

ABSTRACT

Gas leakage is one of the problems that often arises in several industrial fields, this makes several accidents that occur due to the presence of gas that cannot be detected by naked eye. The development of mobile sensors is one way to overcome losses both materially and non-materially. LiDAR sensors and gas sensors are types of sensors that can be used to detect gas.

In this study, discussing how to detect gas leaks in a room. Assisted by the SLAM method as navigation and a combination of source-seeking and active-sensing localization methods as identifiers of leak points, the mobile sensor identifies points of leakage which are on the normal boundary. After finalizing the gas leak point, the mobile sensor will provide feedback to the user.

By utilizing SLAM, the mobile sensor identifies points that indicate a gas leak and identifies the value of the leak at that point. With the method of utilizing a gas sensor installed on the mobile sensor the level of accuracy obtained reaches > 85%.

Keywords: *SLAM, Mobile Sensor, source-seeking, and active-sensing localization.*