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SENSORS AND ACTUATORS FOR AEROSPACE APPLICATIONS

Sensors and actuators are important for a variety of applications, such as control systems, robotics, mechatronic systems, biomedical devices, and aerospace. This seminar covers the fundamental physical principles, characteristics, and applications for various types of sensors and actuators including thermal, mechanical, electrical, electromechanical, and optical. After an introductory discussion on sensors and actuators, the focus will be on aerospace applications, where selected examples will be analyzed.

Learning Objectives:

- Introduction to sensors
- Sensors' characteristics
- Physical principle of sensors
- Analysis of different sensors (e.g. piezoelectric, indictive, capacitive, optical, etc.)
- Actuators
- Aerospace applications: case studies

Seminar Learning Outcome

- Be able to recognize and calculate sensors' characteristics for different sensors such as pressure, temperature, strain, level sensors, etc.
- Understand fundamental physics and constitutive laws for several common transducer types including electromagnetic, piezoelectric, and thermoelectric.
- Be able to apply and use sensing physics to design and analyze sensors and actuators.

Target audience

Undergrad and grands students are welcomed.
Dates and time:

- 12 September 2023, 15:00 to 18:00

Registration and Contacts

Course Code: 20230912
This course is part of the 2023 institutional activity for AIDAA members. The registration requires the purchase of one of the packages described here https://www.aidaa.it/package-list/, and the completion of the online form available on AIDAA webpage.

Course platform: Webex, a link will be sent via email as the registration is complete.
At the end of each course, attendance certificates will be sent to participants via email.

For further info, please, contact academy@aidaa.it

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Speaker

Dr. Maurizio Manzo is an Assistant Professor at the Department of Mechanical Engineering at the University of North Texas (UNT) and the director of the Photonics Micro-Devices Fabrication Laboratory. Dr. Manzo got his Ph.D. from Southern Methodist University (SMU), Texas, in 2015, and both bachelor and master's degrees in Aerospace Engineering, respectively in 2009 and 2011, from Italy. Dr. Manzo's research interests are in biomedical micro-devices, optics/photonics-based processes for various engineering applications, and autonomous systems. He has authored 24 referred journal papers, has 1 US utility patent, 1 US provisional patent, and 17 referred conference proceedings. He is a member of the American Optical Society (OSA), the American Society of Mechanical Engineering (ASME), and the American Society for Engineering Education (ASEE).