OAK RIDGE NATIONAL LABORATORY
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IMFP Reluctance Motors with Yoke-Wound Coils and Wedge Supports

Disclosure Number

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Technology Summary

This invention disclosure provides details of winding techniques, structural design, and fundamental control concepts which result in improved performance, specific power, and/or power density of Isolated Multiple Flux Path (IMFP) reluctance motors. Various details of coil winding configurations and stator lamination support features are disclosed. The IMFP approach facilitates various unconventional control techniques since the torque overlap between phases is considerable. This includes torque ripple reduction as well as acoustic noise reduction by means of control strategy. Various design and control optimization processes were developed which utilize a newly developed modeling technique necessary to accurately model this unconventional machine.

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