

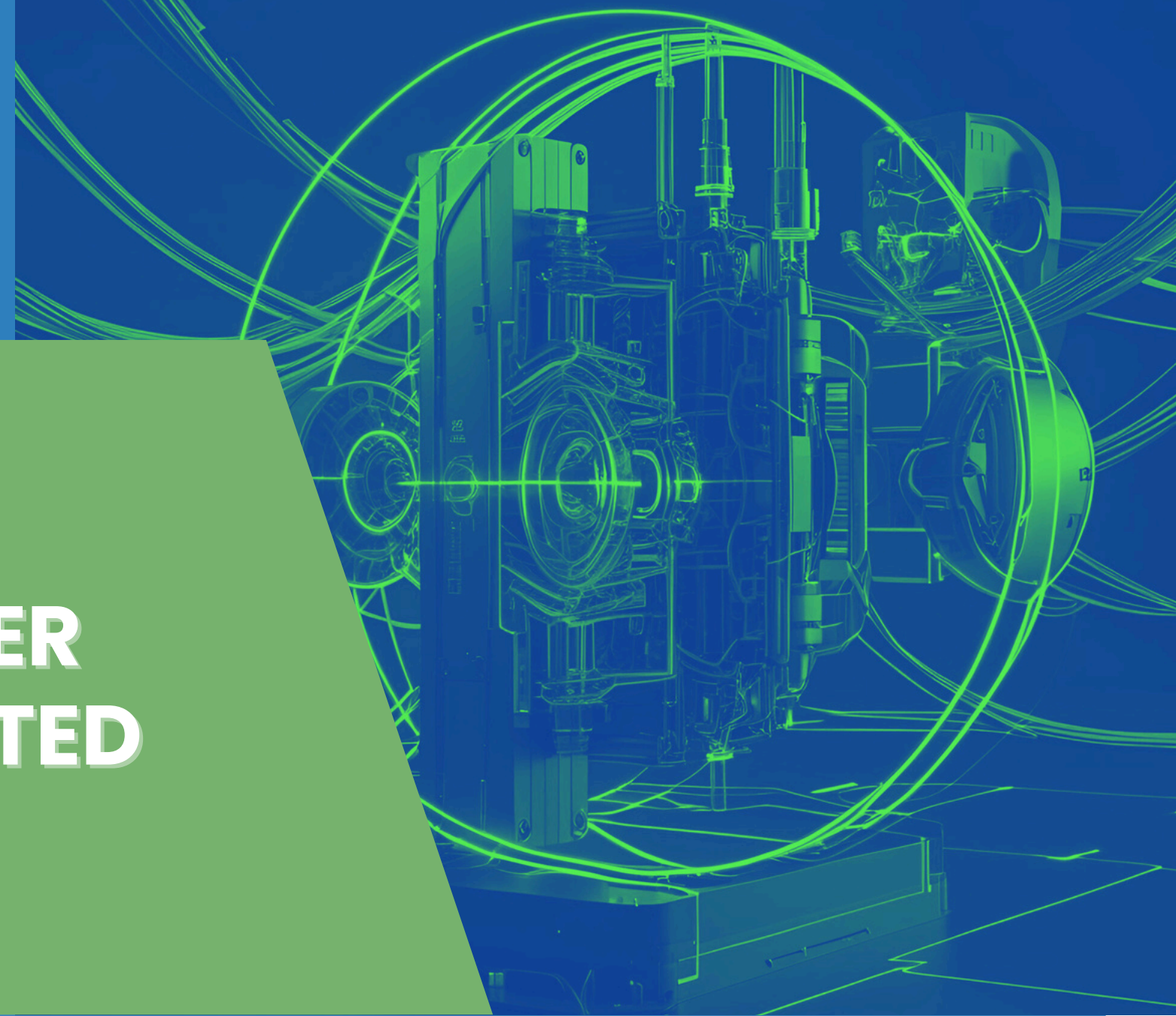


Politecnico  
di Torino



DIMEAS

Dipartimento  
di Ingegneria Meccanica  
e Aerospaziale



## DIMEAS SEMINAR

# ENABLING VIBRATION CONTROL THROUGH POWER ACTUATORS: AN INTEGRATED DESIGN APPROACH

## SPEAKER



### Renato Galluzzi

Research Professor,  
Tecnologico de  
Monterrey



**Wednesday 23 July 2025  
at 9:00 a.m.**



**Aula 9B  
Politecnico di Torino**

## PROGRAM

### Abstract

This seminar delves into the design principles of actuators aimed at achieving motion and force control across a variety of engineering applications. Emphasizing generality and adaptability, multiple actuation schemes are shown. These application-specific solutions are tailored to meet diverse operational requirements, including force output, speed, bandwidth, and geometric constraints. The discussed actuator systems involve a high degree of interaction between the involved physical domains. Mechanical, hydraulic, electrical and control subsystems must be dealt with in a multidisciplinary context to fulfill target specifications at a system level. To illustrate these concepts in practice, the seminar features two case studies from the automotive industry, focusing on the implementation of electrohydrostatic and electromechanical actuators as suspension shock absorbers. These applications highlight the significance of power actuators in the current electrification trend of the automotive sector.

### BIO

Dr. Renato Galluzzi is a Research Professor at Tecnológico de Monterrey in Mexico City, Mexico. He received his B.Sc. and M.Sc. degrees in 2008 and 2010, respectively. He earned a Ph.D. degree in Mechatronics from Politecnico di Torino in 2014. Since then, he has been an active collaborator of the Mechatronics Laboratory from the same institution. Dr. Galluzzi's research interests include vibration control and damping, actuators, rotating machinery and levitation systems through active and passive means. In 2023, he was appointed as a member of the National Research Fellows System Level 1 (SNII-1), SECIHTI, Mexico, as well as a Senior Member in IEEE. Dr. Galluzzi is a regular lecturer at Tecnológico de Monterrey and Politecnico di Torino, covering courses related to modelling and simulation of mechatronic systems, powertrain components for electric vehicles and vehicle dynamics.