Technologies: Prototyping, material testing, advanced automation, vision systems.

The challenge: To accelerate the adoption of waste-reducing eco-innovations by integrating Industry 4.0 technologies in the packaging industry.

What we did:

- Developed an emerging technology demonstrator, based on a conveyor system comprising a re-configurable, modular system for prototyping production processes.
- The system will be linked together with collaborative robots and automated guided vehicles (AGVs).
- Additional equipment infrastructure will support the development of new designs, materials and processes.

Result:

We have built an expert team with the capability to support the food and drink industry as it seeks sustainable solutions to the plastic packaging waste problem with support from our collaborators Bangor University, BIC Innovation and Food Innovation Wales.

> **Our ambition is to raise Wales' international profile and proactively market our innovation in quality food and drink to the world. I believe the innovations we are exploring at AMRC Cymru can deliver a range of measures to future-proof the industry in Wales.**

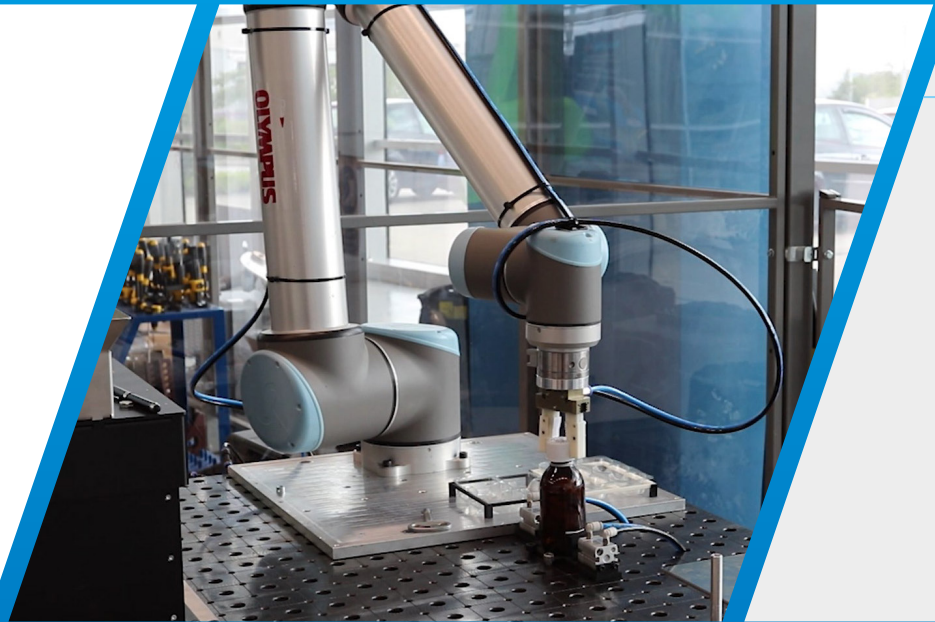**Lesley Griffiths**, Minister for Environment, Energy & Rural Affairs

Automation

Who we worked with:
Vitrition / Health Innovations

Sector: Pharmaceutical.

Technologies: CAD modelling, robotics, prototyping.

The challenge: To optimise manufacturing processes heavily reliant on operators performing manual tasks.

What we did:

- Created a bespoke robotic demonstrator to test automation of bottle packing.
- Developed process for automation of cap-screwing process.

Result:

Helped improve the efficiency of production facilities by testing the adoption of new technologies without the need for any capital investment to validate the system.

