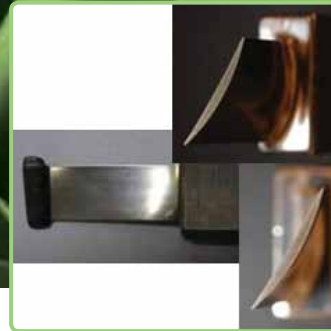




AEROSPACE

CUSTOM ECM PARTS & MACHINERY FOR THE AEROSPACE INDUSTRY



Compressor blades



Shark skin effect surfaces

pECM Systems supply Electro Chemical Machining Systems around the world.

Every Stealth Bomber, Eurofighter and Apache Helicopter has major components manufactured on our machines.



Designers and builders of custom Electro-Chemical Machines, pECM's principal competitive advantage over conventional machining methods (milling and EDM) is our ability to machine the newer nickel and titanium based materials used in 'high-tech' applications (e.g. aero engines, gas turbine blades) to a greater degrees of accuracy and much more quickly. Some examples of the machine's output are high tolerance moulding and stamping tools, precision gears, aerospace vanes, electric shaver heads and more recently our ECM machines have been used to finish and polish knee implants for a multinational orthopaedic company.

Founder of pECM, Steve Duffield, design and development work in the field of ECM has been recognised by winning 2 Small Firms Merit Awards for Research and Technology (SMART) for innovation.

The first SMART award was for a feasibility award around the pECM technology, to prove that with suitable controls the process could be controlled very accurately and then could be applied to other non-traditional ECM markets.

ECM in its simplest form has been applied to large, high value, difficult to machine components but because of the large machining gaps detail was impossible to produce. This first SMART award showed that the technology could be applied to small intricate applications such as tablet punches and minting dies.

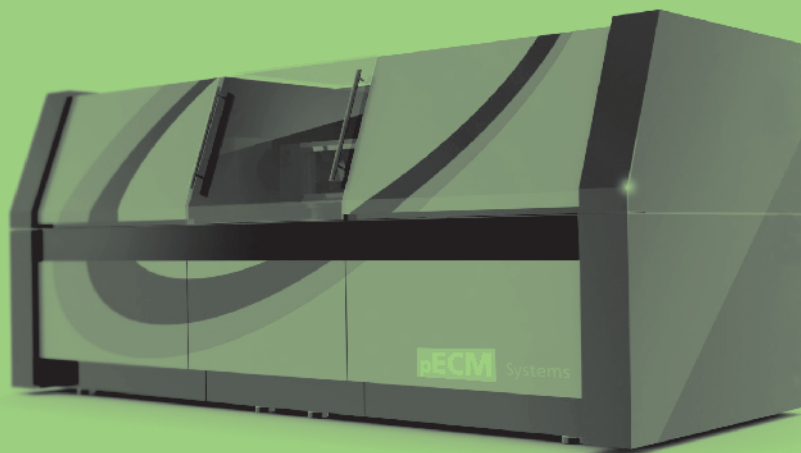
The second SMART award was to develop an 'ECM Milling machine'. With this technique simple electrodes could be used to machine complex shapes.



Aerospace

pECM Systems have produced multi-axis machines capable of machining platforms and shrouds of turbine blades at the same time as machining the airfoils.

Leading and trailing edges machined to finished drawing dimensions.



Honeycomb seals



Labyrinth seal

Benefits

- Very high stock removal rates
- Sub micron surface finish
- No brittle re-cast layer
- No heat effected zone
- Zero Cathode wear
- Very stable process
- Extremely repeatable
- Very fast ROI
- It is a new process to most companies so any development work can usually be set off against Corporation Tax (125% for SMEs)

Applications

- Compressor Blades
- Turbine Blades
- Precision components
- Honeycomb seals
- Strip seals
- Rotating Components
- Exotic Materials
 - Nickel Alloys
 - Titanium Alloys
 - Titanium Aluminide

