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September 11th, 1973, Italian

Full, clean, European driving licence for cars and motorbikes

Marco Venturini-Autieri is a Mechanical Engineer, with Aerospace background, at ease in multi-disciplinary projects, keen on solving problems, creating useful solutions, and testing and validating them by applying Research methods based on sound physical theory. He holds a Ph.D., is member of the Institute of Physics of London, has worked for a new product-development project and has been a Research Associate at the University of Durham.

INTERESTS	INDUSTRIAL DESIGN, MECHANICAL DESIGN, PHOTOGRAPHY
Education	PH.D., B-SC.+M.SC. ("LAUREA"), HIGH-SCHOOL DIPLOMA
Work Experience	ACCELERATED-LIFE TESTS, FMECA, DAMAGES IN COMPOSITES, ACOUSTIC EMISSION NDT, PRODUCT DEVELOPMENT, TECHNICAL ASSET MANAGEMENT, EXPERIMENTAL MECHANICS
Skills	R&D, ENGINEERING RELIABILITY, SOLIDWORKS & SOLID EDGE, MULTIDISCIPLINARY OVERVIEW, MACHINE DESIGN, MATLAB, FLUID MECHANICS, PHYSICAL MODELING, KNOWLEDGE TRANSFER, THERMODYNAMICS, PHOTOSHOP, WORDPRESS, COMPUTER LITERACY, TECHNICAL WRITING & PRESENTING, LATEX
Languages	ITALIAN (MOTHER TONGUE), ENGLISH (FLUENT), FRENCH (BASIC)

## FULL-TIME EMPLOYMENT

*Dec.'09–Nov.'11* RESEARCH ASSOCIATE, UNIVERSITY OF DURHAM

DU is one of the UK's elite universities for Research and Teaching. National Grid is an international electricity and gas company and one of the largest investor-owned energy companies in the world.

**Objectives:** • Helping National Grid to manage their ageing asset of electromechanical protective relays • Assessing the ageing characteristics and the relevant failure modes

**Approach:** • Analytical (replacement strategy) • Experimental (Accelerated-Life Testing, electrical measurements)

**Tasks managed:** • **Design** and manufacture of environmental gas chamber • Design and execution of investigative experimental **tests** • Coordination of testing and manufacturing teams within DU • FMECA / FMEA to link failures and failure modes of the electromechanical relays

**Results:** • Optimal replacement/maintenance **strategy** for the technical asset was formulated • Critical failure modes were identified and described

*July'07–May'09* R&D ENGINEER, PAYE STONEMASONRY & RESTORATION LTD. AND LONDON SOUTH BANK UNIVERSITY

PAYE is a premier company dedicated to repair, clean and conserve historic buildings.

**Objectives:** • Development of an ice-blasting machine for the eco-friendly cleaning of historic masonry • Consultancy for ISO 14000 environmental standard

**Tasks managed:** • Design • Purchasing • Prototyping • Testing

**Disciplines involved:** • Gasdynamics (transport system and nozzle) • Machine design (ice crushing & overall structure) • Refrigeration & thermodynamics (ice making) • I.P. (designing around competitor's patents)

*Nov.'03–Oct.'06* RESEARCH STUDENT, SCHOOL OF ENGINEERING SCIENCES, UNIVERSITY OF SOUTHAMPTON

I collaborated with BAE Systems, that sponsored my research.

