

## **An Introductory Study on Optimization Algorithm for Movable Sensor Network-Based Odor Source Localization**

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**Abstract :** In this paper, the method of optimization algorithm for sensor network comprised of movable sensor nodes which can be used for odor source localization was proposed. A sensor node is composed of an odor sensor, an anemometer, and a wireless communication module. The odor intensity measured from the sensor nodes are sent to the processor to perform the localization based on optimization algorithm by which the odor source localization map is obtained as a result. The map can represent the exact position of the odor source or show the direction toward it remotely. The proposed method was experimentally validated by creating the odor source localization map using three, four, and five sensor nodes in which the accuracy to predict the position of the odor source can be observed.

**Keywords :** odor sensor, odor source localization, optimization, sensor network

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