

Thermal and Fluid Dynamics Studies Applied to Steel Industry

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Abstract

The energy pay back is one of the most interesting field especially in the steel industry where this contribution is strictly connected to steams and emissions inside and outside the plant. Perhaps, this application is sometimes disturbed by a strong variation of emissions ("off gas"). One example is the arc furnace where the process is very discontinuous and there are many fluctuations in the energy dissipation. One solution is represented by the use of special elements named "Phase Changing Material" (PCM). The aim of the work has been to study the behavior of the PCMs in different conditions in order to understand the best solution to adopt. COMSOL Multiphysics has been used for this kind of thermo-fluid dynamics FEA.