ACCELERATED CARBONATION OF MUNICIPAL SOLID WASTE INCINERATION BOTTOM ASHES: A SUSTAINABLE APPROACH FOR CO_2 SEQUESTRATION

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Accelerated carbonation applied to Municipal Solid Waste Incineration Bottom Ash (MSWI BA) as a sustainable and environmentally friendly technique for carbon dioxide (CO_2) sequestration is investigated. MSWI BA poses environmental challenges due to its alkaline nature and heavy metal content. Accelerated carbonation offers a promising way to address these issues by transforming MSWI BA into a stable and inert carbonated product that will be easier to be recycled in the construction industry. The impact of various parameters such as reaction time, water content, particle distribution and CO_2 content on the carbonation efficiency is considered, focusing on optimizing conditions for enhanced carbonation. Furthermore, the study delves into the characterization of the carbonated products, assessing their physical, chemical and mechanical properties to evaluate its suitability for various applications. The findings contribute valuable insights to the sustainable management of MSWI BA, presenting a viable solution for mitigating CO_2 emissions while simultaneously converting a waste byproduct into a secondary resource with potential engineering applications.

References

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