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Proposal and application of a new method to evaluate the odour impact index for high-impact activities.

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Air quality has already an important role in the agenda of the worldwide organisations and government due to the presence of some compounds that could impact the ecosystem as well as the human health. Another interesting aspect related to the atmospheric quality is the odour nuisance. Indeed, there is the possibility that, even if the single compound does not exceed the limit imposed, the odour creates malaise among the population. To quantify the odour concentration from sources or near the receptor, it is common to use the dynamic olfactometry system for the first case and the field inspection for the second. However, both of these techniques require competent laboratories, long time analysis and cannot be used to predict the impact of future source. Therefore, since odour is a molecule characteristic, the chemical conversion it also used not only to evaluate the local impact but also to estimate potential impact from future facilities. This work presents a comparison of these conversion methods applied to a specific case study. In particular, the assessment of air quality is carried out on a highly industrialised area and in the near municipalities by passive sampler analysers. In addition, based on the well-known conversion and in consideration of the hedonic tone of single compound, it is proposed a new factor to evaluate the odour impact. The comparison between the official method and the new one proposed shows that the latter seams to assess better the odour impact perceived by the research group during the local inspection.

Biography

Roberta Lotito is a ph.D. student at University of Campania Luigi Vanvitelli in Environmenatl, Design and Innovation. Her thesis focuses on the integration of the odour impact evaluation in the envirmontal impact assessment procedures. She spent sixth months as visiting ph.D. student at Institue for Chemical and Fuels from Alternative Resource (ICFAR) of the Western Ontario University (Canada – 2017/2018) where she studied the local emission of the Landfill by using inverse modelling methodology. She won the “Best Italian Paper” award during the “Sardinia_2017 symposium” presenting part of her thesis work.

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