Roger Wareing of FMS, Iraitz Arrospide Garro of AMRC and Steve Thompson of FMS.

Cleaning up machining fluids

Fluid Maintenance Solutions (FMS) worked with the AMRC's machining experts to demonstrate the benefits of its precision filtration solution for high-performance machine tools.

FMS develops innovative technologies and services to reduce the environmental impact of fluids used in manufacturing processes. It is the sole agent for the innovative IFDR Precision Filtration Solutions developed by an Italian company, RBM di Battistuta.

IFDRs have proven to extend tool life, improve component quality, and reduce the use and disposal of cutting fluids and eliminate the need for filtration consumables.

FMS started working with the AMRC with Boeing to help demonstrate the technology's benefits to the UK supply chain. The company trialed an IFDR on some of the state-of-the-art machine tools at the AMRC Factory of the Future. The solutions have also been tested on machines operated by some of the AMRC's Tier One partners, including Rolls-Royce.

"It has proven itself to be a very successful filtration system," says Steve Thompson, *Engineering Director at FMS. "In an aerospace grinding application, 90 per cent of retained particles in the processed fluid stream were below 1.95 microns, with no particles above 6 microns."*

To put itself at the heart of the UK manufacturing industry, FMS took premises alongside the AMRC on the Advanced Manufacturing Park in South Yorkshire.

"We wouldn't be here without the involvement of the AMRC," says Thompson. *"The openness of the AMRC is helping us to introduce a step change in technical capability and operational reliability."*

FMS continues to investigate new applications and technologies, and has recently successfully completed a one-year feasibility study funded by the Technology Strategy Board. The aim was to develop in-house technology to recover grinding fines and metals contained within sludge's found at the bottom of machine sumps which would otherwise be disposed of in landfill as hazardous waste.

The company is also studying the benefits and impacts of its technology for the machining of other materials. In a study involving the machining of carbon graphite electrodes, an IFDR reduced the consumption of paper roll used to remove carbon dust from one roll every six days to one per six months.

FMS has now joined the AMRC as a Tier Two member.

"The main benefit of membership is the access to engineers who are continually seeking process improvement and wanting to remove variables and risk from processes," says Thompson.

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