> **Without the AMRC's work on this project we would have found it very difficult to test a theory and would have thus struggled to justify an investment into some process automation.**
>
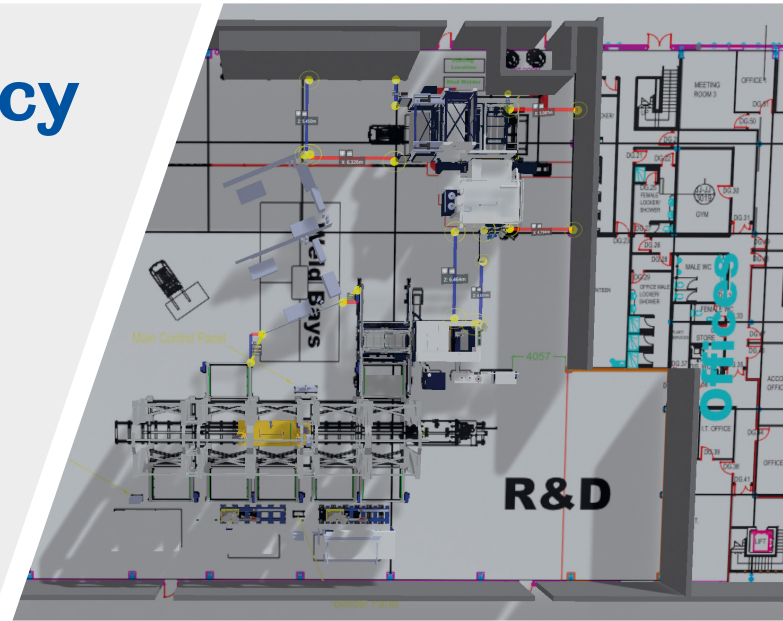> **Jamie Shoesmith**, Principle Healthcare Group
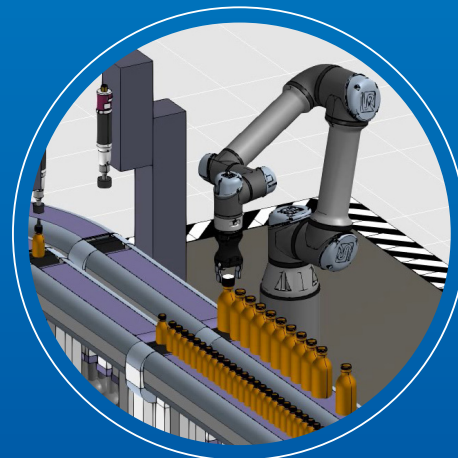
Improving efficiency

Who we worked with:
ACS Stainless Fixings

Sector: Metal fabricator.

Technologies: Virtual reality for factory layout planning.

The challenge: ACS wanted to validate their plans for a new factory layout.

What we did:

- Created a carbon copy 3D model of the new factory layout.
- Enabled design changes to be made pre-installation.
- Enabled validation for layout of equipment.

Result:

ACS identified improvements in their planned layout that they were able to make before installation and commissioning of equipment, in turn avoiding delays to the completion date and incurring significant additional costs.

> **Working with the AMRC was very beneficial and gave me peace of mind as we had one opportunity to get things right. Due to the scale and complexity of some of the equipment, any requirement to reposition some of the machines would have resulted in significant delays to the project completion date, but also we would have incurred significant costs.**

**David Flannery**, ACS Stainless Fixings

Harnessing Data

Who we worked with:
High Value Manufacturing (HVM) Catapult

Sector: Research and Development.

Technologies: High-volume manufacture, robotic interoperability, digital twin, mass customisation, advanced safety systems, machine learning, integration.

