



CNH Industrial is a global leader in the capital goods sector with established industrial experience, a wide range of products and a worldwide presence. Each of the CNH Industrial's brands is a major international player in its specific industry: Case IH, New Holland Agriculture and Steyr for tractors and agricultural machinery; Case and New Holland Construction for earth moving equipment; Iveco for commercial vehicles; Iveco Bus and Helieuz Bus for buses and coaches; Iveco Astra for quarry and construction vehicles; Magirus for firefighting vehicles; Iveco Defence Vehicles for defence and civil protection; and FPT Industrial for engines and transmissions. More information can be found on the corporate website: www.cnhindustrial.com

FPT Motorenforschung AG in Arbon has around 250 highly qualified employees working with commitment and acknowledged success. As the main innovation center for FPT Industrial, the site is involved in developing FPT Industrials' future powertrain solutions (not only in electrified powertrains, hybrids and fuel cells, but also novel engines concepts and alternative fuels) and is therefore at the forefront of a transition towards a future of alternative propulsion systems.

Electric Drives Engineer / EMAG Expertise

As a member of the Electric Drives Team in the Electrified Powertrain Engineering division of FPT Industrial, you will be part of a highly skilled team driven to design and engineer best-in-class electric machines and power electronics for FPT Industrial electrified powertrain product portfolio. You will design, develop and integrate high performance and high-density electric machines into hybrid and full electric powertrains. You will work in a collaborative team environment. You will be contributing to the development of advanced concepts as well as their implementation for application to on-road vehicles and non-road applications.

Your tasks

- Working in a multidisciplinary team, develop and deliver best-in-class electric machines and power electronics designs for FPT Industrial electrified powertrain product portfolio for hybrid and full electric powertrains
- Perform design analysis using modelling and simulation techniques
- Develop tools, methods, algorithms to efficiently create new designs and predict component performance
- Connect the organization to the latest technology developments and trends in industry in terms of materials, processes and topologies. Also monitoring market and competitors' product portfolio.
- Study, invent, and implement new electric machine technologies to meet our product lines requirement but also in competition to the state of art solutions in the market.
- Continuously evaluate new technologies and validate existing designs to develop the most power dense, efficient, low cost, and reliable electric motors
- Technical liaison with system and subsystem suppliers in electric machines field.
- Supplier management when and where necessary
- Plan and supervise test series on rig (components), bench and vehicle (total system)
- Communicate results and make presentations that describe analysis and solutions
- Collaborate closely with various internal departments / laboratories and universities
- Specify component technical requirements (State of Requirements) and evaluate supplier technical proposals (Sourcing and technical reviews)
- Define, manage and supervise supplier and internal component development and validation activities: drawings and technical documentation release, virtual simulation, design and installation FMEA, test plans (DVP)
- Support problem solving and troubleshooting activities



Your profile

Basic Qualifications:

- You have a university / engineering school degree in electrical engineering, several years of experience in a similar role. PhD profiles preferred.
- A good understanding of system and component interactions for traction/propulsion eDrives
- Expertise in Electrical Motors for Automotive Applications, On/Off road vehicles from design to manufacturing.
- Ideal focus on Permanent Magnet based motors (all topologies, Axial/Radial/Transversal, ..)
- 7+ to 10+ years of experience:
 - Electromagnetic Design, Simulation and Analysis based on Analytical models or Numerical/FEA tools and of electric machines
 - High voltage Motor development, prototyping and testing
 - Motor Control/Advanced Motor Control and condition monitoring
- You have good English and German (preferred) skills (spoken and written), Italian skills would be an asset
- You are a highly motivated self-starter and team-player with very good communication skills

Preferred Qualifications:

- Strong knowledge and understanding of electric machine physics, modelling, and technologies
- Deep understanding in mechanics, dynamics, thermal analysis and material properties highly preferred
- Knowledge of modelling and design tools (CAD, FEM/FEA) for mechanical design and static and dynamic structural analysis for virtual validation
- Base knowledge of Design Standards and materials specification and properties
- Knowledge on fatigue analysis and mechanical wearing and ageing processes of electrical motor in general but more in details for electric motor for traction/propulsion.
- Experience with FMEA, DVP
- Good understanding of manufacturing processes for electrical motors and the key challenges.
- Technical understanding of inverters and combined constraints with electric motor (insulation, current and voltage rating, ...)
- Good technical understanding of electromagnetic compatibility (EMC)
- Strong technical understanding of Motor control and condition monitoring.
- Proficient coding skills with preference for MATLAB experience
- Self-motivated with the ability to manage multiple tasks
- Good technical communication skills

Interested?

Please apply here: <https://cnhindustrial-emea.mua.hrdepartment.com/hr/ats/Posting/view/15973>

FPT Motorenforschung AG, Schlossgasse 2, CH-9320 Arbon, Tel. +41 71 44 77 477, www.fpt-motorenforschung.ch

