



ORAL PRESENTATION ABSTRACTS

Topic IV. Green Chemistry Education

Oral Presentation Abstracts

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Immobilization of Cadmium in Soil Using Olivine

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Cadmium has become a major heavy metal pollutant in soil. Due to its toxicity and carcinogenicity, contamination of the available form of cadmium in environment is an ecological and public health concern. In this study, we evaluated the effectiveness of mineral olivine, a magnesium iron silicate mineral, on cadmium immobilization in contaminated soil. The results showed that addition of 0.5% w/w olivine into the agricultural soil contaminated with 18 mg cadmium/kg could reduce the amount of cadmium eluted to water phase (from

0.32 ± 0.02 mg/L to below detection limit of 5.2 µg/L). In addition, soil pH was increased from 4.25 in the control to 7.14 in treatment group. This suggests that addition of olivine in soil could reduce the available form of cadmium and improve soil pH. Olivine is; thus, an effective soil improving material to reduce spreading of cadmium from soil to other compartments including water and biota.

Keywords: Heavy metals; Cadmium; Olivine; Immobilization; Magnesium Iron Silicate

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Study of Noise Level at Three Types of Cities in Bangladesh Subjected to Background Noise

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As per Environmental Conservation Law 1997, noise level is classified into area of activity as well as [silent, residential, mixed, commercial and industrial zones] and also for day-night of any urban areas in Bangladesh. Again, the cities in Bangladesh are divided into divisional, district and Upazila town, according to population density and citizen facilities. Noise is an unwanted event and the result is an increased threat of noise induced hearing loss, annoyance and other adverse effects on the health and well being of the population. According to dependence on time, noise might be classified as steady, non-steady, fluctuating, intermittent impulsive, quasi-steady and ambient. Sound has been measured at divisional city (Dhaka), district city (Comilla) and upazila city (Kasba) by noise-meter (USA). It has been observed that, both of types of noise levels are observed at divisional, district and upazila level cities. Variation of noises are non-steady and fluctuating are found at all above areas, but noise level of division city is more (> 60 dBA), comparatively low at district and lower noise is found at upazila city (< 60 dBA) in day time. It specifies sensitive localities of the three cities of Bangladesh where public health is liable to be affected by noise pollution.

Keyword: Noise, decibel, non-steady noise, zones, Bangladesh