Weekly CEAFM Seminar: Spring 2015

JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Date: **Thursday, March 19, 2015** (Special Date)

Time: 2:00 PM (Special Time)

Location: Latrobe Hall # 106 (Special Location)

Speaker: **Dr. Per Johan Brandvik** (SINTEF Materials & Chemistry)

Title: ***"Initial Droplet Formation of Subsea Releases of Oil & Gas. Laboratory Studies to Study the Effect of Oil Properties, Release Conditions and Injection of Dispersants."***

Abstract

SINTEF has for the last four years studied oil droplets formation for subsea releases at our TowerBasin in Trondheim, The basin is 6 meter high, 3 meter wide and holds 40 000 liters of natural sea water. Experiments have been performed to simulate subsea releases of both oil & gas focusing on basic issues like droplet formation in turbulent jets, influence of dispersant injection techniques, different dispersant products and oil properties. SINTEF also operate a much smaller basin holding only 100 liters (SINTEF MiniTower). The main advantage with this smaller facility is the continuous flow trough of natural sea water, which allows us to operate in a continuous mode. We also operate an Inverted cone system designed to simulate individual droplets rising through stagnant water. This system is for example used to study and quantify maximum stable droplet sizes and tip streaming as a function of oil properties and dispersant injection. The presentation will give examples from using these facilities. These activities have been performed in several projects funded by both individual oil companies, the American Petroleum Institute and GOMRI (DROPPS).