

Lena Lindblad: Breakthrough – and a lot of pushing

Lena Lindblad, head of research at I-Tech and creator of new anti-fouling agent Selektepe, feels more comfortable talking about science than herself. But she does say that if there's any secret behind her success, it's probably down to "a certain naivety". By **Stevie Knight**.



It gained momentum: a production arrangement with Cambrex Corporation and Chugoku Marine Paint (CMP) followed. Finally, in 2009, after three years of work, I-Tech filed the necessary dossier and Selektepe started its route towards the market.

But regulations haven't been the only hurdles to overcome, Dr Lindblad recalls: "We began by talking to the paint manufacturers, which proved difficult. Finally in 2007 we began to involve the shipowners themselves in the conversations." It started to change then as the paint manufacturers could see that their own customers were showing some interest.

Eventually an innovative Japanese paint producer decided it was worth running trials not only for evaluation but also for commercialisation. She says:

"Despite performing science in the laboratory, one of my proudest moments was standing in CMP's office in Hiroshima and seeing the results of the patch tests. Even after many years of pursuing it, it was amazing to see first-hand what it could do in real life. My vision became, in that specific moment, a reality."

Selektepe is about to make it into CMP's paint range for the first time, and Dr Lindblad is eagerly awaiting the results. And here she is finally realistic: "Ship owners have been frankly disappointed by many of the antifoulings that came after tributyltin was banned. I think they might be worried that more change will bring even less efficacy."

PROVEN FORMULA

But Dr Lindblad is clear on the efficacy of Selektepe. The formula itself has been proven, right down to the minute quantities of biocide necessary for effective action, how it compares with others in the market along with points such as wear and the effects of temperature, turbidity and so on. Further, she already knows it's competitive on a price basis, so now it's down to encouraging the market to see it in action.

Dr Lindblad's experiences qualify her to offer good advice for others thinking about following an idea into the marketplace: "It's key to get to your end customer, the one who will be buying the product, and prove the idea's relevance to them. In return they will help you to understand their need. Without that 'real life input' there will never be a product but only a vision that will never have the power to become realised. Then start three-way conversations with the people in the middle."

Oh, and there's something else: "Remember that there are always people that are smarter and more experienced than you are. Paying great attention to what they have to say will pay off."

Luckily no-one flagged up the 15-year rocky road ahead for her at the beginning, otherwise there would be no Selektepe, and the industry would be missing a strong advocate for solid risk analysis and practical responsibility. **MS**

GETTING INVOLVED IN big ships was simply not something she'd previously considered. But after finishing a PhD in pharmacology, research on barnacles presented her with a 'breakthrough' moment. A particular compound, medetomidine, seemed to alter the behaviour of small marine organisms and prevent the larvae settling – without a long term or lethal effect.

It was exciting, she explains, "since most antifoulings need a large proportion of biocides in order to reach an efficiency level and you always have to deal with the most tolerant species". This way, she said, the amount of active ingredient could be dramatically reduced. Eventually the new formula was called Selektepe, named after its "selective action".

But the breakthrough was followed by an awful lot of pushing, she recalls. "As a scientist at the university, you are just dealing with the research. I naturally thought paint manufacturers must, of course, be interested in the discovery." She admits her ignorance about market realities probably helped her make the decision to follow the formula into the commercial world with a small company, I-Tech: "I am a naturally curious person, and I wanted to see how far this discovery would go," she says.

PUSHING DOORS

The first door to push against was the industry hype around silicon antifouling, linked with the nervousness about the upcoming Biocide Products Directive (BPD): "People really thought we were backward... that it was just a matter of time before biocidal formulations were completely overtaken by silicon coatings," she explains. Marine coatings suppliers were less than interested in development of active chemicals.

The second barrier was to fulfil regulatory requirements. By 2006, Dr Lindblad found herself leading a team to assemble the 15,000 page BPD (EU98/8) dossier. "If I'd had any idea of the amount of work it would take to comply with the directive, I would have said it was impossible for a small company like ours to do it. We simply didn't know it." It took three years to complete the dossier and it was submitted in 2009 to the UK Health and Safety Executive for evaluation.

The path was, once more, not straightforward and "extremely frustrating", says Dr Lindblad. I-Tech had followed the requirement outlined by the original directive, only to find that this changed when the BPD was replaced by the Biocide Product Regulation in 2013. But at last, in February this year, after six years of evaluation, the European Chemical Agency (ECHA) decided to recommend an inclusion of Selektepe to be used in antifouling paints.

I-Tech has had good hands to hold on during the years. The Swedish Foundation for Strategic Environment Research (MISTRA) stepped in with sponsorship for research development in the early stages, and a little later Volvo got involved to help industrialise the product.

“People thought it was just a matter of time before biocidal formulations were completely overtaken by silicon coatings”