

Partner

# Polar IceTech



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**Polar IceTech, a Midleton firm, is expanding its cryogenic cleaning services with the help of CAPPa Cork Institute of Technology, BIO-Explore & Enterprise Ireland.**

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## Profile of Company

Polar IceTech are Dry Ice Blasting specialists. They partner with Irish industry to create and develop cleaning processes that are more lean, efficient and cost effective. Polar IceTech work with key decision makers to help them reduce downtime, increase efficiencies and reduce costs by introducing eco-friendly cryogenic cleaning solutions.

Established in 2005, Polar IceTech analyse data before and after the cleaning process and use this to identify and continuously improve on the efficiencies offered by dry ice as a cleaning purification. Specialized equipment and processes were used to clean high-value, moisture-sensitive and abrasive-sensitive critical assets, including process and production equipment with dry ice (solid carbon dioxide).

Polar IceTech have engineered equipment and processes to deliver even greater results for customers and have trained operators to the highest standard. Furthermore, they continue to engage with specialists to ensure the solutions offered are delivering the lean measures promised.



Polar IceTech's  
Damien McDonnell

## The Product

Dry ice blasting is the process of cleaning and decontaminating surfaces with dry ice. It is also known as Cryogenic cleaning. The Dry ice blasting process works by accelerating dry ice through a stream of compressed air at the speed of sound. The speed and temperature of the dry ice being blasted causes the primary containment to crack.

When the dry ice hits the surface it instantly converts to gas and expands, breaking up the already cracked primary containment without damaging the surface. The process can be as sensitive or as robust as the containment requires.

Polar IceTech received funding from Enterprise Ireland for research currently being carried out in the Centre for Advanced Photonics and Process Analysis (CAPPa [www.cappa.ie](http://www.cappa.ie)) and BIO-Explore at Cork Institute of Technology on the impact of cryogenic cleaning on bacteria.

Polar IceTech as a relatively new business was not in a position to fully understand the range of supports available to it to engage with third level research bodies. After an open day hosted by CAPPa initial discussions began with the company and CAPPa suggested a body of work involving both them and CIT colleagues in BIO-Explore, to give greater scientific clarity to efficacy of the 'Dry Ice Blasting' process. After successfully helping the company to write an application for an Innovation Voucher the details of the research were fleshed out and systematic series of experiments conducted to validate the process. The final report on the overall testing is due shortly but the results are very clear and are beyond the expectations of the company.

Dr Liam Lewis of CAPPa centre commented 'This is a classic example of how simple, direct engagement with a company can not only provide significant scientific weight to an in-house process, but can also display the range of offerings available within CIT for collaboration. The company are now firmly looking towards carrying out further research work and establishing a long-term relationship with CIT.'

## Planning for the Future

Damien McDonnell is planning to expand in all of the markets in which Polar IceTech are competing. They are working on the growth of sales, particularly in the Pharmaceutical sector.

Polar IceTech have broadened their base with three employees now located in Limavady near Derry, Northern Ireland. Mr McDonnell has International plans for Polar IceTech and over the past 12 months they have tendered contracts with partners from the Middle East, Belgium, UK and Germany. The workforce of Polar IceTech is expected to grow by 20% by the end of 2017 with a 25% increase in turnover rate.

The company are also targeting power generation businesses in both Europe and the UK. Damien McDonnell believes that the experience gained by the company and their investments in high-tech equipment will enable success for Polar IceTech in these markets.

Polar IceTech plan to engage and collaborate with universities in educating Engineering students about the dry ice blasting process.

*"We found CAPPa very professional, helpful and accommodating to deal with. They were quick in understanding what we wanted to achieve and were enthusiastic about working with us to achieve these goals. We experienced a number of hiccups along the way but the manner in which these were dealt with was impressive and incredibly professional. Overall they were a pleasure to deal with."*

Damien McDonnell, Managing Director of Polar IceTech.



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