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Induction Heating Process Design Using Comsol® Multiphysics Software Version 4.2a

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Abstract : Induction heating computer simulation is a powerful tool for process design and optimization, induction coil design, equipment selection, as well as education and business presentations. The authors share their vast experience in the practical use of computer simulation for different induction heating and heat treating processes. In this paper deals with mathematical modeling and numerical simulation of induction heating furnaces with axisymmetric geometries. For the numerical solution, we propose finite element methods combined with boundary (FEM) for the electromagnetic model using COMSOL® Multiphysics Software. Some numerical results for an industrial furnace are shown with high frequency.

Keywords : numerical methods, induction furnaces, induction heating, finite element method, Comsol multiphysics software
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