



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 Heliouz 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.

Marie Curie Fellowship in Advanced Motor Controls and Condition Monitoring for Commercial Vehicles

As a member of the eDrive 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 electrical motors and inverters for FPT Industrial electrified powertrain product portfolio. You will support the engineering, development and integration of Advanced Motor Controls and Diagnostic for Condition Monitoring. You will be contributing to the development of a high efficiency and low ripple motor control with focus on advanced methods and technologies to enable eMotor and Inverter diagnostics (insulation, bearing, magnets, electronics, ...).

Your tasks

- Literature / State of art review on advanced eMotor Control for high efficiency and low ripples in addition to Condition Monitoring of key eMotor and Inverter parts for their state of health
- Define/Simulate Advanced Motor Control either selected from State of the art or from new proposal
- Define/Simulate Condition Monitoring for key eMotor and Inverter parts with highest risks of decay and failure (winding insulation, bearing, power electronic devices, Capacitances, ...)
- Identify HW/Inverter configuration and embedded instrumentation to fulfil the above Advanced Control and Condition Monitoring
- Conduct design iterations on selected initial solution for prototyping, with adequate reporting
- Design of experiments/ accelerated stress test to collect required data for development and validation for performance and functionality then for endurance and reliability tests
- Interfacing with other institutions and coordinating potential work packages to be executed by universities (ETH /EPFL...)

Your profile

- You hold a Ph.D. in the field of Electrical Drives, ideally with focus on traction applications (on/off road) by September 2021 (MSCA requirement)
- You have less than 8 years full-time equivalent experience in research after PhD, by September 2021 (MSCA requirement)
- You have lived for less than 1 year in Switzerland in the past 3 years (MSCA requirement)
- You are an expert in the field of electrical Motor control, electrical motors modeling/manufacturing/testing, sensors and signal processing.
- You have very good knowledge of programming in MATLAB/Simulink, Circuit simulation tools
- You have Good knowledge of Electromagnetic, Mechanical and thermal aspects for eMotor and Inverter



- You have very good knowledge of experimental planning, data interpretation and processing
- You have strong analytical skills
- You are pro-active, self-starter, able to troubleshoot test stations and test hardware
- You are able to manage budget, time plans and ordering of parts for experiments
- You are fluent in English

The selected researcher will be contacted for MSCA development and training opportunity. We will support the candidate to prepare and submit the proposal. The candidates, whose proposal will be accepted by EU, will work with the eDrive team at FPT.

Duration: 2 years contract

Application deadline to FPT: June 1st, 2021

Proposal submission deadline: September 15th, 2021

Start date: March 2022 or later

Workplace: FPT Motorenforschung AG, 9320 Arbon, Switzerland

Interested?

For further information, please contact Mr Abdelhadi Besri– Tel. +41 (0)76 67 90 847. Please send your application to Human Resources: recruitment.arbon@cnhind.com

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