

Editorial

Dear readers of International Shipbuilding Progress,

Please recall the editorial from the previous issue, in which we communicated the possibility of publishing your articles open access at no cost for selected articles made possible by Stichting Bijlboegfonds. Our ambition with this arrangement is to allow both scientists and engineers in industry to share their insights in a way that makes it possible for everyone to use those insights to their benefit. New open access articles are again available with the publication of this issue. It is clear that an overarching theme of our community is to investigate strategies for reduced impact on the environment in a shipbuilding context.

Issue 70(1) contains the following articles.

The first article, titled *Exploring the potential of iron powder as fuel on the design and performance of container ships* by De Kwant and colleagues, examines the potential implications of using iron powder as an alternative fuel on the design and performance of ships. Iron powder is a relatively new alternative energy carrier. The key benefits of iron powder are that it is a circular energy carrier that emits no greenhouse gases. Transitioning to iron powder is expected to have far reaching implications for the design and performance of ships. Iron powder as a fuel is investigated in this article for application in a container ship.

The next article is titled *Effects of surface wettability of silicon-incorporated diamond-like carbon films on barnacle larval settlement* and written by Ozeki *et al.* The colonization of barnacles on surfaces has detrimental effects on shipping, leisure vessels, heat exchangers, oceanographic sensors, and aquaculture systems. One strategy for avoiding barnacle colonization on surfaces is to utilize surface wettability. Silicone-incorporated diamond-like carbon (Si-DLC) has high hardness and a low friction coefficient, and an increase in the incorporation of Si leads to hydrophobicity. Si-DLC is investigated here as an anti-fouling agent with less impact on the environment than traditional anti-fouling.

Zwart and colleagues have investigated trim optimization in *A grey-box model approach using noon report data for trim optimization*. Trim optimization improves the energy efficiency of ships. However, trim tables are only available for a limited number of ships. There is thus a desire to develop additional, more accurate trim tables without resorting to model testing. A method that uses noon report data and a grey-box modelling approach is proposed. The grey box model consists of a multi-layer feedforward neural network to estimate the required shaft power, using operational parameters and an initial estimate of the required shaft power. The grey-box model is applied to a chemical tanker.

The editorial board and I wish that you find this issue interesting.

All the best,
Peter Wellens
Editor-in-chief