# Further Step of Green Ship

Further innovative progress is demanded for hull form design and ship performance design in the midst of rising energy saving requests among maritime industries in terms of economics and environmental. I, Fluid Techno Co.,Ltd.,Challenges continuously in order to inherit shipbuilding techniques on top level in the world to coming generations with contributing to green ships by knowledges backed by enormous researches and investigations and technological capacities acquired by years of experiences.

### Fluid Techno Co., Ltd.

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## Why We Can Work for Customers

#### **Know-How**

Accumulation of experiences in addition to basic knowledge and techniques is necessary for design of ship hull form and ship performance. Effectively using techniques of hydrodynamics focused on ship hull form under water,

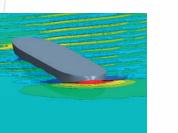
we can cooperate with every customer in neutral position.

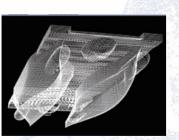
#### Technical Skill

We can cover in the wide range of ship hull form design, sea condition analysis, and service records analysis and sea trial measurements and work with our technical skills. Further, our products such as measuring system tools and energy saving devices are produced.

#### **Collaborations**

We take part in international conferences and fairs to acquire the latest information. Collaborating with international and domestic universities, research institutes and companies, we are keep improving our technical skill.











LISO/IEC 27001 CONTINUENCE OF THE CAROUNDARY Cartified on information security management system. Certified on designing and manufacturing energy saving devices for ships and model ships for model tests.





FLUID

**Company Profile** 

TECHNO

CO., LTD.

*iFTC* FLUID TECHNO Co., Ltd.

# REENC

Our company strives to contribute to the society in field of hydrodynamics for ship services, shipbuilding and offshore. Especially, our key business is to design ship hull form under the water and in the open air including propellers, rudders and energy saving devices from the point of view of hydrodynamics. Since it is essential to understand flow around ship hull, we aim to satisfy customer needs with our rich experiences and the newest challenges.

Nowadays, eco-friendly ships increasingly are required in terms of global environmental protection.

For this purpose, it is not too much to say that ship hull form design occupies the most important part. This is the specialized field of our company. We would like to assist customers in the fields of eco-friendly ship development and evaluation of ship service records required in ocean and maritime transportation for efficient operation and to support model test for eco-friendly hull form development.

Fluid Techno Co., Ltd. Tamashima Masahiro, Presiden



### **Our Business**

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With hydrodynamic technologies specialized for designing ship hull form under water, not only we support ship design, development and research but also strive to improve performance of existing ships.



#### **Development and** Sales of Energy **Saving Devices**

- Eco-Stator
- Rudder Bulb
- Others

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### Program **Development and Sales**

- "Initial Lines Generator" for ship hull form development and performance calculation
- "Ship Performance Tester & Analyzer"-Sea trial measurement and analysis
- Analysis and evaluation of ship service records
- "Oceanus"- Real time measuring system for encountering ocean waves

## **Energy Saving Device**

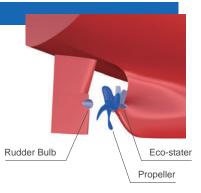
#### Eco-Stator

Eco-stator is an energy saving device which enhances ship propulsive performance with minimum main engine output. Eco-stator is a pre-swirl type device which has four or five stator fins fixed in front of propeller and which can save 5-6% energy in navigation of either newbuilding or retrofit. Also, hull vibration is reduced by rectification efficiency.



#### Rudder Bulb

Rudder bulb is a cylindrical bulb installed on the front side of rudder. With rectifying flow behind propeller and improving thrust performance, fuel oil consumption can be reduced. Rudder bulb manufacturing and installing to rudder are simple and can



#### Ship Hull Form Design and Development Tool

#### Initial Lines Gene(ILG)

Initial Lines Generator is a program specialized for supporting ship hull form initial design. Even beginners can generate initial hull form easily. Several designers can work simultaneously when installed with sharing settings on LAN network. NAPA data can be imported and exported.

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6	Offset Derivation		0 4	Upper Deck and Structure		
6	Lines and Hydro		0	3	D View	

#### Sea Trial Measurement Tool

#### Ship Performance Tester & Analyzer

Ship Performance Tester & Analyzer measures ship location and motion in service utilizing satellite compass and DGPS. This is a measurement tool and analyzer of ship performance which can make ship performance report automatically. Workload for measurement can be reduced by using this tool. Besides, it is applicable to verify efficiency of energy saving devices.



#### Hull Form Design **Development and Researches**

- Initial performance prediction, ship hull form design and lines development
- Evaluation of hull form and ship
- performance by CFD(Computational Fluid Dynamics)
- Consultancy work on ship hull form design

# **Design and Manufacture of**

- Model Ship for Tank Test
- For self-propulsion test(L=1m-7m)
- For maneuvering test and ship motion test in waves(L=2m-3m)
- Other models for tank tests

### **Encountering Sea Condition Analyzer**

#### Real Time Detection System for Encountering Ocean Waves

This is a system to realize green ship by safe and efficient service and fuel consumption saving, which can be applied to various size of ships. Our unique program grasps ship hull conditions in real time during navigation. The system analyzes and predicts encountering ocean waves in precise with finding position of center of gravity.

#### Model Ship Manufacturing

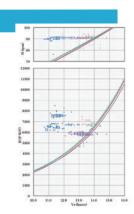
#### Model Manufacturing

In order to predict performance of designed ship, we manufacture model ships and carry out accurate model tests in addition to utilization of CFD Propeller and rudders are modeled by 3D printer with checking surface geometry.



#### **Operation Analysis Tool**

This tool can analyze operating performance and hull surface condition in real time during service. Using our unique program, service record is analyzed comprehensively in addition to such as Ablog data and various operating data. It contributes to reduce greenhouse gas by more efficient and safer service.



# **Product Lines**

We are working on development of new products so that our accumulated know-how and technologies are utilized at shipbuilding and maritime filed all over the world.





