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VISIT US

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The Fraunhofer Transport Alliance bundles the traffic-related competencies of its member institutes and works in individual transport sectors in different working groups.

The aim of the working group Waterborne is to support shipping companies, shipyards, ports as well as logistics service providers and the maritime supply industry in the fulfillment of their tasks and to develop tailor-made solutions for customers. Fraunhofer Waterborne offers the following competencies: ship operation, shipbuilding, maritime technology as well as maritime logistics, - politics and - communication.

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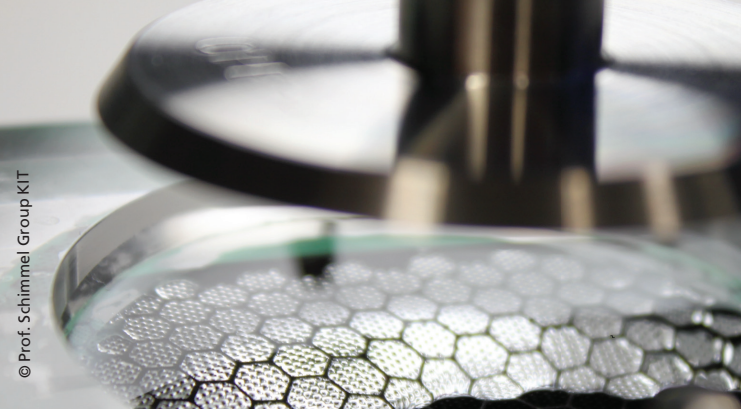
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FRAUNHOFER WATERBORNE AT THE SMM 2018





Fraunhofer IGD: Maritime 4.0 -Exploiting the digital ship

3D design models contain all information about geometry, materials and function. Fraunhofer IGD's secure and scalable WebVis/ instant3Dhub platform offers efficient, web-based access to this data. Using our platform, department and task-specific web applications can be realized that link the 3D model with data from purchasing, work planning or quality assurance. Tailor-made solutions enable customers to digitize their business processes across a broad range of end devices: from desktop PCs over smartphones to augmented reality glasses.

Fraunhofer IGP: Innovative production technologies

The objective of our research and development activities is to create integrated solutions which enable our customers to manufacture cost-efficient and quality-oriented individual maritime products. New robotic concepts with intelligent sensor guidance and image processing as well as innovative technologies for well-organized material and information flow processes are the focus of our activities. Typical tasks involve a holistic view of digitization, automation and the development of new manufacturing technologies in context of Industry 4.0.

Fraunhofer FHR: Novel Maritime Rescue Radar

Small objects floating on the surface of the sea, such as sailors, surfers or life rafts, are difficult or even impossible to detect by conventional ship navigation radars when wave heights increase. Against this background, a publicly funded joint project

investigates a novel sea rescue system. The basis is a harmonic radar, which transmits a typical navigation radar frequency and evaluates echo signals at twice the frequency. This is achieved by using small transponders which are integrated into rescue equipment and cause the frequency conversion.

Fraunhofer CML: Maritime Innovations

The CML introduces AIRCOAT - the development of a self-adhesive technical film for ship hulls. AIRCOAT mimics a bionic effect. Through this an air layer is permanently bonded to the surface and reduces significantly the frictional resistance in the water. Nameable energy savings and reduced hull fouling are expected.

In addition, SCEDAS, a reliable software solution for optimized and requirements-based crew planning, is presented. SCEDAS enables shipping companies to ensure the right staffing of all positions at any time of a ship's journey.

Fraunhofer IDMT: Improved Maritime Communication

Miscommunication is a major trigger for maritime incidents. To counter language barriers in multilingual crews, the IMO Standard Marine Communication Phrases (SMCP) have been introduced. Fraunhofer IDMT presents a dialogue-oriented training system for SMCP based on automatic speech recognition. Research objective is to further improve ship-to-ship and ship-to-shore communication by integrating speech recognition in communication systems.

Fraunhofer IFAM: Testing facilities and infrastructure

Along the development chain from static calculations and early simulations up to prototype usage, testing and proving of new materials and technologies are the key factors for successful innovations. Fraunhofer IFAM offers testing facilities from pressure chambers and wave pools up to field trials under real, harsh conditions in the Baltic and the North Sea. These facilities can be used for material testing under offshore conditions, long term weathering, under water field trials and pressure testing of deep sea devices and components.

Fraunhofer LBF: Mechanical Simulation Toolbox

The Torsional Vibration Actuator used in controlled mode reduces torsional vibrations in power-trains. Alternatively it can also induce torsional vibrations in rotational systems if needed. Areas of application include, for example, main and ancillary units of power-trains or test rigs for power-trains. The Toolbox for Vibration Reduction developed at Fraunhofer LBF uses analytical and numerical methods to compare different concepts for vibration reduction. The toolbox is especially beneficial for the design process.