Biology-Based Marine Antifouling Coating

Description:

Biofouling is the undesirable accumulation of organisms on submerged structures or other structures exposed to water or damp environments; these organisms often reduce efficiency or stability of structures, are hazardous, and are costly to remove. The lab has found that neuroendocrine hormones, like noradrenalin, particularly when immobilized onto a surface, prevent settling of marine larvae such as barnacle cyprids, oyster pediveligers, encrusting bryozoans, and calcifying tubeworms. Attaching themselves to surfaces, organisms not only add weight and impede water flow – hampering performance – but can also cause deterioration of the surface itself.

The innovation of safe and effective antifouling coatings for both aquatic and marine environments will produce significant energy savings for the marine transportation industry, help promote a cost-effective maritime-based national defense, and augment world-wide aquaculture production, thus improving food security by providing a benign, safe and non-toxic alternative to the highly toxic copper ablative antifouling coatings that dominate the multi-billion dollar world-wide marine antifouling market today.

Applications:

- Marine – boat and ship hulls, docks, bridge piers, seawalls, offshore oil drilling platforms
- Industrial – industrial water intake systems (especially deterring aquatic invasive species like zebra mussels), recirculating pipe systems
- Home – damp basement, shower, exteriors exposed to rain, pool areas, outdoor furniture

Benefits:

- Environmentally friendly non-toxic formula
- Prevents adhesion of fouling organisms rather than destroying the organisms
- Readily applied to a variety of surfaces

Biofouling on a boat hull by barnacles, oysters, and other marine life
(Source: themorningbreaks.files.wordpress.com)

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