

عنوان مقاله:

Employin SO<sub>4</sub> based combined treatment methods for simultaneous wastewater sludge stabilization and dewatering: A review

محل انتشار:

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خلاصه مقاله:

In recent decades, one of the most significant technical, environmental, and economic challenges has been the increasing development of biological surplus sludge in wastewater treatment facilities all over the world. Researchers are drawn to concentrate on novel strategies due to the significance of the problem and the inadequacy of the traditional approaches in accomplishing all the key objectives. However, several technologies have been developed with the aims of minimization, treatment and reuse consequently; the main considered parameters are volatile solids (VS), fecal coliforms, particle size distribution, zeta potential, time to filter (TTF), specific resistance to filtration (SRF), capillary suction time (CST) and extracellular polymeric substances (EPS); a short review considering their advantages and disadvantages will be presented. Various unique technologies are now being explored in the realm of wastewater sludge stabilization and dewatering. In this regard, upgrading sludge treatment using SO<sub>4</sub>- based combined treatment methods and strong oxidants has been considered specifically. Peroxymonosulfate + Ozone (PMS+O<sub>3</sub>), a revolutionary advanced oxidation method that produces sulfate and hydroxyl radicals simultaneously, has been employed in recent years to stabilize and dewater sludge. Additionally, its effectiveness was evaluated in comparison with persulfate plus ozone (PS+O<sub>3</sub>). Recently, there has been a study conducted to evaluate the intensification of the disinfection process for treated municipal wastewater. This study focused on the use of advanced oxidation processes, namely peroxymonosulfate + UV (PMS+UV) and persulfate + UV (PS+UV), as well as the simultaneous removal of micro pollutants. This paper will provide a concise overview of the advancements made in research pertaining to the aforementioned topic, encompassing the problems encountered and the various methodologies employed.

کلمات کلیدی:

Wastewater sludge treatment, sulfate based combined methods, stabilization, dewatering

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