



#### ontact us

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# UK-SWE MEETING SCOTLAND 11-13 JUNE 2019

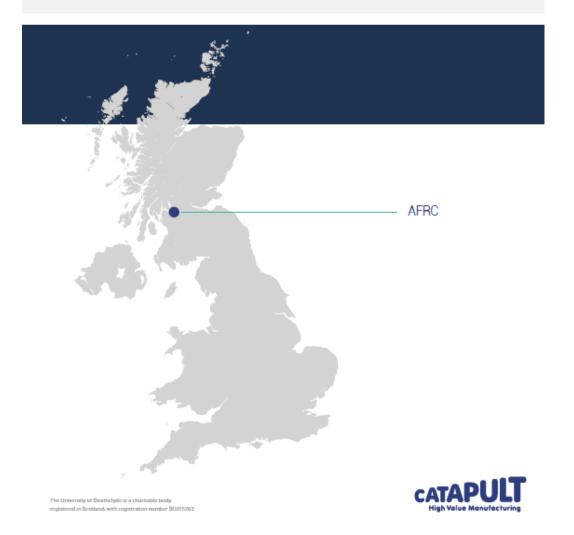
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**RISE Research Institutes of Sweden** 

DIVISION ENHET

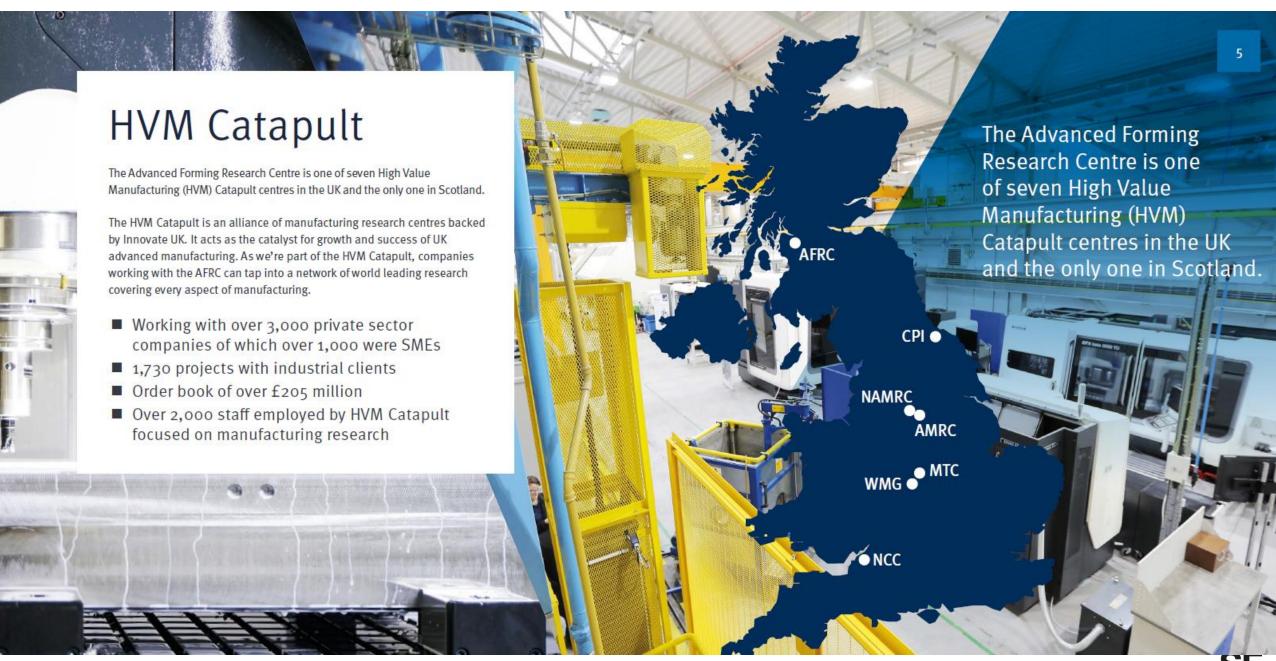


## Syfte och mål

- Skapa möjligheter till samverkan och nya affärer genom kontakter med forskningsinstitut och företag i flyg- och rymdbranschen
- Möjlighet att "pitcha" produkter/tjänster/samverkansbehov med fokus på samverkan
- Information om möjligheter till samverkan inom forskning
- Studiebesök
- Mingel och middag



