# *ABSTRACT*

*Distribution activities are an important part and very considered in the world of logistics because distribution is one of the key drivers of profits earned by companies. One that is related to distribution is transportation. Transportation refers to moving products from one location to another where the product moves from the beginning of the supply chain to consumers where this transportation will incur costs and is one of the costs that affect the price of a product. This research aims to schedule ship transportation from 3 production ports to 6 consumption ports with a heterogeneous fleet of ships in order to minimize the total transportation costs in the cement industry companies. Maritime Inventory Routing Problem (MIRP) is a problem of ship scheduling which is not only related to the distribution of products from production ports to consumption ports, it also manages the inventory at these ports and usually used for bulk industrial products. The method used in this research is MIRP with Mixed-Integer Linear Programming (MILP) approach where this method can minimize the total transportation costs. The results show that the method used can reduce the total waiting time so that the total transportation costs are also reduced.*

*Keywords: Maritime Inventory Routing Problem, Heterogeneous Fleet, Mixed Integer Linear Programming, Transportation, Scheduling, Cement Distribution*