

Research Centre for
Manufacturing and Materials (CMM)
& Institute For Advanced
Manufacturing and Engineering (AME)

“The UK’s first faculty in the factory floor”

Research Centre for Manufacturing and Materials and the AME as Part of Coventry University's Research Structure



**INSTITUTE
FOR ADVANCED
MANUFACTURING
AND ENGINEERING**



CU Research

CU Teaching (Faculties)

CU Enterprise and
Innovation Organisation

University
Institutes

Clean Growth &
Future Mobility

Health and
Wellbeing

Global
Education

Mathematical,
Physical and
Computational
Sciences

Sustainability,
Equity and
Resilience

Responsible
Business,
Economies and
Society

Peace, Security
and Social
Justice

Creative
Cultures

Research
Centres

Manufacturing
& Materials

E-Mobility &
Clean Growth

Future
Transport and
Cities

Research
Themes

Sustainable
Manufacturing

Structural
Integrity & NDT

Functional
Materials &
Chemistry

Metrology

Digital
Manufacturing

Lasers &
Joining

Technology
and Innovation
Management

Translational
Institutes

AME

NSIRC

Institute Clean Growth and Future Mobility

“Creating safe and sustainable transport solutions fit for the cities of the future”



E-Mobility & Clean Growth

Battery Systems, Electric Machines, Power Electronics, Hydrogen Fuel Cells, Systems Integration



Manufacturing & Materials

Metrology, Digital Manufacturing, Functional Materials & Chemistry, Lasers & Joining, Structural Integrity & non-destructive testing.
Sustainable Manufacturing and Technology & Innovation Management



Design & Human Factors

Human Factors in Future Transport, Design Ergonomics, Accessibility, Passenger Experience and Design, Mixed Reality and Driver Simulation



Advanced Systems

Cyber Physical Systems & Security, Vehicle Dynamics, Controls, CAM/ADAS, Simulation & Digital Twins, AI, Big Data, Machine Learning