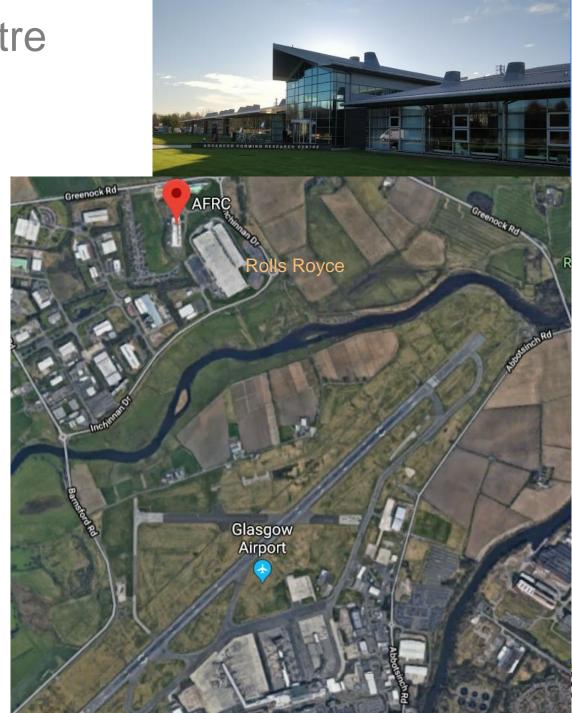




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Advanced Forming Research Centre





## Univ. Strathclyde - Glasgow





#### About the AFRC

The University of Strathclyde's Advanced Forming Research Centre (AFRC) is a globally-recognised centre of excellence in innovative manufacturing technologies, engineering research and development, and metal forming and forging research.

For almost a decade the centre has been at the heart of manufacturing research in Scotland. It is the only High Value Manufacturing Catapult centre in the country, one of only 7 in the UK making it the critical link between manufacturers in Scotland and the rest of this world-class network of manufacturing innovation and expertise.

The AFRC helps to fill the gap between fundamental academic research and industry. We help companies to turn innovative technologies and ideas into a commercial reality that will increase their competitiveness, boost their business and secure the manufacturing sector in Scotland and the UK for generations to come.

We offer world-class expertise and cutting-edge technologies that help firms develop solutions that bring about real business benefits for companies of all sizes from across the UK and internationally.

- £60m facility established in 2009
- £38.5 million project portfolio
- Over 400 projects; 331 with industrial clients
- 5,680m2 research space





Hot forging and forming capability	
Schuler AG 2100 tonne screw press	6
ACB Loire 200T Superplastic Forming Press	7
ACB 1200T Superplastic Forming/600T Hot Creep Forming Press	8
Die Wear Cell	9
Schuler Multiforge – 3500kN	10
HARE clipping press – Model 63HP	11
Fanuc M-61B Robot	12
Fanuc M-710iC Robot	13
LAND thermal imaging cameras	14
Cold forming capability	
Jean Perrot Maneo CNC Press-Brake	15
WF Flow Former – STR 600-316	16
MJC Rotary Forge – RFN 200T – 4	17
500 Tonne Hydraulic Press	18
Materials characterisation capability	
HA 250 Servo-hydraulic test machine	19
Zwick/Roell Amsler Z250 Material Testing Machine	20
Zwick/Roell Z150 Material Testing Machine	21
Instron Electro-Thermal Mechanical Tester (ETMT)	22
Phoenix High Strain Rate testing machine	23
Alicona Infinite Focus IFM G4	24
FEI/Oxford Instruments Quanta 250 FEG SEM	25
MTS3000 hole drilling system for residual stress measurements	26
Electronic Speckle Pattern Interferometry (ESPI)	27
PROTO LXRD	28
Flexible Automation Cell	29
Zwick ZHV1 –micro Vickers hardness tester	30
Olympus GX51 inverted optical microscope	31
Leica DM12000M Optical Microscope	32

