2D Battery Cooling using Natural and Forced Convection

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Abstract

The objective of the present project is to study the cooling of the battery model in open source CFD package openFOAM. Separate case studies with forced and natural convection are considered. The first case involves fluid flowing through the domain and in the second case fluid is stationary in the domain. The case studies are of simple heat generation model in which a fixed heat generation of 1e7 W/m^3 is produced for a short span of time in the core of the battery. There is unsteady heat transfer between the cover region of the battery model and the fluid. The Temperature versus time and average Nusselt number versus time are plotted as graphs.

References

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