Supervisor Expression of Interest
MSCA - Marie Sklodowska 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
- 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
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.