

(54) Title of the invention : REAL TIME AIR QUALITY MONITORING AND PREDICTION SYSTEM USING IOT SENSING NETWORK

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(57) Abstract :

Air pollution and its harm to human health has become a serious problem in many cities around the world. In recent years, research interests in measuring and predicting the quality of air around people has spiked. Since the Internet of Things (IoT) has been widely used in different domains to improve the quality life for people by connecting multiple sensors in different places, it also makes the air pollution monitoring more easier than before. Traditional way of using fixed sensors cannot effectively provide a comprehensive view of air pollution in people’s immediate surroundings, since the closest sensors can be possibly miles away. Our research focuses on modeling the air quality pattern in a given region by adopting both fixed and moving IoT sensors, which are placed on vehicles patrolling around the region. With our approach, a full spectrum of how air quality varies in nearby regions can be analyzed. We demonstrate the feasibility of our approach in effectively measuring and predicting air quality using different machine learning algorithms with real world data. Our evaluation shows a promising result for effective air quality monitoring and prediction for a smart city application.

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