

ABSTRACT

Proposed is a method of emulsifying fuel oil and a desulfurization agent. The method includes (a) a step of adding a desulfurization agent to fuel oil for line mixing thereof, (b) a step of generating droplets in the resulting mixture of step (a), (c) a step of causing the resulting mixture of step (b) to pass through a magnetic field so that the mixture can be magnetized, (d) a step of subjecting the resulting mixture of step (c) to vortex mixing, and (e) a step of causing collision of the resulting mixture of step (d). The method uses fuel oil as a continuous phase and a water-based desulfurization agent as a disperse phase and emulsifies the desulfurization agent in the fuel oil through water-in-oil (W/o) emulsification so that the desulfurization agent can be stably dispersed in the fuel oil. Since the fuel oil and the desulfurization agent are burned together during combustion, sulfur oxides that may occur during the combustion are removed, whereby sulfur oxide emissions are reduced.

Fig 1 for publication