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## **Supervisor Expression of Interest MSCA - Marie Skłodowska Curie Action - (PF) Postdoctoral Fellowship 2024**

**Supervisor name: Stefano Manzoni**

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**Link “Pagina docente”:** [Link](#)

**Department Name: Mechanical Engineering**

**Research topic:**

**MSCA-PF Research Area Panels:**

- ECO\_Economic Sciences
- X ENG\_Information Science and Engineering
- ENV\_Environmental and Geosciences
- LIF\_Life Sciences
- MAT\_Mathematics
- PHY\_Physics
- SOC\_Social Sciences and Humanities
- CHE\_Chemistry

**Brief description of the Department and Research Group (including URL if applicable):**

**The department of Mechanical engineering is one of the biggest of Politecnico di Milano. One of its main strengths is the availability of large and well-equipped labs. The research group is currently composed by an associate professor, an assistant professor and two PhD students. The main research activities are related to system dynamics, with special focus on vibration control (e.g., [1,2,3,4]), system identification (e.g., [5,6]) and structural monitoring (e.g., [7]). In the context of these research fields, current research is focused on the exploitation of the special features of smart materials. Examples of projects performed in these fields are InMAR (EU FP6) and Manoeuvres (EU FP7).**

**TITLE of the project: Vibration control and system monitoring through smart materials**

**Brief project description: The project is expected to be in the field of smart-structures. Particularly, the focus of the project is the design and development of**



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**low-cost and energy-efficient innovative approaches for either vibration control or structural monitoring using smart-materials. Low-cost and energy efficiency are achieved by properly exploiting the special features of smart materials/systems such as, but not limited to, piezoelectric materials, shape memory alloys, magneto-strictive materials, electro-magnetic devices, magneto-rheological materials. It is also welcome to consider innovative materials such as nanotubes or soft materials. The coupling of the special features of smart materials with non-linear vibration control/monitoring systems is welcome in order to improve the performances and the reliability of the developed devices.**