Melting Efficiency Improvement for Steel Foundries

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Project Description:
The goal of this research project is to develop new melting and casting techniques to improve the energy efficiency in steel foundry operations. This project partners the U.S. DOE with Missouri S&T and the U.S. steel foundry industry to improve steel foundry energy efficiency, reduce greenhouse gases and other emissions, and reduced the costs of operation. This project includes several tasks including: 1) comprehensive study of variability in melting practices used by the steel foundry industry and the effects this variability has on energy consumption, 2) determine areas of opportunity for steel foundry energy savings through technical improvements in melting operations, 3) develop better refractory systems to reduce energy lost during melting and holding operations, 4) develop computer model to intelligently evaluate the important factors that determine energy efficiency in melting operations of steel foundries, and 5) validation and demonstration of energy savings through industrial trials in both induction and electric arc furnace melting foundries.

Publications: