# CURRICULUM VITAE OF BIANCA MARIA VAGLIECO


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| Birth: | Place: Naples, Italy |
| Citizen: | Italian |
| Status: | Married |
| Affiliation: | Istituto di Scienze e Tecnologie per l'Energia e la Mobilità Sostenibili (STEMS) |
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## Present Positions

July 2023 Acting director of STEMS

## Formal Education

1983 Physics degree at University of Naples Federico II

## Positions Held

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|---|---|
| 2014-2020 | Responsible of research division Integrated Methodologies for Propulsion and Energy of Istituto Motori (IM)-CNR |
| 2013-2014 | Acting Director of Istituto Motori-CNR |
| 2008-2013 | Responsible of project "Rational Use of Energy in Transport" of the Department of Energy and Transport – CNR |
| 2006-2008 | Responsible of the research division"Non intrusive diagnostics to characterize processes in internal combustion engine" at Istituto Motori (IM- CNR) |
| 2001-present | Director of Research at IM-CNR |
| 1998-2001 | Senior Researcher at IM-CNR |
| 1988-1998 | Researcher at IM-CNR |
| 1983-1988 | Research Assistant at Dep. of Chemical Engineering Univ. of Naples Federico II : |

## Other Professional Activities

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| 2022-present | Member of the Advisor Board of the Centros Motores Termicos-University of Valencia |
| 2021-2023 | Member of Committee of STEMS |
| 2021 | Member of Selection Committee of projects of significant national interest of talian Ministry of University and Research |
| 2020 | Italian Responsible CapTech Governmental Expert (CGE) for CapTech Energy in European Defence Agency (EDA) |
| 2019 | Co-ordinator of group of experts on Sustainable Mobility for Italian National Research Program of Ministry of University and Research 2020-2026 |
| 2013-present | Scientific Technical Committee of Athena S.c.a.r.l. - High-tech Energy Environment District |
| 2013-2016 | Member of Governing Board of Competence Center on Transport for Campania Region scarl |
| 2009-2013 | Member of Scientific Committee of Competence Center on Transport for Campania Region scarl |
| 2010-2011 | Member of the Advisor Board of the Competence Center Combustion Processes-Lund, Sweden |
| 1998-2002 | Istituto Motori Scientific Committee |

## Teaching Assignments

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| 2013-present | Board of PhD courses on Energy Science and Engineering at Università degli Studi di Napoli Parthenope, Italy<br>PhD Courses on Energy Science and Engineering at Università degli Studi di Napoli Parthenope, Italy |
| 2005-2013 | Professor at Università degli studi della Campania Vanvitelli, Italy – Dept.Aerospace and Mechanical Engineering -Combustion course |
| 2010 | PhD Courses for Chemical Engineering at University of Naples Federico II, Italy |
| 2009 | International School on Hybrid and Electric Vehicles (ISHEV2009) University of Rome- La Sapienza,Italy |
| 2007-2013 | PhD Courses for Mechanical Engineering at University of Valencia, Spain |

## PHD Supervision

2004 – present (Co-)Supervisor, 14 PhD students

1990 - present Supervisor, 20 Post-Doc researchers

## Responsibility of projects

*International Projects*

**EU project:**

SUREAL-23 # H2020-GV-2016-INEA Project reference 724136: Understanding, Measuring and Regulating Sub-23 nm Particle Emissions from Direct Injection Engines Including Real Driving Conditions Engines (2016-2019)
DiePeR # H2020-GV-2016-INEA Project reference 723976: Diesel efficiency improvement with Particulates and emission Reduction (2016-2019)
REWARD #MG-3.1-2014 Project reference: 636380 REal World Advanced Technologies foR Diesel Engines (2015-18)
MIN-KNOCK ENK6-CT-2002-00643Control of Knock by Means of Simulation and Measurement in Gasoline Engine-(2003-2005)
PARTSIZE # NNE5-2001-00108 Control of Soot Particle Size by Means of Simulation and Measurement-(2002-2004)
PSICO-DEXA # GRD1-1999-11154 Particle Size and Composition Measurements for Diesel Exhaust Aftertreatment-(2000-2002)

Bilateral Project Italia-USA "Study on pollutant Formation in high Swirl Combustion System by Optical Diagnostics" Department of Mechanical Engineering-University of Kentucky (1997-2002)

*National Government Projects*

**Italian Ministry of University and Research:**

Spoke 12 Leader of MOST project- Sustainable Mobility Center-MUR Mission 4 "Education and Research" - Component 2 "Strengthening of research structures and creation of "national champions" of R&D Key Enabling Technologies" - Line 1.4 (2023-present)
PON01_02864 "Fuel Cells and Hybrid platforms of Polygeneration from fossil and renewable sources" (2012-2015).
PON01_01517 "Innovative Methodologies Development of Automotive Powertrains". (2012-2015)

PON01_01419 "Strategies and Measures HW and SW Side Engine, Transmission Vehicle and likely to lead to CO2 reduction for an Application of Light Commercial Vehicles (N1/M1)"(2012-2015)
FIRB-RBIPO6W2MA "Development of Fundamental Methodologies for The Reduction of Consumptions and Increase of Performances of High Performance Engines" (2007-2010)
FIRB-RBIP06YLMY "Fundamental Methodologies for Development of Two Wheels DI Engines with Low Fuel Consumption and Pollutant Emissions Fuelled by Gasoline And Gaseous Alternative Fuels" (2007-2010)

**Italian Ministry of Economic Development:**
AMICO "Automation and Monitoring Smart of Consumption" (2011-2014)
New System for Safety and Sustainable Mobility"(2009-2012)
FINALIZED PROJECT ON TRANSPORT 2 "Optical Characterization of Particulate Carbon in Diesel Engine" (1995-99)

