**«Current problems and perspectives in the field of continuous steel casting computer simulation»**

To date, we can see increase in using of engineering analysis systems in the field of continuous steel casting simulation due to their high accuracy and convergence with industrial experiments results.

Such powerful systems as «ANSYS» and «ProCast» allows hydrodynamic and thermal problems solving, the parallel interaction of which constitutes the essence of most metallurgical processes.

Group of authors from the LSTU`s Department of metallurgical technologies successfully carried out numbers of computer experiments in intermediate ladle and continuous casting mold processes simulation. This work provided with Russian Foundation for Basic Research financial support, within the framework of the scientific project No. 17-48-480203r\_a.

Experiments are aimed at first, at studying of further improving in liquid steel flow modifiers (partitions, turbo-stops, thresholds) design, at second, on influence of argon blowdown regime on liquid steel flow parameters in the 50-ton intermediate ladle workspace, and, at third, on influence of submerged nozzles design on the liquid steel flow in crystallizer, assuming deterministic-dynamic operation mode.

The result of calculations is: liquid steel flow velocity fields and flow temperatures fields in intermediate ladle and crystallizer, as well as temperature fields in the refractory lining of intermediate ladle . Dependence of primary flow average velocity change on exit from submerged nozzle is formulated.

These preliminary results allow us to assess the velocity changes and direction of the melt flow and formation of volumes with different melt temperatures when using flow modifiers in the ladle, including using of "argon curtain" in the casting chamber.

Obtained data on melt flow motion and on location of erosion spots in crystallizing «crust», also on the presence of temperature gradient zones in various regions of crystallizer workspace may be useful to practice engineers engaged in choice of crystallizer submerged nozzle design.

Effective control of intermediate ladle and crystallizer melt flow allows significant improvements in continuous cast slabs and rolled products quality in context of reducing metal products rejection due to defects associated with slag or nonmetallic inclusions presence and due to cracks formed as the result of insufficient thickness of crystallized «crust».

Keywords: continuous casting, CAE-system, modeling, tundish, continues cast mold, submerged nozzle, flow modifier, liquid metal flows, melt, CCM.