

Giovanna A. Fargione

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Giovanna Fargione, graduated in Electrotechnical Engineering (Address Industrial Automation) at the Faculty of Engineering of Catania. He received his PhD in Structural Mechanics in 1998. Assistant Professor in the SSD "Mechanical Design and Construction of ING-IND 14 Machines", at the Department of Industrial Engineering of the University of Catania from 01.10.2001. Associate Professor in the SSD "Mechanical Design and Construction of ING-IND 14 Machines", at the Department of Industrial Engineering of the University of Catania from 01.10.2015. He currently holds the position of President of the Master's Degree Course "Chemical Engineering for the Industrial Sustainability".

Applied in the use of the numerical-experimental methods of structural material analysis, in the introduction of artificial intelligence tools for the enhancement of mechanical design tools such as CNN Soft Computing and genetic algorithms, in functional analysis and in the optimization of mechanical applications within mechatronics, in integrated product design, has developed a particular interest in the themes of characterization materials in particular by working on the Thermographic method applied to fatigue. She has dedicated herself to engineering applications, the Integration of Design for Manufacture and Manufacture Assembly (DFMA) and DFS (Design for Service) techniques in Product Design, and Product Design for Product Requirements Environment), with specific reference to the issues related to life cycle simulation, design for assembly and disassembly, structured methods for optimal material selection, treating these issues in close relationship with the assumptions and tools of traditional mechanical design. Selection of materials. Study of strategies for the control of sustainability in industrial plants.

In relation to these fields of research has published more than 140 articles on, acts of conferences, and national and international journals.

Results in technology transfer

International Patent:European Patent Office. Number 01830233.1-1264 on 06.11.01

Owner of STMicroelectronicsS.r.l.

Authors: Fargione G.; Caponetto R.; Diamond O.; Tringali D.

"Method and apparatus for controlling a vehicle suspension system based on sky hook approach".

Research themes developed

- Mechanical characterization of materials
- Mechatronics
- Non-Destructive Controls
- Applications of image processing and soft-computing techniques within the mechanical design
- Mechanical control systems (active safety)
- Product architecture design (Material selection; DFX; Design criteria)
- Mechanical design in industrial plants
- Green Design for sustainability applied to industrial plants

Collaborations with national companies and entities

From 2005 to today she collaborated with Erg Power, Erg Med, ENI, Ponterosso Engineering, PPC, SASOL spa, Sonatrach and Isab on issues related to the design of industrial plants.

Since 2022 as yet she has been working with Sasol, a plant located in Augusta, on design issues aimed at the sustainability of industrial plants, for the Hydra Valley project for Decarbonization.

Research collaborations with foreign countries.

- In 2013 and 2014 she collaborated with the Berkeley-based research organization "Molecular Foundry (TMF)" with the research project: "An Analysis of the Molecular Foundry's Industrial Collaborations: Recommendations for Program Enhancements and Changes". The same project resulted in scientific work being published.

- Since 2013, She has collaborated with Professor Li [H.SHU](#) of the University of Toronto on "Creativity in Conceptual Design by Biomimetic approach". The same project resulted in scientific work being published.

Activities in scientific publishing

Reviewer per ASME per le riviste Journal of Fatigue e per Mechatronics

Reviewer per i convegni Internazionali SCI2001 SCI2002 SCI2003 SCI2004 SCI2005 SCI2006 SCI2007 SCI2008 SCI2011 SC2014 (The World Multi-conference on Systemics, Cybernetics and Informatics, Orlando, Florida, USA).

Reviewer per la rivista Mechatronics ASMEE/IEEE.

Reviewer per Intel. Manufacturing Springer Science e per ASME Journals Manufacturing Science and Engineering.

Reviewer e per Mathematical Problems in Engineering, Special Issue: Theory and Applications of Fractional Order Systems, HINDAWI, ISSN: 1024-123X

Reviewer for international magazines Computer-Aided Design (Elsevier), Computers & Industrial Engineering(Elsevier).

Impact of scientific production

Scopus database from ottobre 2024 revelation

- • Total number of citations: 620
- • h-index: 9