

NOBILE MATTEO
CURRICULUM VITAE



PERSONAL INFORMATION

Name: **NOBILE MATTEO**
Address: 159, VIA DEL PODERE ROSA – 00137 – ROME - ITALY
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E-mail: **matt.nobile@gmail.com**
Nationality: Italian
Birth date: 1988/10/11

WORK EXPERIENCE

• 2015/11→

At: Johnson Matthey Emission Control Technologies
Proposal: Light Duty Diesel Aftertreatment Engineer
Ongoing Activities:

- Research and development of catalysts and Aftertreatment System configurations for major automotive customers (engine and vehicle testing, numerical modeling)
- Technical assistance for product integration and implementation

Occupation: Applications Engineer

• 2015/02 - 2015/11

At: Continental Emitec GmbH, Technische Universitat of Freiberg (Prof. C.Hasse), University of Rome "Tor Vergata"
Proposal: Multi-scale CFD modeling and design of Exhaust Particulate Filters
Activities:

- Microscale analysis of pressure drop and particle deposition in real and virtual porous media
- Multiscale analysis of filter operation with microscale correlations

Occupation: Visiting PhD student

• 2014/09 - 2014/12

At: Chalmers University of Technology (Prof. H.Nilsson), University of Rome "Tor Vergata"
Proposal: PhD course on OpenFOAM (www.tfd.chalmers.se/~hani/kurser/OS_CFD)
Activities: Lessons and presentation of the final project "Improvement of Lagrangian approach for multiphase flow", based on the implementation of new spray submodels (i.e. injection, evaporation, drag) in the lagrangian library
Occupation: Visiting PhD student

• 2014/01 - 2015/02

At: University of Rome "Tor Vergata"
Proposal: Modelling of Urea Injection for Selective Catalytic Reduction (SCR)
Activities:

- Implementation of lagrangian sub-models for urea injection and decomposition processes in OpenFOAM;
- 3D analysis of different Exhaust System configurations (i.e. geometry, injectors and mixers) for optimizing the NH3 distribution at SCR inlet.

Occupation: PhD student

• 2012/12 - 2013/12

At: University of Rome "Tor Vergata", Istituto Motori-CNR (Dr. M.V.Prati), Istituto per lo Studio dei Materiali Nanostrutturati-CNR (Dr. S.Kaciulis)

Proposal: Impact of biofuel use on Diesel engine emissions and Aftertreatment System operation
 Activities:

- Experimental characterization of engine performance and emissions, conversion efficiencies of the Diesel Oxidation Catalyst and Diesel Particulate Filter operation by varying fossil and biodiesel blends
- 1D modelling of the Aftertreatment system (DOC, DPF) in Matlab for supporting experimental results
- Chemical (TG, XPS and GC-MS) and morphological (XRD) characterization of Particulate Matter

 Occupation: PhD student

• 2012 /12 – 2013/08

At: University of Rome “Tor Vergata”
 Proposal: Modelling, implementation and experimental testing of an Energy-management control strategy for Plug-in Hybrid Electric Vehicles (PHEV)
 Activities:

- Experimental LiPO batteries testing and integration in the power electronics of a prototype PHEV
- Development, numerical modeling and experimental implementation of the Energy-management algorithm in a prototype PHEV
- Numerical comparison with alternative strategies based on optimal control theory (ECMS, Adaptive-ECMS, Heuristic)

 Occupation: PhD student

• 2010/02 – 2010/11

At: University of Rome “Tor Vergata”; MIVV SpA
 Proposal: Model based design of Diesel Exhaust Aftertreatment Systems
 Activities: Engine (DEUTZ “TCD2012-L4”) and Aftertreatment system (DOC, DPF) modelling in GTPower and Matlab in order to design the optimal ATS based on emissions regulation, economic constraints and the ATS impact on engine performance
 Occupation: Trainee

EDUCATION AND TRAINING

• Publications:

- S. Cordiner, V. Mulone, M. Nobile, V. Rocco: “Impact of Biodiesel Fuel on Engine Emissions and Aftertreatment System Operation” – Applied Energy, 2015
- S. Cordiner, V. Mulone, M. Nobile, V. Rocco: “Impact of Biodiesel Fuelling on Exhaust Aftertreatment Behavior” – Poster presented at “Diesel Sprays and Biodiesel Combustion Workshop”, 2013
- S. Cordiner, M. Feola, V. Mulone, M. Nobile, V. Rocco: “Diesel Engine Biofuelling: Effects of Ash on the behavior of the Diesel Particulate Filter” - Paper SAE n. 2013-24-0165 (“SAE 11th International Conference on Engines & Vehicles, 2013”)
- S. Cordiner, M. Galeotti, V. Mulone, M. Nobile, V. Rocco: “Trip-based SOC management for optimal operation of a Plugin Hybrid Electric Vehicle” – Applied Energy, 2015
- S. Cordiner, F. Mecocci, V. Mulone, M. Nobile: “Model Based Design Procedure of After Treatment System for Non-Road Diesel Engines” – Paper SAE n. 2011-24-0186

