ENBIO™

ENBIO HORIZON 2020

ENBIO'S INNOVATIVE PLATFORM TECHNOLOGY HAS AN EXCITING FUTURE IN SURFACE COATING APPLICATIONS

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Horizon 2020 Synergy

ENBIO, an Irish based SME, is seeking collaboration with researchers and innovators to deliver high performance next generation surface technologies, through the Horizon 2020 opportunity. ENBIO's technology is applicable and relevant to many work programmes and topics across Horizon 2020, such as Health, Transport (Space and Aerospace in particular), Environment, Energy, and NMP. Please contact us to discuss in more detail how we can collaborate with you to ensure our surface technology can help solve your application challenge, and how we can work together through Horizon 2020 to achieve research and innovation breakthroughs.

John O'Donoghue, ENBIO's CEO, is excited about the prospect, and says *"The promise of engaging at European level with industry leaders to fast-track research and innovation collaborative efforts to bring our technology to new international markets is highly compelling and we look forward to engaging in the Horizon 2020 programme to achieve significant economic and societal impact."*

Track Record in Collaborative Research

ENBIO has experience of participating in several research and innovation projects and proposals at national and international level. To highlight one recent case study, ENBIO has been working with the European Space Agency (ESA) to produce thermal control coatings designed to survive the harsh conditions of space. The focus of the work has been on the upcoming ESA-NASA Solar Orbiter mission, which will operate in direct view of the sun, and endure 13 times the intensity of terrestrial sunlight and temperatures rising as high as 520°C. To deal with this challenge, ENBIO has developed a thermal control coating, called 'SolarBlack' which is a thin, highly adherent, black ceramic layer deposited on titanium using the CoBlast process. Due to its high emissivity and extremely high solar absorbance, the coating can efficiently absorb incoming solar radiation and re-emit it to the surrounding cold medium of space. It has a unique combination of durability, thermal stability, and electrical conductivity, and contains no volatile organic compounds. Through the ESA-NASA Solar Orbiter mission, the coating technology is set to be applied to the closest man-made object to the sun.

Image: ESA/AOES

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Company Profile and Background

ENBIO is a pioneer of next generation surface technologies. This SME company is focused on providing innovations in metal surface modification and enhancement technologies to a variety of sectors with increasingly complex challenges in high performance coatings requirements. ENBIO was founded in July 2006 to exploit the CoBlast concept, a market disrupting technology for the surface modification of reactive metals such as titanium and its many alloys, cobalt chrome, aluminium, and certain stainless steels.

The application of the CoBlast technology is across many industries and the ENBIO team has the skills to engage with customers to develop custom coatings and processes from fundamental research stages right through to production. From a beginning in the medical device industry, ENBIO has expanded into the space sector through contracts with the European Space Agency (ESA). Building on these experiences, ENBIO's vision for CoBlast is to develop it as a core surface enhancement process across multiple industry sectors, e.g. aerospace, industrial, oil and gas, energy, and environment. New next generation surface products are currently being developed for a number of applications such as i) corrosion protection, ii) adhesion enhancement, iii) biofouling, and iv) wear resistance.

Technology

ENBIO's core technology, CoBlast, replaces the oxide layer of metals with a thin, customised, and mechanochemically bonded Skin. The process is clean and simple, requiring no thermal input and no wet chemistry. The CoBlast Skin is integrated with the substrate to a level beyond the capabilities of traditional coatings, providing a new interface through which the metal can interact with, and be protected from, its environment. The CoBlast technique was originally developed to coat titanium medical device implants but through extensive research and development, the process was found to also work for other reactive metals with surface oxide layers, like aluminium and stainless steel.