Electric Drives and Machines Institute
Graz University of Technology

# Design Improvement of PCB Motors for Fractional Horsepower Fan and Pump Applications

## Motivation

Printed circuit board (PCB) motors are getting more and more attention in the sub-fractional horse-power 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 project is intended to analyze an existing design of a PCB motor and to work out improvements based on this design. These improvements will then be implemented in one or more prototypes and subsequently tested experimentally.

## Tasks

- Literature research on PCB motor designs.
- Conduction of experiments and measurements on the existing prototype.
- Improvements of the current design and evaluation of the impact of the variation of certain manufacturing parameters (eg. copper thickness, layer count, ..) on the performance and cost of the motor.
- Development of an optimization method for PCB motors.

## Further Information

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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