

PERSONAL INFORMATION

Ezio SPESSA



WORK EXPERIENCE

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- 23/12/2016–Present **Full Professor (ICEs – emissions and control; HEVs - energy management in powertrains for road vehicles)**
Politecnico di Torino, Energy Department, Torino (Italy)
- 1/2/2001–22/12/2016 **Associate Professor**
Politecnico di Torino, Energy Department, Torino (Italy)
- 21/12/1992–31/1/2001 **Assistant Professor**
Politecnico di Torino, Energy Department, Torino (Italy)
- 1/6/1991–31/10/1992 **Research fellow in combustion and fluid dynamics of internal combustion engines**
Politecnico di Torino, Energy Department, Torino (Italy)

EDUCATION AND TRAINING

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- 01/11/1992–31/10/1995 **PhD in Energetics**
Politecnico di Torino, Torino (Italy)
- 01/11/1985–16/5/1991 **Laurea (MSc Degree) in Mechanical Engineering, summa cum laude**
Politecnico di Torino, Torino, Italy)

ADDITIONAL INFORMATION

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- EU memberships** POLITO representative in 2ZERO/EGVIA
University representative in 2ZERO Partnership Board since 2021
- Other memberships** Member of the Scientific Board of CTN – Italian National Transport Cluster:
<https://www.clustertrasporti.it/en/>
- Academic positions and offices** Member of the Directive Board of CARS@polito (inter-departmental Center on Automotive Research and Sustainable mobility): <http://www.cars.polito.it/>
- Other organisational activity** Co-organiser of international conferences.
Reviewer of national and international research projects.
Associate editor of *Frontiers in Future Transportation* (Board of Transportation Emissions)
- R&I activity** Coordinator of e-gomotion CSA VII FP of the EU. POLITO scientific coordinator for GREEN IP VIFP, CORE CP VIIFP, SAGE CSA VII FP, FABRIC CP VII FP, TRAVISIONS 2016 and 2018 CSA H2020, GasOn IA H2020, Imperium IA H2020, Skillful RIA H2020 of the EU as well as of several national and regional R&I projects. Actively involved in NICE, InGAS, STEVE and GAST EU projects.

He has published over 150 publications (more than 70 in peer reviewed international journals of the ASME, ELSEVIER, JSME, KSAE, SAE - Int. Journals and Transactions) and 1 book chapter. H-index: 23 (Scopus). 2 patent applications.
- Main expertise** New technologies and solutions for the efficient use of energy in conventional (ICE-based) and hybrid powertrains, so as to minimize their GHG and pollutant emissions. Energy management in HEVs. Model-based closed-loop controls of combustion and emissions. Exploitation of renewable fuels in powertrains. Impacts of connectivity/automation on transportation emissions. Environmental footprint assessment of road vehicles. Management of research and education partnerships with major OEMs and research centres.

Main research areas are:

- Vehicle technologies and vehicle propulsion solutions:
 - Conceptual vehicle design and advancements in vehicle systems: integration at vehicle level of ancillaries, energy management, connectivity and usage profile optimisation to maximise energy efficiency and recuperation; tools for virtual verification, validation and comparison of zero emission vehicles.
 - Efficient control of ICE and vehicle operations (including AI applications, predictive and self-adaptive control techniques)
 - Thermal management
 - Renewable fuels and Hydrogen ICEs
 - PHEV (including operations with e-fuels and H₂)
 - Energy management strategies in HEVs (including synergies with V2X)
 - Data-driven approaches to estimate SoC and SoH of automotive batteries (including IA approaches)
- Innovative concepts, solutions and services for the zero-tailpipe emission mobility of people and goods: Define zero-emission tailpipe emission vehicles adoption and development scenarios, strategies and pathways towards 2030, 2040 and 2050 (direction & priority setting)
- LCA approaches and circular economy aspects for sustainable and innovative road mobility solutions.