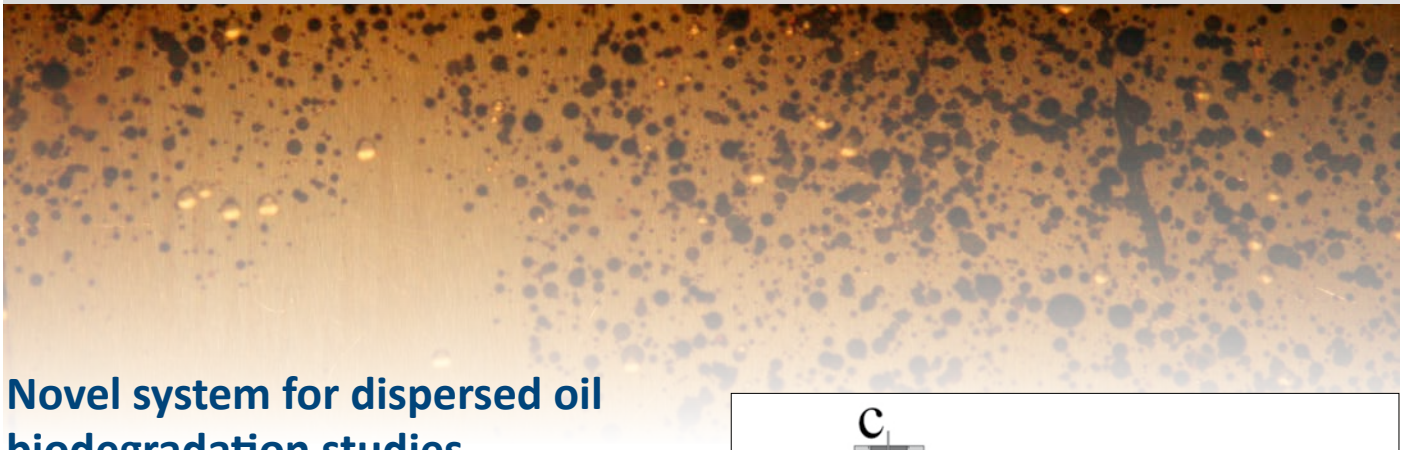
FACTS

SINTEF Materials and Chemistry

Dispersed oil biodegradation studies

March 2015

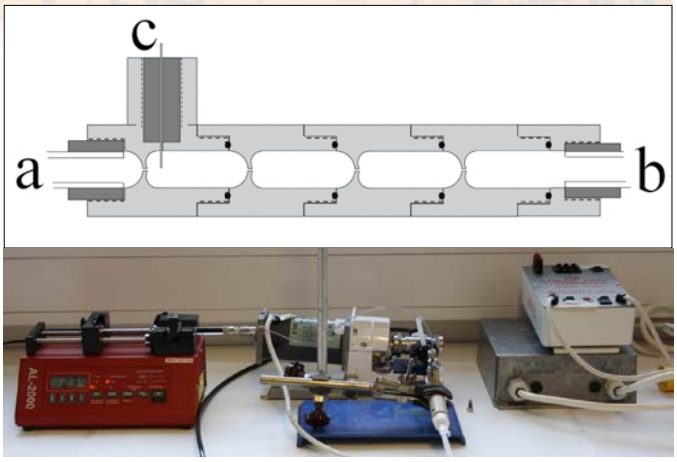


Novel system for dispersed oil biodegradation studies

Oil spills to the marine environment

- Biodegradation studies of naturally and chemically dispersed oil
- Determination of oil compound removal and oil-degrading microbial communities
- Studying biodegradation of oils and dispersants at different environmental conditions
- Improving biodegradation data for fate and exposure models (e.g. the OSCAR model)

Slowly rotating carousel system for maintaining oil droplet dispersions over time
By slow rotation oil droplet settling is reduced during biodegradation periods



Oil dispersion generator for preparing small oil droplet dispersions
Seawater (a) and oil (c) is pumped through a high turbulence nozzle system to generate small droplet oil dispersions at defined oil concentrations (b)

References:

Nordtug, T., Olsen, A. J., Altin, D., Meier, S., Overrein, I., Hansen, B. H., Johansen, Ø., 2011. Method for generating parameterized ecotoxicity data of dispersed oil for use in environmental modelling. Mar. Poll Bull. 62, 2106-2113.

Brakstad, O.G., Nordtug, T., Throne-Holst, M., 2015. Biodegradation of dispersed Macondo oil in seawater at low temperature and different oil droplet sizes. Mar. Poll. Bull. In Press.

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