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A New Approach to Developing Antifouling Surfaces by Preventing Adhesion

An environmentally-safe antifouling agent significantly reduces marine organism adhesion on surfaces, cutting maintenance and increasing efficiency for vessels and other applications by 30 to 60 percent.

Marine organisms such as barnacles, algae, and mussels continuously foul ship hulls and other surfaces subject to seawater. Drag caused by fouling reduces top speed and increases fuel usage. Current antifouling agents rely on the release of heavy metals into surrounding water. Heavy metals act as general biocides, killing anything in their proximity. Although effective, these antifouling agents are a source of environmental concern and destroy local ecosystems.

Researchers at Purdue University have developed a more environmentally conscious approach to antifouling that relies on reduction of marine organisms' ability to adhere to surfaces. Application of this agent is highly effective, with a 30 percent to 60 percent reduction in adhesion strength of marine organisms. Reduced adherence facilitates removal, resulting in less maintenance and increased efficiency without the environmental impact associated with heavy metals.

Advantages:

-Reduces adhesion strength of marine organisms by 30 percent to 60 percent

-Environmentally-safe solution would replace heavy-metal-based antifouling agents

-Potential uses extending beyond marine vessels

Potential Applications:

-Materials

-Manufacturing

Technology ID

65880

Category

Chemicals & Advanced Materials/Coatings, Adhesives & Sealants

Materials Science & Nanotechnology/Advanced Functional Materials

GreenTech/Environmental Remediation & Pollution Control

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View online

-Green Technology

-Chemical Analysis

TRL: 4

Intellectual Property:

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