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Energy saving remediation of lubricating oil-contaminated soil by microwave thermal desorption technology**Taehoon Koh, Donggeun Lee and Hanju Yoo**

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Thermal treatment is one of the effective methods to rapidly treat the oil-contaminated soil. However this method costs much due to the high energy consumption comparing with other conventional treatments. Microwave is recently regarded as an energy source to enhance the energy efficiency for the thermal treatment of the oil-contaminated soil. In this study, the feasibility of microwave thermal desorption technology was investigated to treat the polluted lubricating oil-contaminated soil. Microwave thermal desorption technology has been recently developed in Korea as a technically-effective as well as cost-effective technology for the remediation of lubricating oil-polluted soil. This technology uses microwave and microwave absorber as an energy source to enhance the energy efficiency for the thermal treatment of the lubricating oil-contaminated soil. Based on a series of field test results from this study, it was found that microwave thermal desorption technology can substantially reduce the remediation cost of oil-contaminated soil with low electric power consumption and contribute to low CO₂ emission.

Biography

Taehoon Koh has completed his PhD from Purdue University, USA. He is a Civil Engineer and Chief Researcher studying new construction materials and methods at Korea Railroad Research Institute. He has developed eco-friendly construction materials (concrete), fast construction technology for concrete structure and low-carbon remediation technology for polluted geotechnical materials. He has published more than 90 technical papers, registered over 20 patents and received paper awards and research awards.

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