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KTM E-Technologies Call for Master Thesis Electric Machines



E-Machine Application Research and Design

All KTM's electric powertrain research and development is done at the E-Technologies site in Anif near Salzburg. We are developing individual control units, are integrating them to powertrain subsystems, and support our colleagues building vehicles around it.

Thesis Context

Electrification of vehicles has been gaining incredible momentum during recent years. KTM itself has been among the first major brands to launch a mass production electric motorbike with the 2014 Freeride E-XC. In the context of our forward looking R&D efforts we are offering a master thesis position for a talented and motivated student who already has a strong overview on the various electrical machine technologies and topologies, as well as their strengths, weaknesses and tradeoffs.



Work Packages

During the first phase, an overview study regarding available e-machine types and their applicability for traction drives will be conducted. The fundamental properties of different radial and axial PMSM variants, EESM types as well as vernier machines shall be compared. Strong focus is on the respective possibilities regarding power density, torque density, and efficiency over defined drive cycles such as WLTP.

Based on the results, one or two machine types will be selected for deeper analysis and prototypical design. Using industry standard tools such as MotorCAD and Ansys Maxwell, at least one machine design shall be developed.

Depending on the progress and results, a small-batch prototype series might be produced within or after the thesis timeframe.

Start date: As soon as possible

Duration: 8-12 months, paid thesis

Contact: Prof. Gerd Bramerdorfer

About KTM E-Technologies

KTM E-Technologies is a consulting and contracting agency specializing in powertrain development for electric vehicles. In addition, KTM E-Technologies is also developing selected subsystems for the KTM X-Bow carbon sports car. KTM E-Technologies is offering its services to companies within the corporate group such as the KTM Motorcycle AG, as well as to German automotive OEMs and globally. More information is available at info@ktm-etechnologies.com and <https://www.ktm-etechnologies.com>



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