

Titolo	Virtual Lab – International Cooperation
Acronimo	SUNISWELL
Durata	2019 - ongoing
Responsabile	Prof. Stanislao Patalano (Responsible of UNINA Research Unit)
Partner	ISAE – Supméca, Paris, France - IS2M research team University of Applied Sciences Upper Austria, Wels, Austria – Smart Mechatronics Engineering Research Group
Call	N/A
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Link	Suniswell - ISAE-Supméca

Abstract

Suniswell promotes mechatronic design in research, education, and technology transfer to industry, thanks to the collaboration among three international universities and several working groups. Established in 2019 from long-standing scientific relationships, **SUNISWELL** brings together:

- the **IDEAS Lab** (Interactive Design and Simulation Lab) of the Department of Industrial Engineering, University of Naples Federico II, Italy;
- the **IS2M research team**, Laboratoire QUARTZ, ISAE – Supméca, Paris, France;
- the **Smart Mechatronics Engineering Research Group**, University of Applied Sciences Upper Austria, Wels, Austria.

The cooperation is based on workshops, joint PhD programs, and international projects, with the goal of advancing mechatronic design and strengthening the link between academia and industry. This scientific collaboration has led to extensive European-level projects in partnership with both industrial and academic stakeholders.

The cooperation focuses on several key areas, supported by dedicated working groups:

6. **Agile-based hybridization**: focused on integrating agile approaches to enhance the flexibility and efficiency of mechatronic systems.
7. **Human-centered design**: focused on designing and developing collaborative environments for Industry 4.0 and 5.0. It aims to improve human-machine interaction, optimizing productivity and safety in modern industrial contexts.
8. **Integrated sustainable design**: dedicated to the development of mechatronic systems that are not only efficient but also environmentally sustainable.
9. **Digital Twin**: focused on the methods for designing and implementing digital replicas of physical systems at various stages of their lifecycle, enabling advanced performance simulation and analysis.
10. **Artificial Intelligence for Mechatronics**: applies AI techniques to enhance the capabilities and efficiency of mechatronic systems.

Suniswell aims to address the modern challenges of mechatronics by offering innovative and sustainable solutions. Its activities not only foster scientific research but also contribute to the training of new talent and the transfer of advanced technologies to industry, reinforcing the connection between academia and the industrial world.