

PRESS RELEASE

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SMM 2018: Hull coatings, radar, and robots – Fraunhofer-Gesellschaft to present maritime research highlights at SMM in Hamburg from 4 to 7 September

Biomimetic hull coatings, radar detection of shipwreck victims, innovative robots with intelligent sensor guidance for shipbuilding – just a few of the many developments that Fraunhofer scientists will be presenting at the Fraunhofer joint booth in Hall B6, Booth 319.

Fraunhofer institutes not only perform research on the efficiency and environmental impact of ocean shipping, they also take an integrated perspective on digitization, automation, and development of new manufacturing technologies in the context of Industrie 4.0. Seven Fraunhofer research institutions have united to form the Waterborne Group. At SMM, they will present tailor-made solutions for shipping companies, shipyards, ports, logistics service providers, and the maritime supply industry.

The Fraunhofer Center for Maritime Logistics and Services CML in Hamburg is working on a novel **hull coating with biomimetic properties**. This coating was inspired by a floating fern, which will be on display in display pools, along with some early research samples. The CML will also be presenting the latest developments from its research into autonomous shipping.

The Fraunhofer Institute for Computer Graphics Research IGD conducts research in Rostock on the **use of visual computing** in the shipping industry. This year, Fraunhofer IGD will be presenting data glasses that enable users to access a wide range of information in virtual form, for example in the field of design. Visitors to the booth can test the “HoloLens” in action.

the Fraunhofer Institute for Digital Media Technology IDMT in Oldenburg offers still more hands-on experience. Many dangerous maritime situations, including ship disasters and other incidents, can be attributed to unclear communication, which has led Fraunhofer IDMT to develop a training platform. Researchers have transformed the International Maritime Organization “Standard Marine Communication Phrases” into a **dialogue-oriented training tool**, which can also be used online.

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM from Bremen will be demonstrating its research on **novel surfaces for ship hulls** with the aid of a model ship. In addition, the researchers will be presenting information

Editorial Notes

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about their test locations on Helgoland and Sylt. these sites can be used , for instance, to carry out scientific research into corrosion and foul protection under genuine environmental conditions in the North and Baltic Seas.

Locating victims is the primary objective in rescuing shipwreck survivors in the water. However, the higher the waves, the more difficult seeing victims becomes. The Fraunhofer Institute for High-Frequency Physics and Radar Techniques FHR in Wachtberg contributes to a research consortium that has developed a **novel solution to detect persons or other objects in the water**. The radar exhibited at SMM captures frequency-modulated signals generated by a novel transponder; it can identify a person equipped with the technology, even in a crowd.

The Fraunhofer Research Institution for Large Structures in Production Engineering IGP from Rostock will be presenting its latest innovations in manufacturing. No less than two **robots will be demonstrating the latest technology in maritime production**, employing intelligent sensor guidance and innovative image processing. The robots' autonomous programming sets a new milestone towards commercial viability.

The Fraunhofer Institute for Structural Durability and System Reliability LBF in Darmstadt will be presenting **innovative elements to reduce vibrations** at sea. Vibrations and oscillations in the drive trains of main and auxiliary units, in particular, can lead to adverse secondary effects on board, such as increased wear and noise emissions, which are associated with a shortening of expected service life. Fraunhofer LBF has developed an analytic, computational toolbox for optimizing and proposing solutions.

New this year

Fraunhofer researchers will be presenting a selection of innovations in short lectures and demonstrations at 11 a.m. and 3 p.m. each day .

The Fraunhofer Forum Waterborne will take place on 5 September 2018 at SMM. The event this year addresses the topic of "Shipping Under Extreme Conditions".

More information can be found at <https://www.cml.fraunhofer.de/>.

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The digital ship: 3D design models contain all information about geometry, materials and function.
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The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 25,000, who work with an annual research budget totaling 2.3 billion euros. Of this sum, almost 2 billion euros is generated through contract research. Around 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.