

**CHT-17: MODELING OF BLOCK'S SOLIDIFICATION AND HEAT TRANSFER
DURING THE TECHNOLOGICAL PROCESSES IN FERROUS METALLURGY**

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ABSTRACT The realisation of the method of blocks' hot charging in the reheating furnaces before hot rolling requires a preliminary evaluation of the possible energy saving. An numerical investigation on the cooling process of the blocs during transport operations and optimal regimes for heating in the reheating furnaces has been done after the incorporation of the work of two mathematical models: (i) a model describing the heat transfer processes, crystallisation and the blocks' solidification under the conditions of continuous steel casting; (ii) a model, accounting the metal cooling, depending on the schedule and the operations' type at the blocks' transportation to the heating furnaces. As a result of thermal analysis on the base of numerical simulations an assessment of energy efficiency of the technology has been done.