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**A novel approach for simultaneous improvement of dewaterability, post-digestion liquor properties and toluene removal from anaerobically digested sludge**

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**Abstract**

Anaerobically digested sludge (ADS) is a major product of anaerobic digestion a widely used and economically viable microbial process used in wastewater treatment plants (WWTP) to break down biodegradable material in the absence of oxygen. Although anaerobic digestion is considered environmentally safe, the sludge often possesses undesirable properties including resistance to dewatering and high concentrations of harmful or deleterious compounds. Toluene is one of the hazardous products of anaerobic digestion that can be harmful to humans and the environment. In previous studies, it was demonstrated that persulfates: peroxydisulfate (PDS,  $S_2O_8^{2-}$ ) and peroxymonosulfate (PMS,  $HSO_5^-$ ) could be successfully used in the sludge treatment

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