

Shark skin saves naval industry money

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Covering ship hulls with artificial shark skin could help ships sailing smoothly. The growth of marine organisms such as barnacles on ship hulls is a major cause of increased energy costs in the naval industry. Shark skin offers a structural design that prevents this so called 'bio-fouling'.

Ralph Liedert from the University of Applied Sciences, Bremen, Germany, is presenting his work on the application of artificial shark skin in a new anti-fouling strategy at the Society for Experimental Biology Annual Main Meeting in Barcelona.

Shark skin comprises scales that can flex individually from each other. Liedert produced a synthetic shark skin of elastic silicone, which has a significantly decreased contact surface.

This reduced contact surface makes it harder for barnacles to attach, and reduces fouling by 67%. When applied to the ship hull, this artificial surface enables ships to 'self-clean', and a speed of 4-5 knots would remove all organisms attached with little adhesion.

Until recently, paints containing a biocide were used to prevent growth on submerged surfaces, but these were banned because of the the toxic effect of the highly toxic and unspecific biocide component on marine life.

As barnacles, mussels and algae cause up to 15% increase in the drag resistance of ships, this research is providing an alternative anti-fouling strategy of great importance.

Source: Society for Experimental Biology

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