



NUCLEAR AMRC
ADVANCED MANUFACTURING RESEARCH CENTRE

CATAPULT
High Value Manufacturing

Tuesday
15 January
2019

Advanced cooling with carbon dioxide and MQL

The Nuclear AMRC invites you to explore the state of the art in supercritical carbon dioxide coolant in advanced machining for the most demanding industries and applications.

The Nuclear AMRC is leading research into supercritical CO₂ cooling for challenging machining tasks, and combining it with minimum quantity lubricant (MQL) techniques for optimum performance.

The technology has been shown to reduce tool wear compared to traditional oil-based coolants, but needs further R&D to optimise cutting conditions for the most demanding tasks.

This one-day forum will bring together industrial users with researchers to discuss the opportunities and challenges of CO₂ coolants, and share the latest research and best practice.

To register, or for more information:

 advanced-cooling-co2-mql.eventbrite.co.uk

 events@namrc.co.uk  0114 222 9954

Venue: AMRC Knowledge Transfer Centre, University of Sheffield,
Advanced Manufacturing Park, Brunel Way, Rotherham, S60 5WG



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Agenda

Tuesday 15 January 2019

9.30	Registration, refreshments and networking
10.00	Introduction and safety brief
10.20	Milling of aerospace-grade titanium alloy with scCO₂ Dr Nikolaos Tapoglou, AMRC
10.50	Introducing MQL in heavy manufacturing Dr Agostino Maurotto, Nuclear AMRC
11.20	A case study of cryogenic milling of Ti-6Al-4V François Laforce, Cetim
12.00	Lunch and networking
1.00	Machining stainless steel with scCO₂ and MQL Dr Krystian Wika, Nuclear AMRC
1.30	Current tribological aspects of CO₂ and MQL in machining Dr Tom Slatter, University of Sheffield Drilling titanium with CO₂ – a case study Ellis Taylor, University of Sheffield
2.15	Environmentally sustainable machining Dr Iwona Zwierzak, Nuclear AMRC
2.35	Discussion
3.05	Close

Venue

AMRC Knowledge Transfer Centre, University of Sheffield,
Advanced Manufacturing Park, Brunel Way, Rotherham, S60 5WG
The AMRC campus is just off Sheffield Parkway (J33 M1) – follow signs
to the Advanced Manufacturing Park, and aim for the large wind turbine.
Free parking is available in front of the Nuclear AMRC, or follow signs to
the AMRC overflow carpark further up Brunel Way.
Satnav: please use the postcode S60 5TZ.
Map and directions: namrc.co.uk/contact

