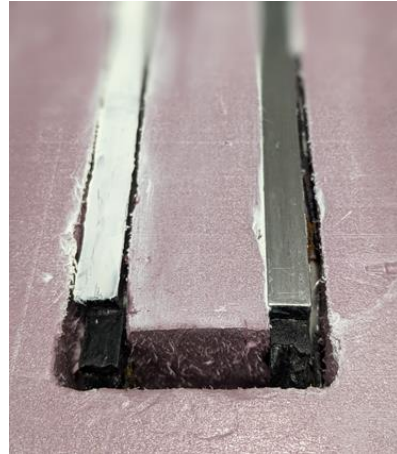


Improving the Thermal Conductivity of Form-Wound Litz-Wire Windings for Slot-less Machines



Grainger Power Engineering Awards

**Shannon Lin & Thanatheepan
Balanchandran, Haran Group,
IEMDC Submission**

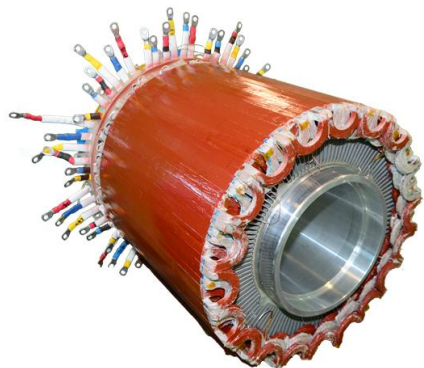
April 22, 2021



ILLINOIS ECE

Introduction

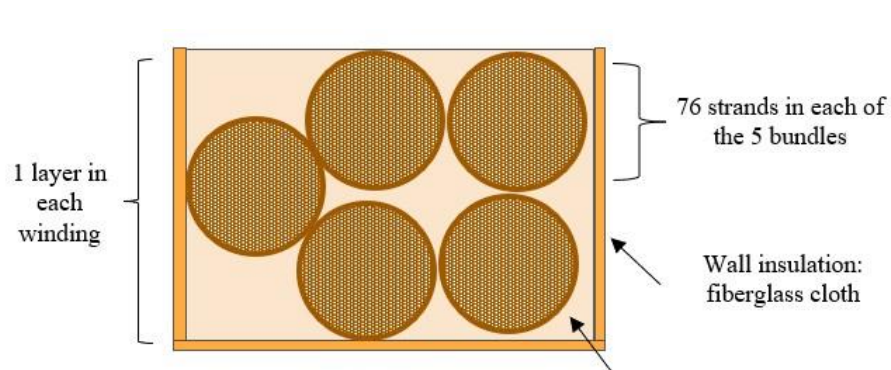
1-MW NASA Motor



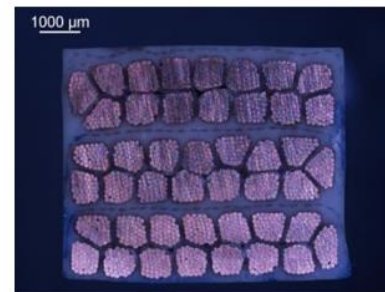
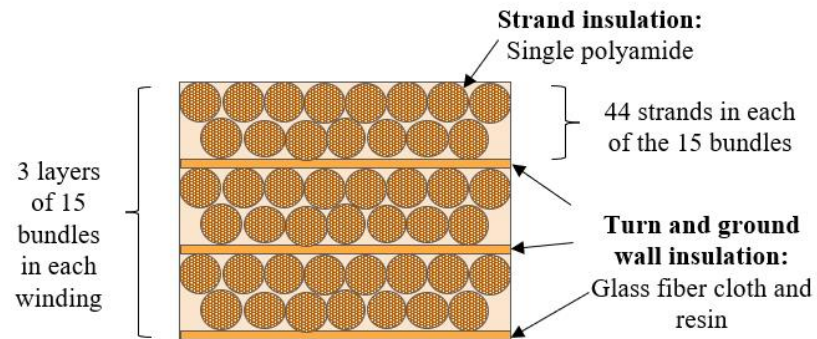
300-kW Hinetics Motor



