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Thermodynamic simulation of zinc reduction from cooper-smelting slag

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Abstract

Thermodynamic simulation of zinc reduction (at 1500 °C) from the model system appropriate of the composition of the slag from autogenous smelting of copper-containing sulfide concentrates has been conducted. The data on simulation of condensed and gas phases compositions during heating of slag together with a carbon monoxide, a blast-furnace dust and gas purification sludge of a steel-making furnace has been given. The thermodynamic simulation results were pointed out on that distillation of zinc from slag together with a conversion of a portion of iron in the metallic state is possible. The subsequent receipt of the oxidized sublimates is due to high zinc concentration in a gas (up to 26-27%). These sublimates can be processing by hydrometallurgical methods.

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