**Objective:** • To assess the suitability of Acoustic Emission waveform analysis for damage detection in composite structures

**Tasks managed:** • Manufacture of composite specimens • Design and execution of tests • Acquisition of A.E. data • Analysis of waveforms (Matlab)

**Disciplines involved:** • Signal processing • Experimental laboratory techniques • NDT&E (non-destructive testing techniques)

## EDUCATION

July 2007 **Ph.D.**, SCHOOL OF ENGINEERING SCIENCES, UNIVERSITY OF SOUTHAMPTON (SUPERVISOR: PROF JANICE BARTON) My thesis (“*Acoustic emission characterisation of damage in CFRP composites: Use of a commercially available A.E. kit to discern damage signatures*”) was published by VDM Verlag (ISBN 978-3639194258)

June 2003 **B.Sc. & M.Sc.**,<sup>1</sup> AEROSPACE ENGINEERING (GRADE: 108/110), UNIVERSITÀ DI PISA, ITALY

**Final-year project:** *Role of cavitation on rotordynamic whirl forces in axial inducers and centrifugal impellers.* The parametric mathematical model, compared with available experimental data from NASA indicated a correct evaluation of the rotordynamic forces and their destabilizing effects on the whirl motion, helping in understanding some of the most critical and destructive instabilities in whirling and cavitating **turbopumps**.

**Main skills acquired:** • Aero- and Gas-dynamics • Applied Thermodynamics • Structures • Machine design • Pumps and turbines • Aircraft engines • Aircraft design • Space propulsion • Numerical methods • Quality systems • Flight mechanics • “*There is nothing more practical than a good theory,*” Kurt Lewin

July 1992 DIPLOMA DI **Maturità Scientifica** (GRADE: 60/60 — FULL MARK), “ISTITUTO SALESIANO SAN GIOVANNI BOSCO” (SCIENCE HIGH-SCHOOL<sup>2</sup>), TARANTO, ITALY In 1992 I was awarded the prize for the best student in my high-school.

## ESTEEM INDICATORS

MInstP I am a *Member of the Institute of Physics*, London

July 2003 Università di Pisa: I passed the exam necessary to become Chartered Engineer in Italy

## FURTHER EXPERIENCE

2006– **Photographer, self-employed** — Creation and sale of stock photographs and a personal website

2002–2003 Thesis work — I developed my Master’s thesis working in collaboration with Centrosazio, Pisa, Italy, an Italian aerospace research company (now Alta Space)

1997–1999 Aerospace Engineering Dept., Università di Pisa — I was elected, and worked as, representative of the Students at the Aerospace Engineering Board

1992–1999 System Operator of a public amateur Bulletin Board System linked to the Fidonet geographical network. I organised events and meetings with like-minded people

## PAPERS

(with *J. M. Dulieu-Barton*) INITIAL STUDIES FOR AE CHARACTERISATION OF DAMAGE IN COMPOSITE MATERIALS, *Advanced Materials Research*, Vols. 13–14 (2006) pp. 273–278.

(with *L. d’Agostino*) ROTORDYNAMIC FLUID FORCES ON WHIRLING AND CAVITATING RADIAL IMPELLERS, *in Proc. Fifth International Symposium on Cavitation (cav2003)*, Osaka, Japan, Nov 2003.

(with *L. d’Agostino*) THREE-DIMENSIONAL ANALYSIS OF ROTORDYNAMIC FLUID FORCES ON WHIRLING AND CAVITATING FINITE-LENGTH INDUCERS, *in Proc. The 9th of International Symposium on Transport Phenomena and Dynamics of Rotating Machinery*, Honolulu, Hawaii, Feb 2002

## OTHER SKILLS

*Photography* Passionate and knowledgeable of film and digital photography, skilled in image processing and editing; good knowledge of image composition

*Soft Skills* • Good physical intuition • Effective in presenting complex concepts in an understandable way • Proficient in generating ideas • Logical thinker, attentive to detail • Systematic, structured and targeted to gather facts, analyse a situation in a reasoned way, clearly define the problem, and proceed accordingly with a purpose in mind • Business oriented • Confident in working independently

*Management* Knowledge Transfer Partnership: project management (London South Bank University, 2007–2008)

<sup>1</sup>An Italian “Laurea” consists of three years of foundation courses (similar to a B.Sc.) plus two years of specialization (equivalent to an M.Sc.), includes a final dissertation, and gives the “Dott. Ing.” title. UNESCO classification ISCED 5.

<sup>2</sup>UNESCO classification ISCED 3