Winding Cross Sections



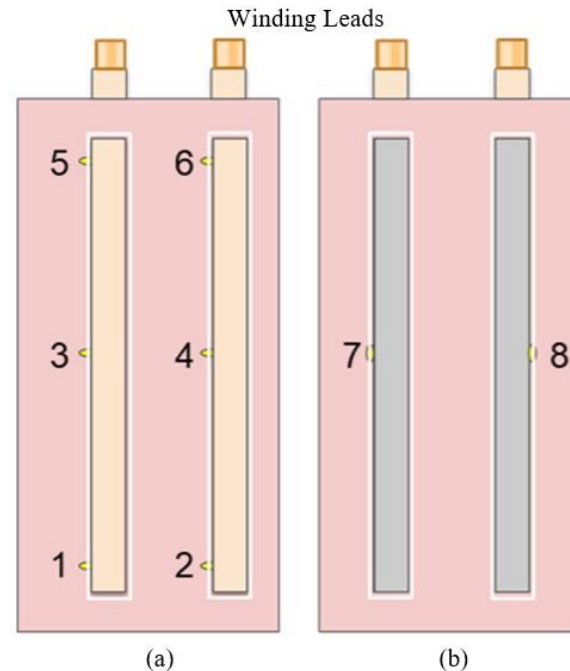
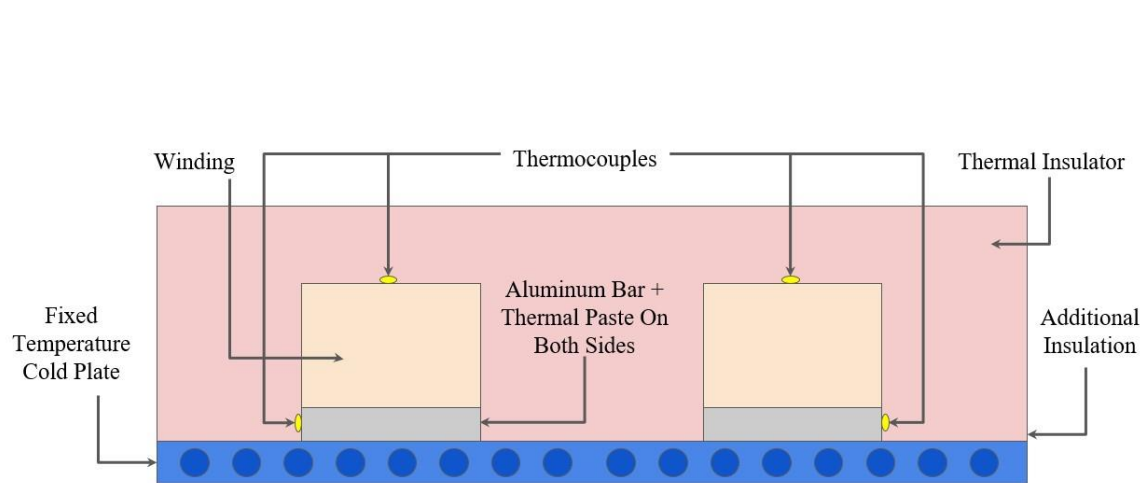
300-kW Hinetics Motor



1-MW NASA Motor



Experimental Setup

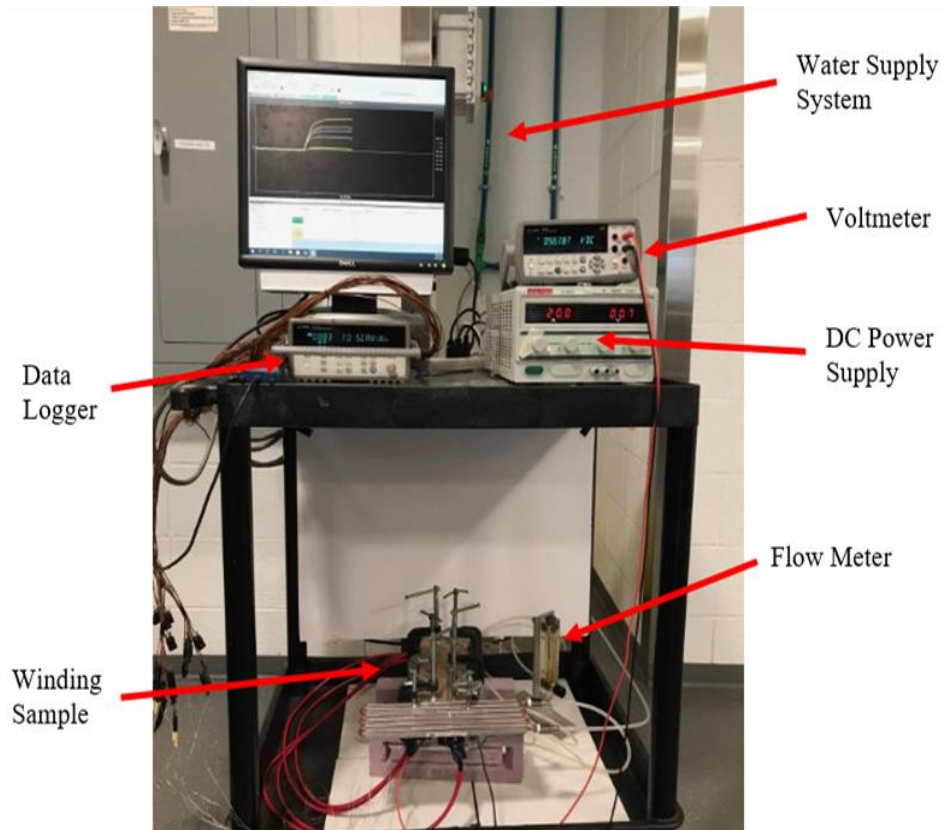
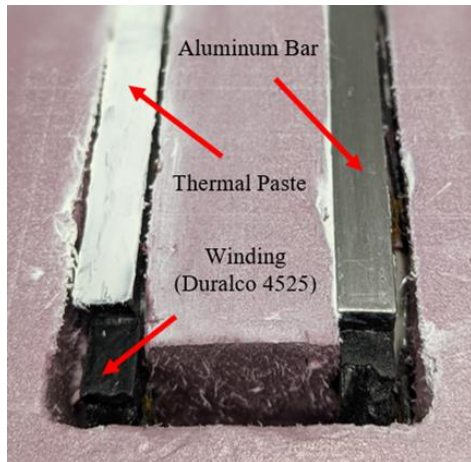