The Institute for Advanced Manufacturing and Engineering Model



**INSTITUTE
FOR ADVANCED
MANUFACTURING
AND ENGINEERING**



**LACK OF
INDUSTRY-
READY
GRADUATE
ENGINEERS**

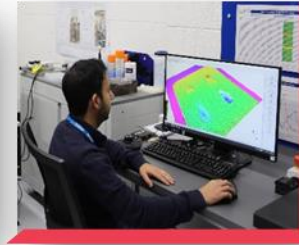


**THE RETURN ON INVESTMENT
OF RESEARCH
& DEVELOPMENT**

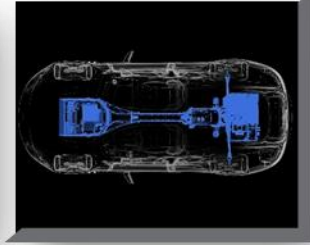
Skills & Training



Research



Business Growth



THE QUEEN'S
ANNIVERSARY PRIZES
For Honors and Further Education
2019

HIGHER EDUCATION
FUNDING COUNCIL
FOR ENGLAND

hefce

Coventry
University



Coventry & Warwickshire
Local Enterprise Partnership

UNIPART
MANUFACTURING

1 THE UK'S
FIRST
'FACTORY
ON THE
FACTORY
FLOOR'

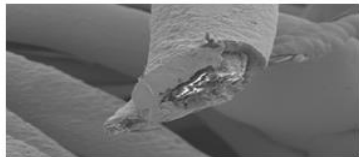
Research Themes & Capabilities



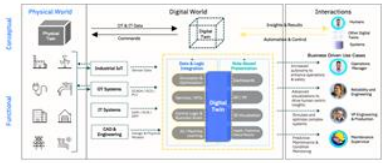
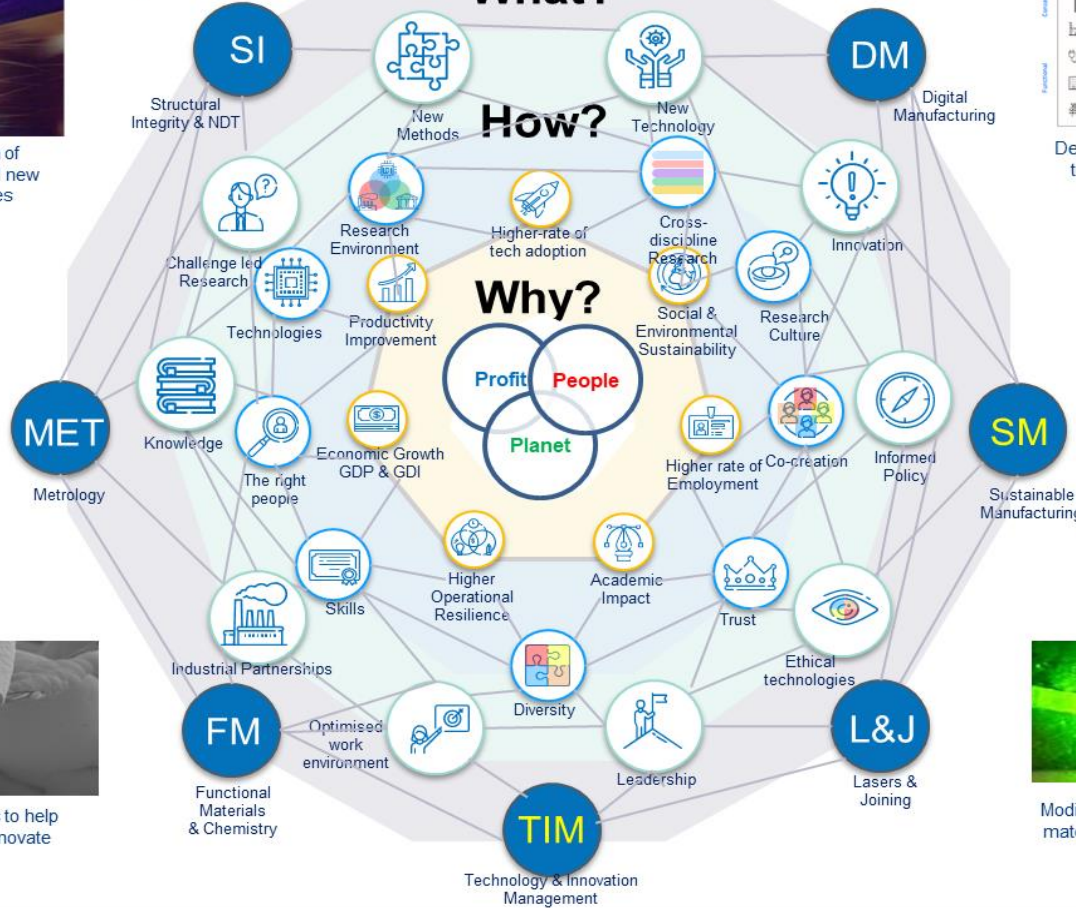
Improved characterisation of manufacturing materials and new strengthening technologies



Reducing manufacturing variation and uncertainty through improved product and process control



Providing smarter materials to help companies diversify and innovate



Developing and applying digital technologies to create value within manufacturing and engineering businesses.



Developing sustainable products and processes with total life-cycle consideration and implementing manufacturing systems that minimise environmental impact



Modification of textures and properties of material surfaces and thin materials and laser joining

Areas of Expertise and Capability provide by Coventry University to support the Clean Futures Project

The AME was built and equipped by the two principal partners with additional financial support from the Higher Education Funding Council England and opened in 2014 offering 2000 m2 of purpose built manufacturing and teaching space. The AME's manufacturing hub, equipped with state-of-the-art facilities and laboratories including:

- Materials Laboratory;
- Metallurgy Laboratory;
- Sensors Laboratory;
- Metrology Laboratory;
- Robotic automation training area;
- Laser Manufacturing Systems;
- Rapid Prototyping Area;
- Functional Materials and Chemistry Laboratory;
- Laser Processing Laboratory; and
- State of the Art Digital Manufacturing and Engineering demonstrator.

Areas of Expertise and Capability provide by Coventry University to support the Clean Futures Project

1- Clean Technology Capabilities

- E-machine design and test capability (measurement systems development)
- Fuel cells / electrolysis capability and measurement systems development
- Battery module/pack manufacturing and testing
- Design/DFM / DFR&R
- Technology Know-how
- Wire EDM
- Metrology laboratories
- Lasers
- Design and testing Software / Simulation
- Digital twins
- Testing capability (Metallurgy, Mechanical...)

2. Sustainability Technologies and Approaches

- By-product utilisation
- Fuel switching
- End of life
- Material selection (LCA perspective)
- Additional engineering services (second stage engineering/sustainability engineering)
- Material and manufacturing efficiency

3. Technical Consulting

- Life-cycle analysis
- Carbon Accounting
- Technology and transformation roadmaps
- Digital engineering and manufacturing technologies and methods
- Sustainable manufacturing technologies
- Clean mobility technologies
- Socio-economic analysis methods

Thank you for your time!

Want to get involved?
Contact us to find out more.....

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