

## **Assessing short term air quality trend in Malaysia based on air pollution index (API)**

### **ABSTRACT**

. Air Pollution Index (API) is used in Malaysia to determine the daily air quality status, which is calculated based on the daily concentrations of particulate matter (PM<sub>10</sub>), ground-level ozone (O<sub>3</sub>), carbon monoxide (CO), sulphur dioxide (SO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>). This study presents short-term air quality trends based on API from the 52 air quality monitoring stations nationwide between 2010 and 2016. The air quality data and meteorological conditions were obtained from the Department of Environment and used for the API calculation. The API value is classified into six categories, namely: Good (0-50), Moderate (51-100), Unhealthy (101-200), Very Unhealthy (201-300), Hazardous (301-500), and Emergency (above 500). The coefficient of variation (CV) and Mann-Kendall trend test (MK) were used to assess the API variation and trend in each air quality monitoring station. Between the study periods, the API values were largely varied. Observation at 32 air quality monitoring stations have shown significant but small increasing trends, while 12 stations showed significant decreasing trends, and the remaining 8 stations showed no significant trends. The frequency of exceedance (API>50) was used to assess the percentages of unhealthy days. The analysis has found that air quality in Klang Valley was experiencing the highest number of unhealthy days, while the two Malaysian states in Borneo (Sabah and Sarawak) to be relatively less polluted.