



POLITECNICO
MILANO 1863

DIPARTIMENTO DI
INGEGNERIA GESTIONALE

DIG PhD scholarship

Title	The role of industrial maintenance and asset lifecycle management for sustainable manufacturing
Theme	<p>Manufacturing systems directly impact the environment and society and the management of assets along their lifecycle has become a major lever to help industries contributing toward economic, environmental, and social sustainability performance. Asset Management (AM) is an innovative paradigm for manufacturing systems, bringing companies to focus on physical assets (production plants and equipment) as relevant asset as financial, human, information, and intangible assets. AM is defined as “the coordinated activities of an organization to realize value from assets” (ISO 55000:2014(E), 2014). Hence, it integrates traditional operations viewpoints – based on the foundation of production and maintenance management – with topics leading to a major focus on a long-term and integrated strategic perspective. Under this viewpoint, Maintenance is one of the fundamental asset-related activities during the lifecycle of the assets. Maintenance strategies should be informed by the AM strategy with the final objective of generating value from assets and maintenance planning and execution should also be managed in line with the AM paradigm, in an integrated way.</p> <p>Within this paradigm, this research project aims to foster innovative approaches and methodologies for maintenance and asset lifecycle management towards sustainable manufacturing systems. In fact, the call for sustainability asks for an entirely new attitude to systems design, maintenance and operations which entails long-term orientation for extended assets lifecycles and for value-generation.</p> <p>To this regard, the research focuses on the role of asset lifecycle management as a cornerstone for the development, coordination and control of various activities undertaken on assets, including maintenance, to support the strategies for sustainability with concrete operational means. The final objective is to contribute exploring maintenance and asset lifecycle management practices for sustainability, building on advanced management methodologies, digital technologies and new management concepts oriented to balancing lifecycle risks, performance and costs.</p>
DIG professors involved	Irene Roda, Marco Macchi, Alessandro Pozzetti
International collaborations	University of Cambridge (UK); West Virginia University (USA); University of Sussex (UK); Université de Lorraine, Nancy (France); University of Seville (Spain)