

HYDRESS – Development of new concepts for hydro-mechatronic aggregates to significantly improve resource efficiency

Subproject: Development and testing of high-speed electric motors

In view of the megatrend topics of energy efficiency, resource efficiency and reduction of critical materials, it is particularly necessary in the field of pump technology for air-conditioning and drinking water systems to break new ground and promote innovations.

Exactly here the cooperative project HYDRESS starts and wants to initiate improved circulating pump technologies by interaction and synergetic use of different competences of the project partners. This is achieved through new concepts and the use of innovative materials and production technologies to optimize the main components, the electric motor and the pump unit.

In the case of the electric motor, the focus of the development is on the use of soft magnetic composites in the stator and the injection of plastoferrites in the rotor. This enables the speed to be increased while simultaneously reducing the size and improving the efficiency. Taking this aspect into consideration, it is possible to significantly minimise the use of resources in circulating pumps and to reduce the life cycle costs.

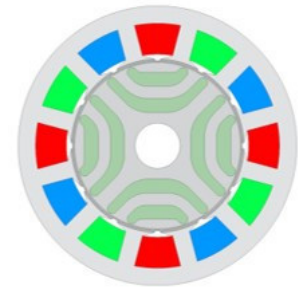


Figure 1:
Permanent magnet-assisted
synchronous reluctance motor



Figure 2: Rotor with
injected ferrite magnets

Project duration:

01/2018 – 03/2021

Project management:

Prof. Dr.-Ing. Sven Urschel
Hochschule Kaiserslautern
University of Applied Sciences
Schoenstr. 11
67659 Kaiserslautern
Germany

phone: +49 631/3724-2240

e-mail: sven.urschel@hs-kl.de

Project partners:

Bayern Innovativ GmbH
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