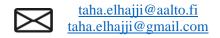


# Taha EL HAJJI

Postdoctoral Researcher at Aalto University on High-Speed Electrical Machines













#### **EXPERIENCE**

- **2022- Aalto University,** *Espoo, Finland.* 
  - Postdoctoral Researcher on Modeling of High-Speed Electrical Machines,
  - Teaching Course of Finite Element Theory in Electromechanics,
  - Instructor of Laboratory work Electromechanics,
  - Supervisor of PhD and internship students,
  - Responsible for the scientific communication: <u>Website</u> and <u>Linkedin page</u> of the research group.
  - Responsible for the scientific communication: <u>Website</u> and <u>Linkedin page</u> of the project CoEHiECSs.
- **2018-2022 STELLANTIS,** French Automotive Company, *Vélizy, France*.

Research and Development Engineer, Industrial PhD work.

**Laboratory SATIE – Paris-Saclay University,** *Gif-sur-Yvette, France.* 

Supervisor of Master's Thesis

« Experimental Evaluation of AC Losses in Slot's Windings at high frequency ».

**2021 CNAM**, French Graduate School in Electrical Engineering, *Paris, France*.

Supervisor of Practical Works for Graduate Students.

**EPE 2020 – ECCE: European Conference on Power Electronics** 

Co-Chair of Conference Session.

**STELLANTIS,** French Automotive Company, *Vélizy, France.* 

Master Thesis: Modeling Analysis of Innovative Hybrid Electric Vehicles.

**2017 – 2018 University of Paris Diderot,** *Paris, France.* 

Tutor of Mathematics for Undergraduate Students.

**2017 AKKA Technologies**, *Blagnac*, *France*.

Bachelor Thesis: Sizing of input PWM's Filter by analytic calculus to optimize the mass of the drone

Omega.

**2016 – 2017 Laboratory LAPLACE – ENSEEIHT Engineering School**, *Toulouse*, *France*.

Academic Project: Sizing of the converter of an electric vehicle.

# **EDUCATION**

- **2018 2023 Paris-Saclay University Laboratory SATIE**, *Gif-sur-Yvette*, *France*.
  - (March) In partnership with **STELLANTIS** (French Automotive Company)

Ph.D.: Modeling and Optimization of High-Speed Electrical Machines for Electric Vehicles.

2017 – 2018 Paris-Saclay University, Top French University in Electrical Research, *Gif-sur-Yvette*, *France*.

Master of Science by Research: Automotive Propulsion and Electrification.

2015 – 2017 ENSEEIHT, Top French Graduate Schools in Electrical Engineering, *Toulouse, France*.

Master of Electrical Engineering: Electrical Machines, Power Electronics, Control.

**2015 – 2016 University of Toulouse III**, *Toulouse*, *France*.

Bachelor of Mathematics: Linear Algebra, Probability, Functional Analysis, Topology.

**2012 – 2015 CPGE Henri Poincare – Pothier,** *Nancy-Orleans, France.* 

French Preparatory Classes in Mathematics, Physics and Programming: *Three years of advanced classes to prepare fresh high school graduates to sit highly competitive national entrance exams.* 

### **PUBLICATION**

#### Google Scholar: Profile Taha EL HAJJI

2023	AC Losses in Windings: Review and Comparison of Models with Application to Electric Machines,
	T. El Hajji*, S. Hlioui, F. Louf, M. Gabsi, A. Belahcen, G. Mermaz-Rollet, M. Belhadi, IEEE Access,
	Early Access, (DOI: 10.1109/ACCESS.2023.3345014).

- 2023 Benchmark of High-Speed Electric Machines for Fully Electric Regional Aircraft Targeting 20kW/kg Specific Power, T. El Hajji\*, A. Lehikoinen, A. Hemeida, F. Martin, A. Belahcen, Conference COMPUMAG 2023, Kyoto, Japan.
- Optimal Design of High-Speed Electric Machines for Electric Vehicles: A case Study of 100 kW V-shaped Interior PMSM, T. El Hajji\*, S. Hlioui, F. Louf, M. Gabsi, G. Mermaz-Rollet, M. Belhadi, Machines 11, no. 1: 57, (DOI: 10.3390/machines11010057).
- 2020 Hybrid model for AC Losses in High Speed PMSM for arbitrary flux density waveforms, T. El Hajji\*, S. Hlioui, F. Louf, M. Gabsi, G. Mermaz-Rollet, M. Belhadi, ICEM Conference 2020, Gothenburg, Sweden, (DOI:10.1109/ICEM49940.2020.9271017).
- **Efficiency Improvement of a Series–Parallel Hybrid Electric Powertrain by Topology Modification,** *B. Kabalan, E. Vinot, C. Yuan, R. Trigui, C. Dumand, T. El Hajji\**, IEEE Transactions on Vehicular Technology 2019, (DOI: 10.1109/TVT.2019.2952190).
- **Sensitivity Analysis on the Sizing Parameters of a Series-Parallel HEV,** *T. El Hajji\**, *B. Kabalan, Y. Cheng, E. Vinot, C. Dumand*, Conference of IFAC AAC 2019, Orleans, France, (DOI:10.1016/j.ifacol.2019.09.065). Awarded: Young Author Award.

#### **SKILLS**

Softwares	Communication	Project Managment	Rigorous
(Comsol, Ansys, Femm)			
Programming	Self-Motivation	Critical Thinking	Attentive to Details
(Matlab, Python, Caml, Latex)			

#### **AWARDS**

**Young Author Award,** IFAC AAC Conference 2019, *Orleans, France.* 

# **LANGUAGES**

English	French	Finnish	
Fluent	Mother tongue	Basics	

# **HOBBIES**

<b>Scientific Communication</b>	Guitar	Music Theory	Taekwondo	Brazilian Jiu Jitsu
on Linkedin	(8 years)	(9 years)	(3 years)	(1 year)
(2 years)				
Swimming	Soccer	Chess	Sudoku	Kung-Fu
(12 years)	(10 years)	(10 years)	(5 years, School	(1 year)
			Award)	