Graz University of Technology
Electric Drives and Machines Institute

Bachelor's Thesis

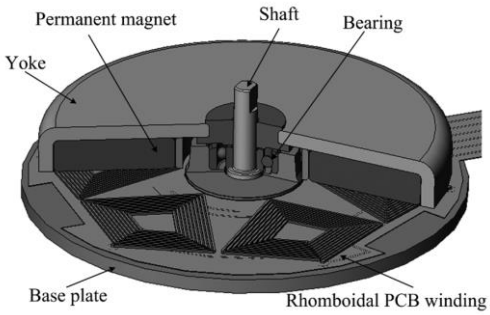
Printed Circuit Board (PCB) Motors

Motivation

Printed circuit board (PCB) motors are getting more and more attention in the sub-fractional horsepower electric drive domain, not only because size reduction is essential in many applications but also because printing the motor winding can be a tremendous advantage from a manufacturing point of view. This thesis determines the state-of-the-art of PCB motors and evaluates promising concepts for selected automotive auxiliary drive applications (e.g., sensor blowers, seat ventilation).

Research Questions

- Which applications utilize PCB motors?
- What are the pros and cons of the most common PCB motor concepts?
- Is there any untapped potential and what are the limiting factors of this motor type, focusing on automotive applications?



Source: M. Tsai and L. Hsu, doi: 10.1109/TMAG.2006.879438.

Tasks

- Determination of the state-of-the-art PCB motor concepts.
- Understanding the working principle of different PCB motor concepts.
- Suitability evaluation of different PCB motor concepts for selected automotive applications.
- Detailed analysis of one promising PCB motor concept.

Further Information

- Start: asap.
- Research questions and tasks may be changed ad libitum, adding simulation and/or experimental work. Special interests, strengths, and experience of the student will be considered.

Contact

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