(a)
Air-Gap /
Insulation Side

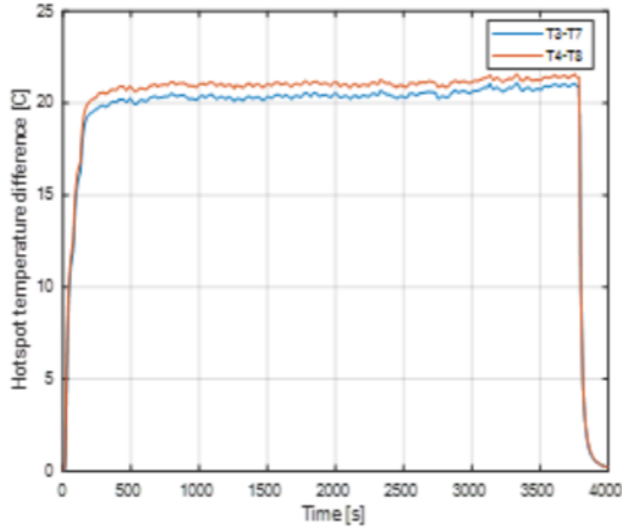
(b)
Stator / Cold Plate
Side



Experimental Setup

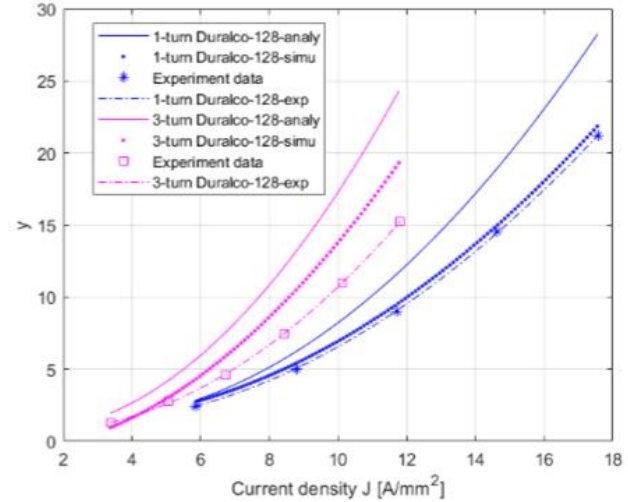
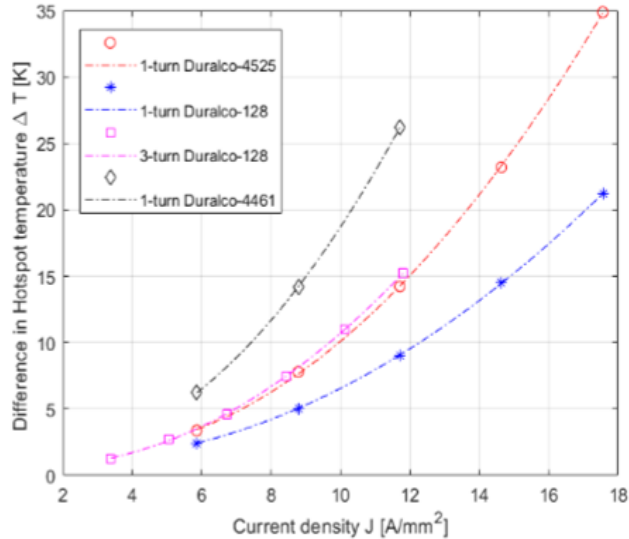


Results



60 A for Hinetics Winding

Experimental Results



Analytical, FEA,
Experimental Results

