



# ELiSE

Evolutionary Light Structure Engineering

Shipbuilding

## Yacht engineering

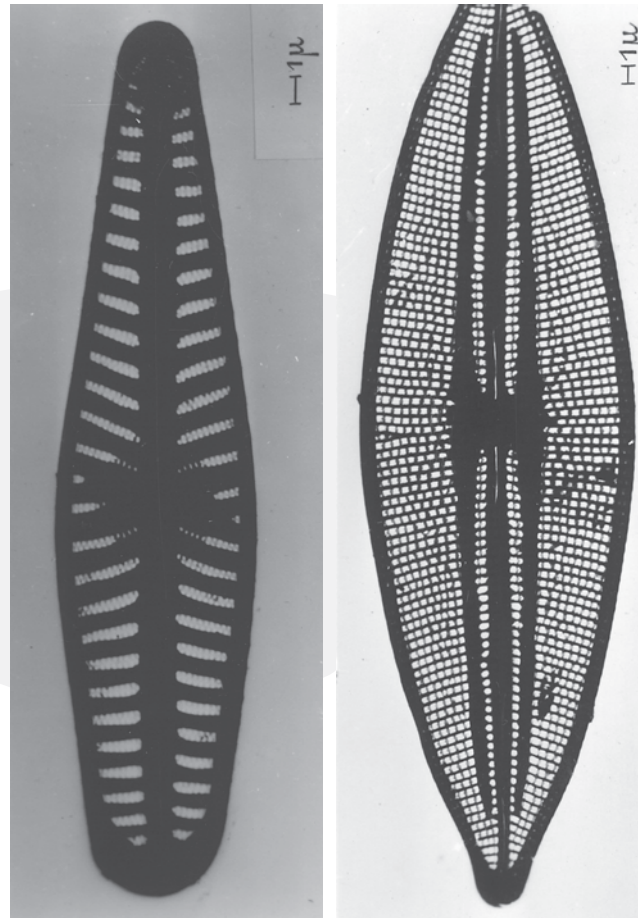
Lightweight construction is of great importance for the development of high-performance yachts. A light yacht exhibiting the same structural stability, but at a reduced weight compared to other yachts has the advantage that it displaces less water and thus also has a reduced water resistance leading to increased speed. Alternatively the saved weight can be added to the keel bomb increasing the righting force, which further results in an increased effective sail area enhancing the sailing performance.

The integration of bionic lightweight structures into the construction of yachts is accomplished in cooperation with the company judel/vrolijk & co, one of the most renowned design agencies for high-performance sailing yachts worldwide. It is the scientific aim to use the bionic lightweight and optimization procedure ELiSE ("Evolutionary Light Structure Engineering") to evaluate a new way for the construction of yachts with significantly increased sailing performances.

The technical aim is the screening of different possibilities for the construction of yachts with respect to their potential for bionic developments. Components, which can be produced cost-efficiently with a high reliability in fabrication, will be identified as well as complex constructions with the potential to increase a yachts' performance and reduce weight.

The project is funded by EFRE and the Federal State Bremen.

- > Innovative yacht-construction
- > Newly developed construction methods
- > Structural optimization
- > Enlargement of effective sail area through relocation of weight into the keel bomb



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Dr. Christian Hamm  
+49 (0)471 4831 1832  
www.elise3d.com

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