– PREPARING FOR THE FUTURE

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With global biofouling hotspots intensifying as a result of oceanic warming, the impact of hull fouling on the profitability of a ship's operations will continue to generate an indefinite commercial headache for operators. Growing regulatory movement against the transportation of invasive aquatic species (IAS) by the biofouled hulls of the international shipping fleet is also creating a huge drive towards the use of advanced antifouling technologies, and will continue to do so into the future. In certain regions, strong sanctions are being imposed on heavily fouled ships, resulting in port entry refusal until offending biological hitchhikers have been removed. On an international level, the IMO, following its successful campaign to clamp down on IAS transfer via ballast water, has recently set its sights on hull fouling.

Ships laying idle in biofouling hotspots due to economic conditions, or those stuck in congestion at ports, act as a magnet for barnacles and other marine organisms. Long identified as being 'public enemy number one', the hard-shelled design of barnacles particularly creates a huge amount of hydrodynamic drag. Therefore, regulations that seek to restrict ship emissions, such as the incoming Global Sulphur Cap 2020 that will impact bunker fuel prices as ships switch from HFO to burning lower sulphur fuels and alternatives, will force operators to adopt antifouling coatings that successfully safeguard optimum hull efficiency in an effort to reduce bunker fuel bills.

A tricky guest to get rid of thanks to their super strong non-soluble glue, barnacles resist removal by cleaning techniques deployed for soft fouling organisms such as slimes and weeds. More abrasive procedures are required to remove the calcareous crust of a barnacle colony and these practices usually result in damages to the hull coating and great costs incurred to the operator – again, not good for the bottom line.

When taking all of the aforementioned issues into account, it becomes clear that approaches to antifouling technology use will evolve over the next couple of decades. Demand for antifouling coatings that guarantee fouling prevention performance regardless of a ship's trading pattern, activity and extended periods spent static at anchor, will increase. Already coating manufacturers are innovating, creating advanced antifouling coatings inclusive of novel technologies to out their products one step ahead of competitors, to offer the much-needed solution to biofouling.

However, the future may hold the emergence of some new technological innovations in the field of antifouling. Over the next 10-20 years, paint manufacturers are more likely to use the technology toolkit that is already available for deployment to futureproof the global fleet against biofouling.

One significant solution in the antifouling tech toolkit is I-Tech's non-metal, organic active agent for antifouling coatings: Selektope. When exposed to Selektope, barnacle larvae are repelled from the ship hull, kept in swimming mode with a non-fatal effect. This revolutionary bio-tech approach to fouling prevention is controlled by the activation of the barnacle larvae's octopamine receptor and is completely unique in its application within hull coatings.

Since I-Tech's decision to bridge bio-technology into the marine coatings industry, multiple commercial products have been launched containing Selektope. Performance results indicate that ships using Selektope continue to sail barnacle-free years after initial application during a drydocking, or after sailing out of the shipyard. Hundreds of ships are currently sailing under the protection of Selektope and according to current uptake, the future will see it become the go-to solution for keeping ship hulls barnacle free. ■