Metallographic preparation	
Buehler Vibromet 2 vibratory polisher	3
Buehler EcoMet 300/AutoMet 300 grinder/polisher	3
Struers Lectro-pol-5 electrolytic polisher	3
Buehler Abrasimatic 300	3
Buehler IsoMet 5000	3
Metrology capability	
GOM ATOS TripleScan III/rotary table	3
GOM ARAMIS 5M optical 3D deformation system	3
Zwick / Roell BUP 1000 sheet forming machine	4
Mitutoyo CMM Crysta Apex C 121210	4
EU Classic Electrolyte Marking Machine	4
General machine tool capability	
Agie Charmilles Hole Drill DRILL 11	4
Agie Charmilles Wire EDM F1440CCS	4
Jones & Shipman CNC Surface Grinder 624 Easy	4
HAAS CNC Mill TM-2	4
HAAS CNC Lathe TL-1	4
DMG MORI DMU 125 FD DuoBLOCK	4
DMG MORI HSC 75 Deckel Maho CNC	4
Sheet metal guillotine/Horizontal bandsaw/Pillar drill/Bandsaw	5
TIG welding plant/Abrasive blast unit/Pedestal grinder	5
Furnace capabilities	
CMI bespoke Gas Furnace	5
Carbolite furnace HRF 7/324	5
Carbolite furnace GPC 12/131	5
Carbolite furnace LCF 14/350	5
Electrotherm rotary furnace – 5700	5
VFE/TAV TPH25/25/35 Horizontal Vacuum Furnace	5
Quench tank 1000L	5
Polymer quench tank	5



# What will the Lightweight Manufacturing Centre look like?

The Lightweight Manufacturing Centre will be designed as a flexible space supporting a broad range of research and development activity, linking academia to industry.

In support of industry, the centre will have the following capability and facilities:

Resin transfer moulding of composite components

Automatic tape laying

Autoclave

 Machining cell for machining and trimming composite components and manufacturing composite tooling

Non-destructive testing

CNC Ply cutting

■ ISO Class 8 clean-room



In February 2016, the Scottish Government launched its manufacturing action plan: A Manufacturing Future for Scotland, which called for a centre of excellence for manufacturing along with a skills academy.

In September 2016, in the Government's Programme for Government, this centre for excellence and skills academy became known as the National Manufacturing Institute for Scotland (NMIS). NMIS is a major, transformative project being developed by the Scottish Government and the University of Strathclyde, in association with the Scottish Research Partnership in Engineering, Scottish Enterprise and Highlands and Islands Enterprise, Skills Development Scotland, the Scottish Funding Council and the private sector.

NMIS will launch a new era for Scottish manufacturing and will equip manufacturers of all sizes to compete in future international markets. It will support the transformation of Scotland's manufacturing industry in terms of innovation and digital opportunities and create sustainable, high-value, highly-skilled jobs.



## UK-SWE Aerospace matchmaking event

• 11/6 Afternoon Landvetter **12.05**/Arlanda **11.30** - via Amsterdam – Glasgow International **16.05** (KLM)

• 12/6 AFRC

Morning Company presentations (SMEs pitch competences, OEMs clarify needs)

Afternoon Workshop/discussions concerning future collaborations (Business & RND)

Round Tour at AFRC and <u>Lightweight Manufacturing Centre</u>

Evening Dinner at AFRC for participants

**13/6** 

Morning Visit UK – Company or organisation (RR, Collins Repair etc)

Afternoon Glasgow International **16.55** – via Amsterdam - Landvetter **22.45**/Stockholm

Arlanda **22.55** 













### Aerospace Defence and Security trade organisation



#### Working for our members

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#### **SCOTLAND**

Recognising the need for Scottish based companies in the Aerospace, Defence, Naval and Security Sector to have an effective voice, ADS Scotland was established in 2005 to represent both SME and multinational company members. Today, our members significant contribution to both the Scottish and UK economies is recognised by the policy makers.

Our purpose is to deliver real added value by bringing global business opportunities to members, improving manufacturing productivity and efficiency through our SC21 programmes, raising individual company profile and marketing member and sector capability internationally.

#### **UPCOMING EVENTS**

- Security & Policing 2019
  - Mar 5, 2019 Mar 7, 2019
- Security & Policing 2019 Thought Leadership Panel and Security Dinner Mar 6, 2019 - Mar 6, 2019

