

Davide Barater received the Master's degree in Electronic Engineering in 2009 and the Ph.D. degree in Information Technology in 2014 from the University of Parma Italy. In 2012, during the PhD, he was a visiting scholar at the PEMC group of the University of Nottingham, UK, whereas in October 2015, he was a visiting researcher at the Chair of power electronics, University of Kiel, DE.

Soon after the PhD he started working at the Department of Engineering and Architecture, University of Parma, Italy, as Post-Doc researcher for two years and then as research fellow.

Since 2018 he has been with the University of Modena and Reggio Emilia, where he is currently Associate Professor of Electrical machines and drives at "Enzo Ferrari" Department of Engineering.

His research area is focused on power electronics for e-mobility and motor drives.

He is involved in a number of European and national projects:

- Principal Investigator (Coordinator) of RAISE Project (Reliable Aircraft electrical Insulation System sElection), for a total funding of about € 400k from the European Community: Horizon 2020, Clean Sky 2, call JTI-CS2-2017-CfP06-SYS-03 -12. The project aims to identify the impact of high voltage gradients (dv / dt), introduced by the rapid switching of the new wide-bandgap power devices, on the lifetime of the winding system of electric motors. <https://www.raise.unimore.it>
- Principal Investigator (Coordinator) of AUTO-MEA Project (Automated Manufacturing of wound components for next generation Electrical machines), for a total funding of about € 1100k: Horizon 2020, Clean Sky 2, call JTI-CS2-2018-CfP09-SYS-03-19. The project aims to identify innovative solutions for the structure of the windings of electric motors for transport applications, capable of allowing high power densities and low losses even in the case of high-speed machines with high operating frequency. <https://www.automea.unimore.it>
- Unit coordinator of the DORNA Project (Development of high reliability motor drives for next generation propulsion applications), for a total funding of about 1100k € by the European Community Horizon 2020 program - Marie Skłodowska-Curie Actions - Research and Innovation Staff Exchange (RISE), Call: H2020-MSCA-RISE-2019. The project aims to create, through exchange and cross-sectoral and international contamination, synergies between academic and industrial sectors at European level to train a new generation of researchers and professionals able to successfully tackle the challenges of electrification in the sector automotive. <https://cordis.europa.eu/project/id/872001>
- Unit coordinator Green SEED Project (Design of more electric tractors for more suitable agriculture), for a total funding of about € 514k, Italian program PRIN2017 - youth line. The project aims to identify solutions for the hybridization or purely electrical realization of agricultural machines, in order to reduce the environmental impact and the production of CO₂. The study includes the identification of the best topology of the electrification structure to be adopted, the analysis of the load requirements for the different operations and the design of the traction components.
- Unit coordinator of the SCAPE Project (SWITCHING-CELL-ARRAY-BASED POWER ELECTRONICS CONVERSION FOR FUTURE ELECTRIC VEHICLES), for a total funding of about 5999k € by the European Community Horizon Europe program – Action: Climate, Energy and Mobility. The project aims at achieving three main objectives: i) propose a standardisable, modular, and scalable approach, based on multilevel technology, for the design of the EV power conversion systems ii) develop highly-compact and integrated building-block implementation. iii) propose intelligent modulation and control strategies, online diagnosis, and digital twin for predictive maintenance with machine learning. <https://cordis.europa.eu/project/id/101056781>

He is the author or co-author of over 119 international publications, 36 of which are journals and 83 of international conference proceedings in the field of electrical converters, machines and drives.

The publications, according to Scopus source, totalled a number of citations equal to 1970 with calculated h-index equal to 24 (May 2024).

<https://www.scopus.com/authid/detail.uri?authorId=35182543800>

On google scholar citations are 2474 with calculated h-index equal to 28 and i10-index 48 (May 2024).

<https://scholar.google.com/citations?hl=it&user=Duy49k8AAAAJ>

Davide Barater is a reviewer for the major international journals in the field of power electronics, power converters and electric drives, and he acts as Associate Editor for the journal IEEE Transactions on Industry Applications and Secretary of the Electrical Machine Technical Committee of IEEE Industrial Electronics Society IES. In 2021 He acted as General chair of the 2021 IEEE Workshop on Electrical Machine Design, Control and Diagnostics (WEMDCD), 8-9 APRIL 2021 <http://www.wemdc2021.unimore.it>

Since 2015, he has been acting as Topic Chair for the main international conferences organized by IEEE.

He is an expert evaluator for the European Commission for the Horizon Europe programme.

In March 2017 he was one of the founders of eDriveLab, a spin-off company of the University of Parma involved in vehicle electrification.

In UniMore Davide Barater holds the positions of:

- member of the board of the joint doctorate programme in "automotive for intelligent mobility" - administrative office, University of Bologna
- secretary of the board for quality in teaching and education of the "Enzo Ferrari" Department of Engineering- DIEF
- Member of the board for quality in teaching and education of the master's degree course in "Advanced Automotive Engineering"
- Member of the board for internationalization of the master's degree course in "Advanced Automotive Engineering"
- Responsible of the student exchange program between UniMore and the University of Nottingham Ningbo China
- Responsible of the PhD double Degree programme with the University of Nottingham, UK

At the moment Davide Barater presents 3 out of 3 indicators higher than or equal to the thresholds set by the ASN for the role of commissioner in Area 09 - Industrial and Information Engineering, and has received the Italian full professorship certification in 05/11/2018.

Modena 14/05/2024