

# **GIS Based Carbon Dioxide Concentration Research in ITU Campus, Istanbul –Turkey**

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## **SUMMARY**

Clean air and clean water is a basic requirement of life. Opposite to water, getting fresh air in the developed areas is not possible especially in the megacities like Istanbul. The quality of air inside buildings where people spend a large part of their life is an essential component for health and well-being. Hazardous substances emitted from buildings and vehicles like Carbon monoxide and Carbon dioxide may lead to a broad range of health problems. Thus, measuring and mapping of these parameters are extremely important to get precautions to increase their life quality. In this study, Istanbul Technical University campus was selected as the study area. It is located near by the heart of the commercial area with more than 25K people including students and personal. At the 80's, the neighborhood of the campus was totally covered with the forestry areas and small buildings which are turned to skyscraper later on. The area now is housing many national and international companies in these huge skyscrapers at the northern part adjacent with a road of high traffic intensity. The other parts of the campus are either surrounded by squatter's house or high level traffic roads. As the indoor air quality is directly dependent to outdoor gas component, the study's aim has been focused to find out the distribution of Carbon monoxide and Carbon dioxide levels in and around the campus. GIS based distribution maps were realized using daily measured parameters in and around the campus on the approximately 20 stations. GIS supported spatial analyses have been carried out to display the level of the parameters which are over the acceptable level for the human health. In the study also comparisons with other parts of Istanbul have been presented.