

Effect of Highly Pressurized Dispersion Arc Nozzle on Breakup of Oil Leakage in Offshore

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Abstract : The most important problem occurs on oil spills in sea water is to reduce the oil spills size. This study deals with the development of high pressurized nozzle using dispersion method for oil leakage in offshore. 3D numerical simulation results were obtained using ANSYS Fluent 13.0 code and correlate with the experimental data for validation. This paper studies the contribution of the process on flow speed and pressure of the flow from two different geometrical designs of nozzles and to generate a spray pattern suitable for dispersant application. Factor of size distribution of droplets generated by the nozzle is calculated using pressures ranging from 2 to 6 bars. Results obtain from both analyses shows a significant spray pattern and flow distribution as well as distance. Results also show a significant contribution on the effect of oil leakage in terms of the diameter of the oil spills break up.

Keywords : arc nozzle, CFD simulation, droplets, oil spills

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