



heat transfer society

WEBINAR FORUM

Thursday 21st January 2021

“Development of Flat Flame Burners for Industrial Heat Transfer Applications”

Victor Castaneda, HTS Award Winner

Several industrial processes involve the heating of long and thin strips. One such process is the decarburising annealing of electrical steel. Published research suggests that rapid heating of up to 1000°C/s during the decarburising annealing process significantly improves the magnetic properties of these steels. Heating of this type of steel is typically made by using radiant tube burners. However, with the use of radiant tubes it is not possible to reach the desired heating rate of 100°C/s.

This PhD project, in collaboration with Orb Electrical Steels, focused on developing a novel type of burner that produced a flat wall attached flame by means of the Coanda effect. Due to its unique flame geometry, the burner had the potential to achieve the required heating rates. In addition to this, the burner had the potential of reducing NO_x emissions, heating time, increase temperature homogeneity of the load, and reduce the furnace's volume with the consequential reduction of start-up times.

The Heat Transfer Society holds an annual 'Award' competition for a £1000 prize to encourage UK students to become involved in the heat transfer aspect of the engineering industry. They encourage Engineering and Science undergraduate and postgraduate students to submit their project reports, via their academic sponsors, to enter this competition which is open only to students in UK universities for the “best heat transfer project report with benefits for industry”. Details of the award and an application form are available from the HTS web site www.hts.org.uk.

The presentation will start at **12 pm** (for one hour)

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www.hts.org.uk