SINTEF

SINTEF Materials and Chemistry

Environmental Technology

- Oil spill research
- Fate and effects of pollutants
- Fluid and surface chemistry
- Monitoring and Modelling
- Clean water research
- Laboratory services

Technology for a better society

Oil spill research

SINTEF has developed solution-oriented competence within oil spill contingency which is nationally and international demanded. We are one of the worlds largest independent research organisations within oil spill contingency and offers expertise in many areas, including:

- Oil weathering studies (lab/basin/field experiments)
- Oil slick characterisation
- Oil spill response technology
- Surface chemistry
- Fluid chemistry
- Oil spill contingency and response analyses - NEBA
- Oil spill contingency in Arctic areas
- Sub-sea releases

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Fate and effects of pollutants

Environmental fate and effects studies of pollutants require monitoring and characterization of the pollutants in the different environmental compartments. Research and detailed knowledge of the biological effects and fate of pollutants is important for an assessment of suitable response actions.

Competence:

- Experimental biology and ecotoxicology
- Ecotoxicity and biodegradation
- Metabolomics for studying responses to pollutants in organisms
- Fate and effects of pollutants
- Advanced environmental sample extraction and preparation techniques
- Analysis of environmental pollutants
- Development of predictive environmental models for risk assessment

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Fluid and surface chemistry

To understand phenomena related to multiphase flow, oil-water separation, enhanced oil recovery (EOR), environmental weathering, biodegradation, and environmental effects of oil, understanding the relationship between chemical composition and physical properties is key.

Competence:

- Multiphase flow
- State of the art analytical chemistry facilities
- Multivariate analysis and advanced data mining/programming coupled to a high level of knowledge on oil.

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Monitoring and Modelling

Numerical modelling of environmental processes supports objective, science-based management of natural resources as well as recreational and industrial activities. SINTEF is in the forefront in developing models addressing effects and risks associated with operational and accidental discharges to the environment.

Competence:

- Development of decision support tools for marine environmental management
- Application of numerical tools to supply quantitative solutions to complex environmental challenges
- Collection and analysis of metocean data in support of environmental assessments

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Clean water research

Based on multi-disciplinary terms of scientists, engineering and business developers, we provide new and improved insight into water related challenges. Our projects cover all aspects of the water chain, from water sourcing to final treatment for reuse and discharges, and potentially extraction of valuables in the reject stream.

Competence:

- Water sourcing
- Monitoring, modelling and testing
- Technology evaluation and implementation
- Monitoring, integrity and management
- Water treatment
- Wastewater treatment, recycling and discharges
- Extraction of potential values

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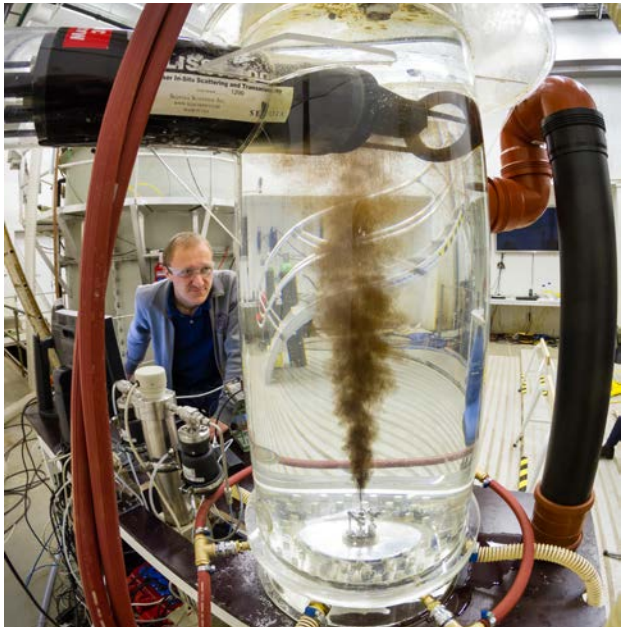
Environmental laboratories

Environmental laboratories in SINTEF Materials and Chemistry are established in order to support our research activities. Our emphasis is on developing experimental systems that simulates natural processes and also mimic the fate, behavior and effects of pollutants in the recipient.

At SINTEF Sealab we offer:

- Cold climate laboratories with basin facilities
- Ecotoxicological laboratories
- Oil spill research facilities



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SINTEF is the largest independent research organisation in Scandinavia. We create value and innovation through knowledge generation and development of technological solutions that are brought into practical use. We conduct contract R&D as partner for the private and public sectors.

SINTEF Materials and Chemistry is a contract-based institute offering high levels of expertise in the fields of materials technology, advanced materials and nanotechnology, applied chemistry and biotechnology. We work closely with global players in the oil and gas, green energy and process industry sectors.