



Prof. Guido BELFORTE

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COMPETENZE

Automazione e robotica: componenti e sistemi automatici pneumatici; dispositivi robotizzati; attrito e usura, guarnizioni e tenute; supporti ad aria compressa; applicazione di sistemi automatici e pneumatici ad apparecchiature tessili, agricole, ferroviarie, dispositivi per assistenza e riabilitazione, ecc.

CURRICULUM VITAE E PROFILO PROFESSIONALE

Born in Torino on February 24, 1942.

University Education

1960-1965 student at Technical University Politecnico di Torino, in the School of Mechanical Engineering. Received his degree of Doctor in Mechanical Engineering from the Politecnico di Torino on January 31, 1966. The Laurea Thesis was: Comportamento dinamico di una galleria del vento subsonica (Dynamic behaviour of a subsonic wind tunnel).

Educational Activities

Volunteer teaching assistant in Applied Mechanics from February 1, 1966 to February 15, 1967. Contract teaching assistant from February 16, 1967 to January 15, 1968, and regular teaching assistant in Applied Mechanics from January 16, 1968 to February 28, 1976.

Full professor of Applied Mechanics since March 1, 1976.

Lecturer of Machine Mechanics during academic years 1970/71 through 1974/75.

Lecturer of Fluid Automation and Fluidics from academic year 1975/76. Actually lecturer of Fluid Automation and Pneumatic Systems.

From academic year 1989/90 to 1991/92, he was responsible for the course in Textile Mechanics at the Politecnico di Torino School of Textile Technologies in Biella, followed by the course in Mechanics Applied to Textile Machinery, offered as part of the university diploma program in Chemical Engineering. Actually lecturer of Textile Machinery Mechanics at the School of Textile Engineering in Biella.

Lecturer of the Doctorate course of Principles of Fluidics in the Doctorate School of Politecnico di Torino.

International Teaching activities

Member of the international staff of professors for the European Master in Advanced Textile Engineering (E-Team) and lecturer of the course Advanced air textile processes.

Visiting professor: in September 2005 at the Heriot Watt University in Galashiels (Scotland); in September 2007 at the University of Mulhouse (France); in September 2008 at the University of Zagreb (Croatia).

Academic activities

Chairman of the Mechanical Engineering degree Program Committee from academic year 1987/88 to academic year 1992/93.

Deputy Director of the Politecnico di Torino Department of Mechanics from December 1983 to September 1995.

Director of the Politecnico di Torino Department of Mechanics from October 1995 to September 2003.

Coordinator for the University Diploma Program in Mechanical Engineering at the Torino School of Engineering from academic year 1994/95 to 1998/99. In the same years, he was Director of the Politecnico di Torino CAMPUS Project and, subsequently, Quality Supervisor for CAMPUS university diploma programs. He was Assistant Dean of the Politecnico di Torino 1st School of Engineering, where he was responsible for organizing new educational programs, from academic year 1999/2000 to academic year 2002/2003. In the same years he was member of the Politecnico di Torino Administrative Council.

President of CETEM (Centre for distance learning and multimedia services) of Politecnico di Torino from October 2003 to October 2006.

President of GMA (Italian Group of Mechanics for Machines and Mechanical Systems). The group includes about 200 members in 32 different Italian Universities (associated and full professor and researchers) from November 1st 2005.

Activities in Scientific and Engineering Societies

Prof. Belforte was chairman of the Italian State Engineering Examination Board at the Politecnico di Torino for the 1981 session.

A member of the UNI (Italian National Standards Body) Fluid Power Systems Committee, he is Vice President of the Committee.

Prof. Belforte is a member of SIRI, the Italian Society of Robotics and Automation, a member of ANIPLA (Italian Society for Automation), a member of STLE (Society of Tribologists and Lubrication Engineers – USA), and an honorary member of AIPI, the Italian Association of Industrial Designers.

Scientific activities

He was a member of the Preliminary Assessment Committee for the Italian National Research Council (CNR) Robotics Project. He was also a member of the CNR Robotics Project Management Committee, dealing with sub-project 1 (Robot structure) during the years 1992/1994.

