

International collaborations create chemistry

Case study: Smart Separations Ltd

Dr Hugo Macedo arrived in the UK as an ERASMUS student and started his company, Smart Separations Ltd, on his kitchen table in 2013. The company now has state of the art facilities in London and Portugal and a team of 25, with European funding playing a vital role in its development. Put simply:


“Our company would not exist today without them,” says Hugo

Smart Separations Ltd. is growing fast and has developed two technology platforms: an innovative microfiltration technology based on ceramic membranes with conical pores, and a fast-acting antimicrobial coating that is effective against SARS-CoV-2. **“Together, these platforms, which are already seen in countries such as Britain, Portugal and the U.S., are capable of improving the quality of our air and water, streamlining cancer research and taking one more step toward a sustainable planet.”**

Building a business & the importance of international mentoring

Hugo founded Smart Separations on the back of an InnovateUK SMART award, which enabled him to secure a €50,000 phase 1 grant from the EU’s SME Instrument scheme, designed to ‘boost fast company growth and market-creating innovation’. This paid for a consultant to draw up a business plan. **“It was vital,”** says Hugo. **“It wasn’t just the business plan, it’s everything that comes with it: all the contacts we’ve had and the changing approach to our business.”**

“It provided access to the EU mentorship programme [which] helped us immensely by opening up the door to other countries, where we could tap into different expertise. I think that is something we are slowly forgetting in the UK. In the past we used to have that support from mentors, for example through the Innovate UK Growth Acceleration Programme, but now we just have the grant.”



“Chemistry knows no languages, it knows no borders. A molecule of DNA is the same in Britain, in Portugal, in Mexico or the US. It doesn’t matter where you do a chemistry experiment, it will react the same way.”

Dr Hugo Macedo, CEO, Smart Separations Ltd

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International exchange

Hugo’s team at Smart Separations is very diverse, with employees from the UK, Portugal, Argentina, Greece, Mexico and South Africa. **“Mobility is so important. To me it’s the same thing if I’m hiring someone British, Portuguese or Bulgarian – I’m hiring them for their talent.”**

Hugo is understandably very passionate about the ERASMUS programme and **has hosted six students through the scheme at his company to date.** **“The students we host get a taste of studying in another setting but they also get experience of working in industry. They have a chance to come out of their country, out of their comfort zone, and they work hard and apply themselves.”**

Scaling up and going to market

The phase 1 support gave Hugo and Smart Separations leverage to secure an additional InnovateUK Industrial Strategy Challenge Fund grant and a €2 million phase 2 grant from the EU's SME Instrument programme. **“The SME phase 2 was a game changer for us: it helped us scale-up that technology initially conceptualised in my kitchen, to manufacture these membranes and bring them to market.”**



Company: Smart Separations Ltd

CEO: Dr Hugo Macedo

Funding: Horizon 2020 SME Instrument Phase 1 & 2

“Microfiltration is a poorly explored field,” explains Hugo. “The technologies that are there are either very expensive or very inefficient. We came up with a way to create membranes with conical pores. This is a game changer as we can cut whatever pore size the customer needs by slicing the membrane at a particular point along the length of the cone.” The microfilters have a variety of applications, from air filtration to antibody production. They are also reusable and recyclable, with a longer shelf life and reduced environmental footprint.

Anti-microbial coatings aren't new, but they can take hours to act and tend to be less effective against viruses. **“Our technology is unique because it is fast acting and equally effective against bacteria, fungal spores and viruses – including SARS-CoV-2. It's applicable to multiple types of surfaces, including glass, plastics, metals, wood and fibres, meaning it could significantly enhance the safety of key public spaces, like education and medical venues, as well as airports, train stations, means of public transport, or hospitality venues, helping us all get back to our day-to-day activities.”**

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