

Prof. SIMONE CINQUEMANI

Associate Professor at Dept. Mechanical Engineering, Politecnico di Milano

CAREER MILESTONES

2020	National Qualification (ASN) for the role of Full Professor in the SSD ING-IND-13 (09/A2) Applied Mechanics
2019 – current	Associate Professor at the Department of Mechanics, Politecnico di Milano, Italy
2008 – 2019	Assistant Professor at the Department of Mechanics, Politecnico di Milano, Italy
2008	Post-doctoral fellow at the Department of Mechanics, Politecnico di Milano, Italy.
2005-2008	Ph.D. candidate at the Department of Mechanics, Politecnico di Milano, Italy
2005	Engineering qualification - abilitazione all'esercizio della professione di Ingegnere

RESEARCH AREAS

Author of more than 160 scientific publications (41 papers on international journals indexed on SCOPUS/ISI databases, 116 proceedings of international conferences, 3 book chapters), H-index = 15, 785 citations.

Author of 19 patents related to research activities in the field of vibrations.

Simone Cinquemani's main research activities are carried out in the field of applied mechanics and mechatronics. Most recent are related to:

- Functional mechanical design of automatic machines. In the field of industrial automation his research focuses on the analysis and synthesis of automatic machines especially regarding the complex mechanisms such as parallel kinematic manipulators, space robots, and advanced industrial machinery. Most of the activities have been carried out together with companies working in the field of industrial automation and packaging.
- Design and development of smart actuators. Research activities exploit functionalities of innovative smart materials (piezoelectric, magnetostrictive, shape memory alloys, electroactive polymers) to develop high power density micro actuators. Studies have been done to enhance performance in terms of exertable forces, stroke and bandwidth.
- Development of new technologies for sensing. The research is focused on innovative sensing techniques to have a distributed knowledge of the dynamics of large structures. The research is focused on cutting edge technologies embeddable in composite structures as those based on optical sensors, inverse piezoelectric and magnetostrictive effect as well as tunnelling effect.
- Active control of structures. The interest concerns the development of control algorithms for vibration suppression in large structures through the integration of

sensors and actuators. Algorithms are mainly based on modal approach (Independent Modal Space, Resonant, etc.).

TEACHING

Design of Food Processing Machines, Functional Mechanical Design, Applied Mechanics to Machinery, Laboratory of mechatronics, Dynamics of Machines, Control and actuating devices for mechanical systems

RESEARCH PROJECTS FUNDED

Simone Cinquemani has been and is currently involved in scientific projects funded by public institutions. Most recent research projects funded are: "Shape-Memory-Alloy Meta-Composites" (0.6 M€, funded by Office of Naval researches-USA); "STIMA - Strutture Ibride composito-metalliche intelligenti per applicazioni nei settori della Meccanica e dell'Aerospazio" (1.1 M€, funded by Regione Lombardia); "Sistemi navali di nuova generazione", (0.75 M€, funded by MISE); "TOTAL EFFICIENCY 4.0" (0.5 M€, funded by Regione Lombardia).

Research activities in the mentioned field have been carried out, and are still in progress, with private companies as Whirlpool, CIMA, Ferrari, CIFA, Pirelli, ENI, ENEL, Fincantieri, Leonardo Helicopters, ASI, GDM, RFI Ferrovie dello Stato and more.

INTERNATIONAL COOPERATION PARTNERS

- Active Structures Laboratory, Université Libre de Bruxelles (Belgium)
- Department of Mechanical Engineering, Purdue University (Indiana – USA)
- School of Mechanical Engineering, Xi'an Jiaotong University - XJTU (China)
- Aerospace Engineering school at Georgia Tech (Georgia - USA)

EDITORIAL AND REVIEWER ACTIVITY

- Associate Editor of journals "Shock and Vibration" and "Mathematical Problems in Engineering"
- Review activity for: Mechatronics, Sensors & Actuators A: Physical, Mechanism and Machine Theory, Smart Materials and Structures, IEEE Transaction on Education, Journal of vibration and Control, IEEE Transaction on Mechatronics, Journal of Sound and Vibration, Journal of Vibration and Acoustics.
- Evaluator of national (PRIN 2016) and international research projects (FP7, H2020).
- Track chair on international conference (ESDA from 2012 to 2014, SPIE/NDE from 2013 to 2018)

MEMBERSHIPS

- ASME-American Society of Mechanical Engineers- Professional Member since 2012
- IEEE - Institute of Electrical and Electronic Engineers since 2014
- IfToMM Italy – International Federation for the Promotion of Mechanism and Machine Science, since 2015

- Member of the “Gruppo Tecnologico Integrato - 5° Reparto - Innovazione Tecnologica del Segretariato Generale della Difesa”
- Member of the expert reviewers’ board of the “Valle d’Aosta” region for high technology projects, since 2016.
- Member of the expert reviewers’ board of the “Friuli Venezia Giulia” region for maritime technologies, since 2016.

I expressly authorize the processing of data according to the Law (675/96).

24th December 2021

A handwritten signature in black ink, appearing to read "Sme Cupo", written over a faint, dotted grid background.