**Campania Region (POR):**
POR FESR 2014/2020 Technological platform of "Sustainable and Safe Mobility" Borgo 4.0- Mobility- Towards Full Electric Vehicles With Minimum VDE (2020-23);
POR FESR 2014/2020 Design and construction of EGR solenoid valves with integrated digital diagnostics VEDO" (2019-20);
DAT / APP REGION Program Agreement - MIUR Project PON03PE_00159_2 "Green Powertrain - Methodological technological solutions for the energy efficiency of motor vehicles for sustainable collective mobility" (2014-18)

**Industry Grants**
**Research Center of FIAT** Characterization of methane combustion phenomena in indirect, direct mode and in Dual Fuel configuration in small spark ignition engine (2017)
**Fincantieri** High efficiency ship (2017-2019)
**ENI** New Fuels for Diesel and Spark Ignition Engine (2011-2012)
**GM Powertrain Europe** The effect of Biofuel on EURO 5 Engine (2008-2010)
**Piaggio SpA** Study on Anomalous Combustion in PFI and GDI Small Engine (2007-2009)
**ELASIS SpA** Analysis Of Combustion Process In-Cylinder Turbocharger SI Engine By Optical Techniques (2006)
**Ferrari GS SpA** Analysis of Ignition In High-Tech SI Engine by Spectroscopic Techniques (2004-2005)
Analysis of Turbulence Effects On Ignition In High-Tech SI Engine By Optical Techniques (2006-2007)
**ELDOR SpA** Analysis of Misfiring by Means of Optical Investigation in Gasoline Engine (2002-2003)
**LOMBARDINI srl** Control of Injection Strategy for Small Single Cylinder Diesel Engine In order to Reduce the emissions (2001-2002)
**Research Center of FIAT** Evaluation of Fuel Injection Strategies Control on NO Formation Inside Common Rail Diesel Engine (2001-2002)
**ST Microelectronics** Realization of Pressure Sensor in SiC for Innovative Control System of Diesel Engine (2000-2003)
Combustion Study on New Generation Internal Combustion Engine (2003-2013)
**Research Center of FIAT**Innovative Foam for Particulate Filter (1998-1999)

**Several governamental and industries projects as research staff is not reported**

## Awards and Recorgnition

2015 Grade Fellow Society Automotive Engineers, for her contribution to the enhancement of knowledge in the field of ICEs.
2006 CNR General Director for industrial and ministry grants realized
2004 Mention by CNR President for relevant research activity carried out in the years 2001-2003
Several awards as best paper at SAE and JSAE conference

## Other Professional Actvities

2002-2005 SAENA Treasurer
2005-2013 SAENA President
2002-2007 Local Advisor of the Associazione Tecnica dell'Automobile (Italian Technical Automobile Association)

## Reviewer and Rapporteur activities

Member of REPRISE: Register of Expert Peer Reviewers for Italian Scientific Evaluation; Italian Ministry of Education, University and Research_ FIRB Futuro in Ricerca 2012;Reviewer for Italian Ministry of Economic Development (MISE); for Italian Emilia Romagna Region (FESR); Research Project for Italian Fondazione Cassa di Risparmio di Trento e Rovereto;Bilateral Project CNR;MarTERA Joint Call 2016-17;France's National Reserach Agency–ANR;King Abdullah University of Science and Technology Saudi Arabia , Grant for Division of Research & Graduate Studies of United Arab Emirates University;Research Foundation-Flanders (FWO)

Scientific assessment of professor curricula for: University of Lund (Sweden):King Abdullah University of Science and Technology Saudi Arabia

**Chair and Organizer** of Int.Conference on Engines for Vehicle ICE (SAE Int. Conference) from 2007 to 2023 ($16^{th}$ edition)
**Session Chair of** SIA–Powertrain International Conference: Rouen ,France (2014,2016,2018, 2021)

- $CO_2$ Reduction for Transportation Systems Conference, Turin-Italy (2016,2018,2020,2024)
- $6^{th}$ Biannual Symposium Toward Clean Diesel Engine TCDE Ischia (June 20-22 2007)
- $10^{th}$ Int. Congress on Combustion by Products and their Health Effects (June 17-20 2007)

## Member of Scientific Committee of Conferences

European Conference ILASS, the Conference THIESEL, Colloquia & Co-Chair for the Mediterranean Combustion Symposium; COMODIA, $10^{th}$ Int. the Congress on Combustion by Products and their Health Effects, the International Symposium on Radiative Transfer"; the Computational Thermal Radiation in Participating Media Eurotherm Seminar 73, Mons; Member of Steering Committee Biannual Symposium "Toward Clean Diesel Engine"

## Member of Editorial Board of Journal and Reviewer

**Editorial Board of** Fuel, International journal of Engine Research, SAE International Journal of Engines, SAE International Journal of Fuels and Lubricants

**Summary of Research activity**

Bianca Maria Vaglieco, as Director of Research, oversees several engine laboratories. She is involved in several activities related to the experimental and theoretical study of the thermo-fluidynamic process in thermal engines with special regard to combustion diagnostics, aiming at improving conversion efficiency, with the reduction of fuel consumption and pollutant emissions for light duty transport, marine and stationary power generation applications. The main activity concerns in the experimental investigation of fundamental physical and chemical processes occurring in engines by means of non intrusive diagnostics such as innovative sensors and optical systems. She has developed advanced non intrusive optical diagnostics and innovative sensors for adaptive engine control. She is involved in several activities related to the experimental and thermal engines by non-conventional diagnostics, aiming at improving conversion efficiency for several applications. She is author of more than 400 papers including peer reviewers journal papers, book chapters and international conference and patents. She was invited to have several seminars, key notes and plenary lectures at national and international conferences.

Napoli 10 december 2023

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11.12.2023
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