Preface — Recent advances in cleanup of contaminated sites

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This special issue titled “Recent Advances in CleanUp of Contaminated Sites” (SI CleanUp Korea 2019) is a collection of selected papers from participants that attended “CleanUp Korea 2019”. It was held in Seoul, Republic of Korea, 5–6 December 2019, to celebrate ‘World Soil Day 2019’ with CRC CARE (Australia).

The management of contaminated sites (including site characterization, remedial investigation, remedial action, and post-management activities) is an area of growing concern. Due to rapid industrialization, soil and groundwater are increasingly threatened in the world. Since the Soil Environment Conservation Act took effect in 1995, the Korea Ministry of Environment has made all-out efforts to conserve the soil environment. Numerous remediation techniques have been applied to remove contaminants and to restore the soils, but there remains a gap in the comprehensive understanding of the efficacy of techniques and practices in the field.

This special issue focused on remediation activities and the management of contaminated sites. In total, four articles are included in this special issue. Ahn et al. (2021) reported on soil washing and risk assessment of fluoride-contaminated soils. Kim et al. (2021) suggested an electrode design and configuration in the field of electrokinetic remediation to treat metal-contaminated soil. In Korea, the

levels of metals and fluorine in soil are regulated as pseudo-total content by the law; thus, soil washing and electrokinetic remediation are popular (Min et al. 2019). Hong et al. (2021) carried out a site-specific ecological risk assessment of heavy metal-contaminated soil. Chung et al. (2021) proposed a method of microbially induced calcite precipitation to prevent soil loss by rainfall as a way for sustainable management of contaminated sites. The findings reported in this special issue have added new insights into the remediation and management of contaminated sites in Korea.

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References

- Ahn Y, Pandi K, Cho DW, Choi J (2021) Feasibility of soil washing agents to remove fluoride and risk assessment of fluoride-contaminated soils. *J Soils Sediments* 1–8. <https://doi.org/10.1007/s11368-020-02808-8>
- Chung H, Kim SH, Nam K (2021) Application of microbially induced calcite precipitation to prevent soil loss by rainfall: effect of particle size and organic matter content. *J Soils Sediments* 1–11. <https://doi.org/10.1007/s11368-020-02757-2>
- Hong YK, Yoon DH, Kim JW, Chae MJ, Ko BK, Kim SC (2021) Ecological risk assessment of heavy metal-contaminated soil using the triad approach. *J Soils Sediments* 1–12. <https://doi.org/10.1007/s11368-020-02750-9>
- Kim SO, Jeong JY, Lee WC, Yun ST, Jo HY (2021) Electrokinetic remediation of heavy metal-contaminated soils: performance comparison between one- and two-dimensional electrode configurations. *J Soils Sediments* 1–15. <https://doi.org/10.1007/s11368-020-02803-z>
- Min SJ, Kim HB, Kim SH, Baek K (2019) Evaluation on bioaccessibility of arsenic in the arsenic-contaminated soil. *Korean J Chem Eng* 36(11):1780–1784. <https://doi.org/10.1007/s11814-019-0383-y>

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