

CFD Simulation for Development of Cooling System in a Cooking Oven

Authors : V. Jagadish, Mathiyalagan V.

Abstract : Prediction of Door Touch temperature of a Cooking Oven using CFD Simulation. Self-Clean cycle is carried out in Cooking ovens to convert food spilling into ashes which makes cleaning easy. During this cycle cavity of oven is exposed to high temperature around 460 C. At this operating point the user may prone to touch the Door surfaces, Side Shield, Control Panel. To prevent heat experienced by user, cooling system is built in oven. The most effective cooling system is developed with existing design constraints through CFD Simulations. Cross Flow fan is used for Cooling system due to its cost effectiveness and it can give more air flow with low pressure drop.

Keywords : CFD, MRF, RBM, RANS, new product development, simulation, thermal analysis

Conference Title : ICCFDFT 2022 : International Conference on Computational Fluid Dynamics and Flight Testing

Conference Location : New York, United States

Conference Dates : January 28-29, 2022