# Hussein Obeid Assistant Professor in Dynamics and Control

- Writing and Involvement in European Projects
- Established Partnerships with Industries
- Over 7 Years of Teaching Experience at Universities in France
- Creation and Responsibility for Course Units

# Profile

Date of birth: 25 October 1991 Nationality: French Work address: Sultan Qaboos University, Oman J +968 9129 6304
Section LinkedIn Profile

#### Education

- 2015 2018 **Ph.D. in Control Engineering**, Femto-ST institute, University of Bourgogne Franche-Comté, France.
- 2009 2014 MSc. in Electrical Engineering, Lebanese University, Lebanon.

## **Professional Experience**

- 2024 present Assistant Professor, Mechanical and Industrial Engineering Departement, Sultan Qaboos University, Oman.
- 2020 2024 Associate Professor, University of Caen Normandy and LUSAC Laboratory, France.
- 2018 2020 Assistant Professor, University of Bourgogne Franche-Comté and Femto-ST institute, France.
- 2016 2018 University Lecturer, University of Technology of Belfort-Montbéliard.

**Research Experience** 

## • Research Project

- 2024 2027 Participant and contributor to the 'Important Project of Common European Interest for Next Generation Cloud Infrastructure and Services' (IPCEI-CIS) with Orange Innovation. University of Caen Normandy Budget: 217 K€.
- 2017 2023 Participant and contributor to the 'Interreg North-West Europe project: Integrating Tidal energy into the European Grid' (ITEG). University of Caen Normandy Budget: 612 K€.
- Supervision of 4 Ph.D. students and 3 Master thesis.
- Participation in 1 thesis committee (excluding jointly supervised students).



# **Research** Areas

- Robust and adaptive control/observer of electrical machines for energy conversion systems.
- Diagnosis and prognosis of energy storage systems (Lithium-ion batteries, Fuel cell,...).
- Energy management optimization of electric vehicles and microgrids.
- Development of Hardware-in-the-loop and Power-Hardware-in-the-loop test bench.
- Control and observation of uncertain/perturbed nonlinear systems.

### **Teaching Experience**

- 7+ years of experience in university teaching (with online experience).
- 24+ courses covering power electronics, electrical machines, control systems and automation.
- 1100+ teaching hours (lectures, tutorial and labs) for different public.
- Supervision of internships and apprenticeships.
- Design and Leadership of Course Units.

#### Main courses:

- Power Electronics
- Analog Electronics
- Electrical Machines
- Renewable Energies
- Electricity
- Electromagnetic

- Informatics
- PLC programming
- Control systems
- Simulation Tools
- Signal processing
- Statistics

## Programming and software

Python, C#, Matlab, Simulink, LabVIEW, Control Desk, ConfigurationDesk, DSPACE, BaSyTec, Arduino-C, Raspberry Pi, CoDeSys 2.3 & 3.5, FESTO & Wago PLC, HOMER, PVGIS, ...

#### Languages

English, French and Arabic.

## Publications 5 recent papers

- [1] C. D. Cruz-Ancona, L. Fridman, <u>H. Obeid</u>, S. Laghrouche, C. A. Pérez-Pinacho, A uniform reaching phase strategy in adaptive sliding mode control, Automatica, 2023.
- [2] <u>H. Obeid</u>, R. Petrone, H. Gualous, H. Chaoui, Higher Order Sliding-Mode Observers for State-of-Charge and State-of-Health estimation of Lithium-ion batteries, IEEE transactions on Vehicular Technology, 2022.
- [3] <u>H. Obeid</u>, S. Laghrouche, L. Fridman Dual layer barrier functions based adaptive higher order sliding mode control, International journal of robust and nonlinear control, vol. 31, pp. 3795-3808, 2021.
- [4] Y. Zhou, <u>H. Obeid</u>, S. Laghrouche, M. Hilairet, A. Djerdir, A novel second-order sliding mode control of hybrid fuel cell/super capacitors power system considering the degradation of the fuel cell, Energy Conversion and Management, vol. 229, pp. 113766, 2021.
- [5] S. Laghrouche, M. Harmouche, Y. Chitour, <u>H. Obeid</u>, L. Fridman, Barrier function-based adaptive higher order sliding mode controllers, Automatica, vol. 123, pp. 109355, 2021.