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Authors: Valérie Molinier, Erwan Le Goué, Marianna Rondón-González, Nicolas Passade-Boupat, Maurice Bourrel



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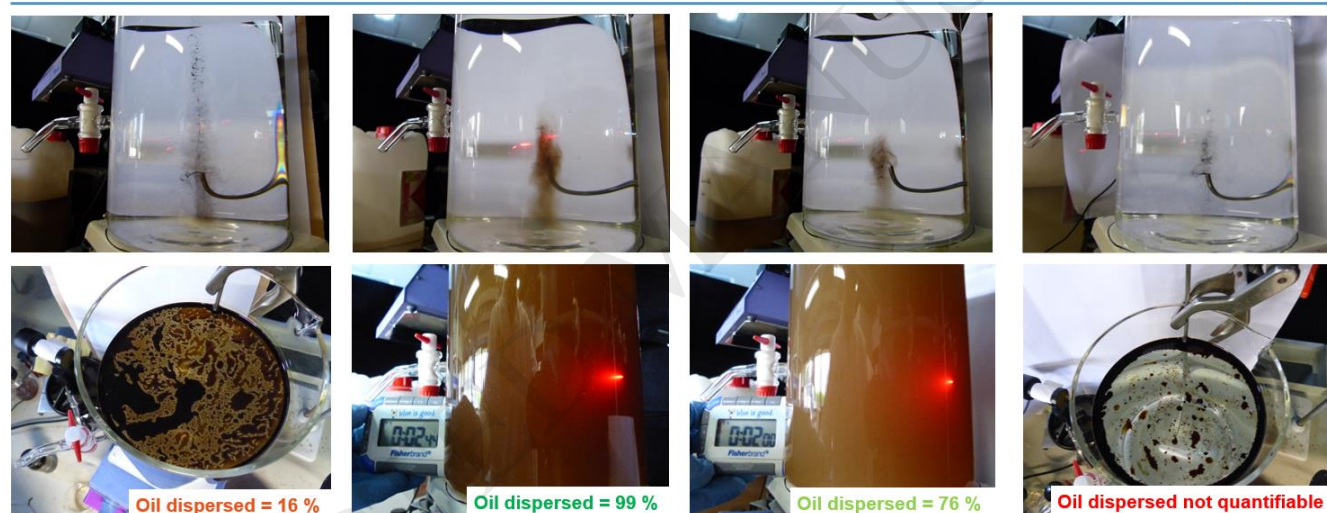
# Optimization of Chemical Dispersants Effectiveness in case of Subsurface Oil Spill

Valérie Molinier, Erwan Le Goué, Marianna Rondón-González, Nicolas Passade-Boupat and Maurice Bourrel

Total Exploration Production, Pôle d'Etudes et de Recherche de Lacq, B.P. 47, 64170 Lacq, France,

## GRAPHICAL ABSTRACT

Water salinity



**ABSTRACT:** oil spill dispersants used in the case of subsea release exhibit different efficiencies depending on the nature of oil and the salinity of water. This variability can be rationalized by considering the location of the optimal formulation of the dispersant/oil/water system, in the light of the concepts used for optimizing surfactants blends for other applications, in particular eor (enhanced oil recovery). In practice, the number of commercially-available dispersants is constrained by the thorough studies necessary for their registration, in particular as regards to their fate in the environment. Therefore a fair ability to disperse a wide range of potential spills is generally looked for. We show that the optimal formulation approach can be used to adapt the composition of the surfactant blend – hydrophilic and hydrophobic sorbitan esters and sodium dioctylsulfosuccinate - for the dispersion of different crude oils in waters of given salinities, thus allowing a significant increase in dispersion efficiency with a minimal variation of the overall product composition

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