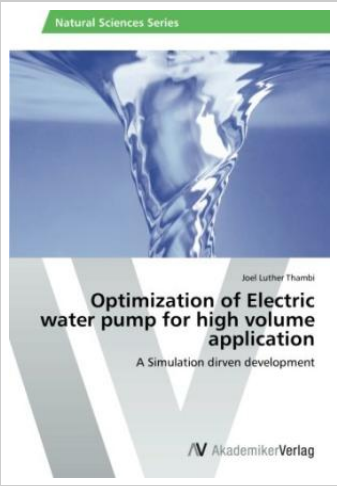

Optimization of Electric water pump for high volume application

By Thambi, Joel Luther

Condition: New. Publisher/Verlag: AV Akademikerverlag | A Simulation dirven development | For an automotive application, the electrical water pumps are based on two concepts: Brushed and brushless concepts. A life time study is made and a Brushless Direct current (BLDC) permanent magnet motor is considered for the proceedings of the development,which is discussed in this book. From the pump characteristic curve and customer requirement curve, the requirements of the motor in the form of torque and speed, is found out using the mathematical model. Apparently, using these boundary conditions an Axial Flux BLDC concept is developed and the model is simulated for a FEM analysis in MAXWELL 2D & 3D. As the linear model for the axial flux is not available, a parametric analysis is performed in 2D program and the best geometrical dimensions are fixed. This simulated model is later integrated with the mathematical model in SIMPLORER to find the performance of axial flux against the control drives. Finally the part modeling of water pump is done in CATIA v5 for the axial flux concept and the assembly is done, using a single axial bearing and by attaching the impeller direct to the rotor, without using any shafts. In...

Reviews

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