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NUMERICAL MODELING OF MULTIPHYSICAL PROCESSES FOR ELECTRON-BEAM SCULL MELTING OF TITANIUM

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With the aim of improving of scull crucible design with system of electromagnetic stirring of liquid metal, increasing of energy efficiency and determining of rational technological regimes of electron-beam scull melting three dimensional mathematical model for numerical investigation of electromagnetic, hydrodynamic and heat processes during melting has been developed. For simplicity, mentioned processes was considered as stationary. The influence of basic crucible

sizes ratio and direction of metal flow during electromagnetic stirring on efficiency of melting process was investigated. References 3, figures 3.

Key words: electron beam scull melting, scull crucible, system of electromagnetic stirring, mathematical modelling, electromagnetic, hydrodynamic and heat processes.

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