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Combined processing of waste organic polymers and manganese bearing waste/low grade ores into fuels and low-carbon manganese alloys

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Environmental Health Sciences

Research output: Contribution to journal › Article › peer-review

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Abstract

Georgia could serve as a unique natural testing ground for the development of green industry using advanced technologies for industrial processing of hazardous waste. The goal of the reported work was to improve on the current methods of reprocessing waste by using a combination of a microwave enhanced method of processing used tyres and plastic residues with the microwave enhanced processing of manganese bearing waste and low-grade ores into manganese oxide concentrate. The manganese concentrate could be processed into high-grade manganese alloys (metallic manganese, low-carbon ferromanganese, and composite manganese alloys). Microwave heating required lower energy and resulted in a two-fold increase in yield.

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'Green industry' | Composite alloys | Discarded plastic polymers | Fuel | Hazardous waste | Low-carbon manganese alloys | Manganese containing feed additives | Manganese oxide | Microwave heating | Used tyres

UN SDGs

This output contributes to the following UN Sustainable Development Goals (SDGs)

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