

PERSONAL INFORMATION

Bruno Facchini

📍 [REDACTED]

☎ [REDACTED]

✉ bruno.facchini@unifi.it

🌐 <https://www.dief.unifi.it/vp-141-htc-group.html>

Sex M | Date of birth [REDACTED] | Nationality Italian

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input checked="" type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

2019 to present

Director of the Department of Industrial Engineering, Univ. of Florence

2014 to 2019

Director of the Ce.R.Tu.S. ("Centro di Ricerca, Trasferimento e Alta Formazione "Turbomacchine e Sistemi Energetici"), Univ. of Florence

A research center working on Propulsion and Energy System

2014 to present

Chair of Heat Transfer & Fluid Flows Cluster of TDCOM (AvioAero Technology Development Communities)

An European network between Universities, Research Center and companies focused on aerengine research and development, guided by GE Avio.

2013 to present

Responsible of THT (Technologies for High Temperature) Lab at Department of Industrial Engineering, Univ. of Florence

Research laboratory with infrastructures for testing novel combustion processes and high temperature components in aero and industrial engine, equipped with advanced diagnostic methodologies for aerothermal investigation (up to 1MW of thermal power @ 1 MPa and 2000 K)

2015 to present

Full Professor at Department of Industrial Engineering, Univ. of Florence

Lecturer of the master's degree course "Heat Transfer and Combustion in thermal engines"

Lecturer of the master's degree course "Gas Turbines for heavy-duty and aeronautical application"

Lecturer of the master's degree course "Engine Operability"

Lecturer of the bachelor degree course "Energy Systems"

2000 to 2015

Associate Professor at Department of Industrial Engineering, Univ. of Florence

Lecturer of the master's degree course "Heat Transfer and Combustion in thermal engines"

Lecturer of the master's degree course "Gas Turbines for heavy-duty and aeronautical application"

Lecturer of the master's degree course "Engine Operability"

Lecturer of the bachelor degree course "Energy Systems"

1998 to 2000

Associate Professor at Department of Engineering, Univ. of Parma

Lecturer of the master's degree course "Heat Transfer and Combustion in thermal engines"

1990 to 1998

Technologist at the Department of Industrial Engineering, Univ. of Florence

Experimental labs responsible and contribution to the Lecturer of the master's degree course "Advanced Power Plants"

EDUCATION AND TRAINING

[REDACTED]

- 1987-1990 **PhD in Machine Engineering**
University of Bologna – Italy
Thesis on cooling systems effects on gas turbine performance
- 1980-1986 **Master Degree with honor in Mechanical Engineering (5 years course)**
University of Florence – Italy
Thesis on flutter instability in turbine cascade.

PERSONAL SKILLS

Mother tongue(s)	Italian
Other language(s)	English B2, French B2
Job-related skills	<p>Prof. Bruno Facchini was the national coordinator in the 2007 PRIN; and 2010 PRIN, both the project was related to the improvements in gas turbine cooling systems for aeronautical and heavy-duty applications. .</p> <p>For the last twenty years, Prof. Facchini has participated to a relevant research activity at European level in the aeronautic engine field in collaboration with the most important industrial manufacturers, research centers and universities in Europe, within the 7th Framework Programme, Horizon 2020 and Clean Sky. He was responsible for the University of Florence of several important European research projects within 5th, 6th and 7th frameworks, The projects followed within 5th, 6th and 7th frameworks are: LOPOCOTEP (1999), INTELLECT D.M. (2004), AITEB2 (2005), NEWAC (2010), MAGPI (2010), KIAI (2011), TECC(2011), FIRST (2012), ERICKA (2012); FACTOR (2012); LEMCOTEC (2012); IMPACT-AE (2013); ENOVAL(2015); in the current framework H2020 he coordinates UNIFI activity in the SOPRANO (2016) and ACCENTO (2018) (Clean Sky) projects.</p> <p>All the listed EU projects are concerning safe, innovative and cleaner aeroengine developments and the activities of the research group coordinated by Prof. Facchini has been realized with numerical simulations and advanced experimental analysis in the field of combustion, blade cooling and secondary air system.</p> <p>Prof. Facchini is significantly involved in the technology transfer towards industries; with the own research group, during the last twenty years, he has developed the design tools and best practices for cooled vane/blade, cooled liners of gas turbines and secondary air system circuit, today used by main Italian companies as GE-AVIO, Ansaldo Energia and BHGE-Nuovo Pignone</p>
Digital skills	Good computer skills, starting from the common office automation software (MS Windows) up to tools for scientific computing such Fortran.

ADDITIONAL INFORMATION

- Publications Prof. Facchini is author of 298 papers, 79 of these were published in International Journals or books and 219 were presented, in main part, at international congresses.(H-index= 27, Citations= 3021 - Scopus source). <https://orcid.org/0000-0003-4489-4256> Below a selection of some relevant papers:
- 1) Da Soghe, R., Mazzei, L., Tarchi, L., Cocchi, L., Picchi, A., Facchini, B., Descamps, L., Girardeau, J., Simon, M. "Development of experimental and numerical methods for the analysis of active clearance control systems" (2021) J.I of Engineering for Gas Turbines and Power, 143 (2), DOI: 10.1115/1.4049354
 - 2) Bacci, T., Becchi, R., Picchi, A., Facchini, B. "Adiabatic effectiveness on high-pressure turbine nozzle guide vanes under realistic swirling conditions" (2019) J. of Turbomachinery, 141 (1), DOI: 10.1115/1.4041559
 - 3) Andreini, A., Becchi, R., Facchini, B., Picchi, A., Peschiulli, A. "The effect of effusion holes inclination angle on the adiabatic film cooling effectiveness in a three-sector gas turbine combustor rig with a realistic swirling flow" (2017) Int. J. of Thermal Sciences, 121, pp. 75-88. DOI: 10.1016/j.ijthermalsci.2017.07.003
 - 4) Koupper, C., Gicquel, L., Duchaine, F., Bacci, T., Facchini, B., Picchi, A., Tarchi, L., Bonneau, G. "Experimental and Numerical Calculation of Turbulent Timescales at the Exit of an Engine Representative Combustor Simulator" (2016) J.of Engineering for Gas Turbines and Power, 138 (2), DOI: 10.1115/1.4031262
 - 5) Caciolli, G., Facchini, B., Picchi, A., Tarchi, L. "Comparison between PSP and TLC steady state techniques for adiabatic effectiveness measurement on a multiperforated plate" (2013) Experimental Thermal and Fluid Science, 48, pp. 122-133. DOI: 0.1016/j.expthermflusci.2013.02.015