The challenge: To bring Industry 4.0 to life to help manufacturers better understand the potential benefits of adopting industrial digital technologies.
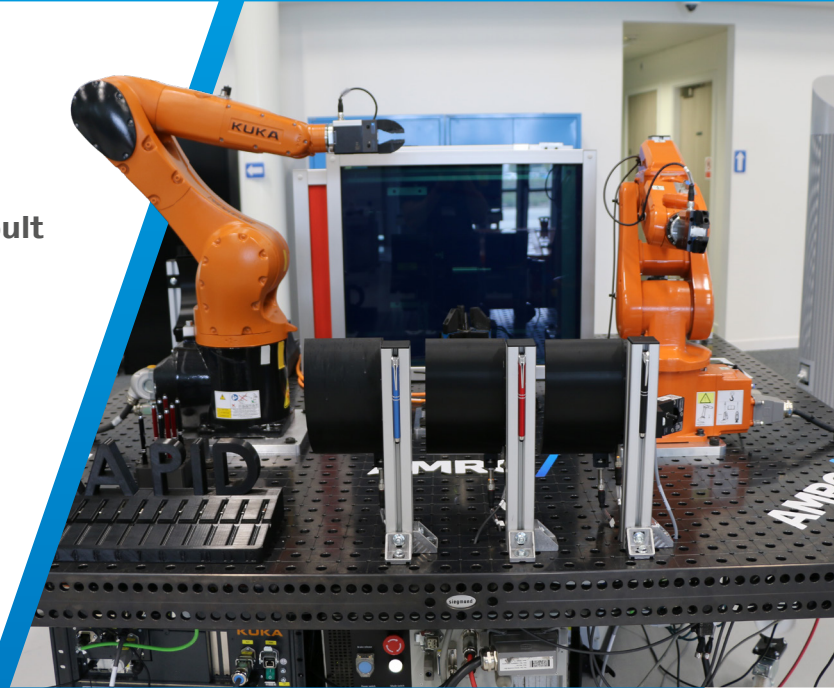
What we did:

- Built a platform to showcase simple and difficult aspects of implementing Industry 4.0 technologies.
- Demonstrated the value of data delivered through machine learning, digital twin, dash boarding and analytics.

Result:

A demonstrator now allows the user to interact directly with the technology and gain a tangible understanding of each discrete element and the potential benefits they can bring to a business.

> **The demonstrator stands apart from anything else that we have seen here and has really made me think about Industry 4.0 in a different way. I'm starting to see how it can apply to us, I've never had that before.**

Make UK Conference 2020 attendee

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/AMRC
Advanced Manufacturing
Research Centre

The University of Sheffield AMRC Cymru is a cutting-edge R&D facility, providing an open innovation platform accessible to all manufacturers of any size.

Part of the University of Sheffield Advanced Manufacturing Research Centre's (AMRC) network of world-leading research and innovation centres, our team de-risk R&D investment to drive step-change improvements in productivity, quality and sustainability.
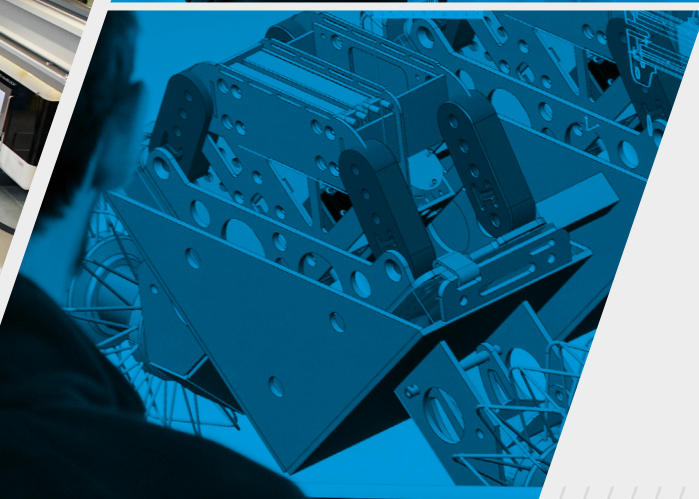
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If you need help or advice on how to implement new technologies to overcome your manufacturing problems, contact:
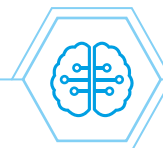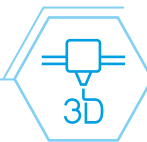
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Llywodraeth Cymru
Welsh Government

fdf food & drink federation
passionate about food & drink
angerddol am fwyd a diod
Cymru

CATAPULT
High Value Manufacturing