• 2012/11 - 2015/10

Institute: University of Rome “Tor Vergata”
 Position: PhD Student in Industrial Engineering (Energy and Environment section)
 Notes: Thesis: “Analysis and modelling of Particulate Matter filtration in Internal Combustion Engine Exhaust Aftertreatment Systems”
 Responsible for engine test bench activities and suppliers (AVL) relationship
 Reviewer for SAE (Society of Automotive Engineers) and Elsevier Journals
 Presentation of research activities at international conferences (ICAE2013, ICE2013, ICAE2014)
 Tutor and examiner in university courses (Fluid Machinery and Machinery)
 Supervisor of Bachelor and MSc thesis

• 2013/11/20-21

Organizers: Brunel University - UK

- Course title: Workshop on "Diesel Sprays and Biodiesel Combustion"
 Speakers: Dr. G.Bruneaux (IFP), Prof. M.Linne (Chalmers), Prof. R.Payri (CMT), Dr. C.Soteriou (Delphi Diesel), Dr. L.Pickett (Sandia) , Dr. T.Jacobs (Texas A&M), Prof. J.Krahl (HS Coburg), Prof. M.Lapuerta (UCLM), Dr. R.Cracknell (Shell)
- 2013/06/18
 Organizers: Italian Association of Metallurgy
 Course title: Workshop on "Surface analysis: main techniques and their application in metallurgy"
 Skills acquired: Basic theoretical and practical notions on the main techniques for surface analysis: X-ray Photoelectron Spectroscopy (XPS), Auger Spectroscopy (AES) and Secondary Ion Mass Spectroscopy (SIMS)
- 2013/01
 Qualification awarded: Italian state habilitation as Industrial engineer
- 2010/11 – 2012/10
 Institute: University of Rome "Tor Vergata"
 Qualification awarded: MSc in Mechanical Engineering with Honors (Italian grade on credits average: 29.3/30)
 Notes: Thesis: "Ash effect on the Diesel Particle Filter behaviour: numeric-experimental analysis" (tutors: Prof. Ing. S.Cordiner, Prof. Ing. V.Mulone; co-tutor: Ing. F.Mecocci).
 Winner of the "Best Master's Thesis Award 2011/2012" from SAE (Society of Automotive Engineers) - Italian Section
- 2007/09 – 2010/11
 Institute: University of Rome "Tor Vergata"
 Qualification awarded: Bachelor in Mechanical Engineering with Honors (Italian grade on credits average: 28.5/30)
 Notes: Thesis: "Design of exhaust gas aftertreatment systems for Off-road Diesel engines" (tutors: Prof. Ing. S.Cordiner, Prof. Ing. V.Mulone; co-tutor: Ing. F.Mecocci; in collaboration with "Mivv Exhaust System SpA")

PERSONAL SKILLS AND COMPETENCES

TECHNICAL SKILLS AND COMPETENCES

Computer and Numerical activities:

- OpenFOAM;
- Ansys Fluent;
- Ansys ICEM;
- Matlab/Simulink;
- GTPower;
- MS Office;
- Labview;
- Ansys Mechanical;
- Solidworks;
- Gambit;
- C++.

Experimental activities:

- CHNS Elemental analysis;
- Calorimetric measurement;
- Thermogravimetric analysis;
- Engine testing (AVL Puma);
- NO_x engine emissions measurement (AVL-AMA i60);
- PM engine emissions measurement (AVL-415S, FPS-4000, EEPS-3090).

SOCIAL AND ORGANISATIONAL SKILLS AND COMPETENCES

Team-working skills experienced during academic, sports (waterpolo, Masters-class swimming) and voluntary activities in a parish youth group (organization of fundraising, blood donation days, summer camps and guitar lessons).

MOTHER TONGUE:

ITALIAN

OTHER LANGUAGES:

- Reading: PROFICIENT
- Writing: PROFICIENT
- Spoken Interaction: PROFICIENT

- Reading: INTERMEDIATE
- Writing: INTERMEDIATE
- Spoken Interaction: ELEMENTARY

ENGLISH

PROFICIENT

PROFICIENT

PROFICIENT

GERMAN

INTERMEDIATE

INTERMEDIATE

ELEMENTARY

PERSONAL HOBBIES

Swimming, travelling, guitar playing, reading political-history books