UTILIZATION OF INDUSTRIAL WASTE USING THERMAL PLASMA ENERGY

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Abstract – A possibility is considered for thermal plasma energy-assisted processing industrial silicate-containing waste for the purpose of its further utilization in industry, i.e. in the form of construction materials. A technology has been developed that makes it possible to obtain a mineral fiber with high performance characteristics and improved resistance to high temperatures basing the above waste. Plasma chemical reactor has been designed and validated for obtaining a melt starting from various kinds of waste produced by power generating plants as well as from other refractory nonmetallic materials having melting point values exceeding 1600°C.

Keywords: ash wastes, utilization, low-temperature plasma, silicate melt, plasma chemical reactor, mineral fibres.