

PLASMA TECHNOLOGY FOR TREATMENT OF OIL-CONTAINING WASTE: PERFORMANCE ANALYSIS

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Abstract – The article presents the results of performance analysis of a technical procedure for treatment of oily waste in a high-temperature plasma converter. The calculations obtained demonstrate promising potential of using plasma technology for liquidation of oily waste along with acceptable values of payback period and profitability. The developed method of eliminating waste provides virtually no pollution of the atmosphere with toxic products such as furans and dioxins. In addition, instead of the hazardous ash residue obtained from conventional waste combustion, the end product of plasma waste processing technology is an ecologically safe basalt-like slag of inorganic origin, which can be used further, as well as the electric power and heat generated in the course of the process.

Keywords: processing of oily waste, plasma chemistry, performance analysis, power generation, basalt-like slag, capital cost repayment period, internal rate of return, net present value, pyrogas.