He has participated in the scientific committees for a large number of international conferences.

He has been an invited lecturer at the following international meetings: the YUROB 90 Conference in Rijeka (Yugoslavia) in 1990; the 3rd International Symposium on Measurement and Control in Robotics in Torino (Italia) in 1993; the 3rd International Symposium on Fluid Power in Yokohama (Japan) in 1996; the 6th International Workshop on Robotics in Alpe-Adria-Danube Region (RAAD 97) in Cassino (Italia) in 1997; the XIII Congresso Nacional de Ingenieria

Mecanica in Barcelona (Spain) in 1998; the 6th International Symposium on Fluid Power, Measurement and Visualization (FLUCOME 2000) in Sherbrooke (Canada) in 2000; the 7th International Conference on Mechatronics and Precision Engineering in Bucharest (Romania) in 2004; the 3rd FPNI – PhD Symposium on Fluid Power in Terrassa (Spain) in 2004.

He received the Best paper Award at RAAD 99 (8th International Workshop on Robotics in Alpe-Adria-Danube Region) in Munchen (Germany).

He received the title of Doctor Honoris Causa from Technical University Politehnica of Bucarest (July 2006).

Scientific research activities

He is the holder of more than fifteen patents for artificial respirators and biomedical devices, flow meters of various kinds, natural gas safety devices, pneumatic protection systems for laser optics, seals for pneumatic components, innovative devices for textile raising machines, hairless and texturing pneumatic systems for textile machines.

National coordinator for a number of past or current research projects for the Italian Ministry of Education (and later for MURST and MIUR), the Italian National Research Council (CNR), and the Italian Space Agency (ASI).

In his research work, Prof. Belforte has addressed the following areas:

- Fluidics, investigating new elements sensors and various types of application.
- Pneumatic and hydraulic systems, investigating original components, modeling and identifying elements and systems, and developing laboratory testing methods and applications.
- Biomechanics, with particular reference to studies of artificial respirators, prostheses, heart valves, active orthosis.
- Tribology, friction, and investigations of sealing members, with reference to numerical modeling and experimental testing for seals, study of new seals, study of tests methodology for life and reliability tests for pneumatic cylinders, measurement and modeling of friction forces in cylinders.
- Analog and digital automation techniques for mechanical systems.
- Robotics, investigating adaptive sensor-equipped grippers and hands, mechanical architectures, drives, use of innovative materials, applications, mobile robots with wheels, legs and vacuum cups.
- Pneumatic and electromechanical actuation and positioning devices.
- Active and passive pneumatic suspension systems for railway and motor vehicles.
- Devices for textile machinery, with particular reference to pneumatic equipments.
- Air bearings for high rotating speeds.
- Pneumatic and mechatronic systems for agriculture.

Prof. Belforte has developed experimental testing techniques for pneumatic devices and has produced a large number of designs for experimental and laboratory equipment.

He is the author of over 400 scientific papers, as well as twelve books dealing with applied mechanics and fluid automation.

Editorial Activities

Scientific editor of the International Journal of Mechanics and Control.

Member of the Scientific Advisory Council of the technical magazine Oleodinamica Pneumatica.

Reviewer of the International Journal of Fluid Power.

Industrial activities

Prof. Belforte has administered a large number of past and current research contracts involving major Italian industries. The main field of activities are:

- o Pneumatic components and systems (Festo KG, Camozzi, Corcos, Metal Work, Matrix,..)
- o Train, car, ship (Azimut, Fiat Ferroviaria, Faiveley, Iveco, Maff, Merlo, Rolfo, SKF,..)
- o Production plant (Comau, Mager, Salvagnini, Sandretto,..)
- o Textile (Brazzoli, Crosta, Promatech, Savio macchine tessili, Sinterama,..)
- o Domestic appliances (Whirlpool, Zanussi Electrolux,..)

Privacy

Legge sulla privacy Informativa ai sensi del D. Legge 196/2003

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