



Laboratorio MUSP

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MUSP, the laboratory for applied research in the field of machine tools and production systems

Why was MUSP established?

Italy is one of the main producers and exporters of machine tools worldwide. However, the global market forces enterprises to face an ongoing comparison with a wider range of competitors. Against this backdrop, research and innovation become essential ingredients for competitiveness and for fuelling a continuous flow of ideas and expertise supporting the evolution of requests coming from the market.

MUSP (Macchine Utensili e Sistemi di Produzione, Machine tools and production systems) - a lab focussing on applied research in the machine tools' industry - was established in 2006 in Piacenza with the precise aim of meeting innovation and competitiveness needs of companies working in this field on an international level. Needs are met through an active cooperation of enterprises, institutions and universities that were able to set up a network to successfully embrace the change and competition taking place in the machine tool's industry.

The first idea for a specific laboratory dedicated to the study of industrial producer goods dates back to 2003 and was conceived within the Faculty of Mechanics at the Piacenza branch of Politecnico di Milano. In 2004 the laboratory project started to take shape after being included (and entitled to financing) in the Piano per la Ricerca Industriale, l'Innovazione e il Trasferimento Tecnologico (PRIITT, Plan for Industrial Research, Innovation and Technology Transfer) of the Emilia Romagna Region. Such plan envisages important financial contributions by the Fondazione di Piacenza e Vigevano (Piacenza and Vigevano Foundation), whereas the Piacenza Province and Municipality are making a wing available for the laboratory at EXPO.

MUSP belongs to Rete Alta Tecnologia dell'Emilia Romagna (Emilia Romagna High Technology Network), set up thanks to the supporting initiatives promoted by PRIITT. The Network includes a number of facilities with a strong research

component, whose aim is to work in line with the needs of the regional entrepreneurial system. The Network currently includes 14 industrial research labs and 8 innovation centres distributed all over the region and operating in 6 different fields: MUSP is active in the High Mechanical Technology segment. The Rete Alta Tecnologia's labs can rely on the coordination and support of ASTER Scienza Tecnologia Impresa, a consortium including the Emilia Romagna Region, the national research centres with offices in the area (CNR, ENEA and INAF), the Chambers of Commerce regional union and the regional enterprise associations.

MUSP also belongs to Hi-Mech (www.hi-mech.it), the regional network for advanced mechanics set up in the Emilia area under an agreement between MIUR and the regions. Such area was chosen due to its long-standing tradition in the manufacturing industry.



Who is part to the Consortium?

The MUSP lab reports to the Consortium bearing the same name. Since its establishment the social participation has grown steadily, but it is still characterised by a strong industrial representation. Its current partners are:

- > Companies: Jobs, Lafer, Mandelli, MCM, Sandvik, Samputensili, Tecnocut, Working Process

- > Universities: Politecnico di Milano, Università Cattolica
- > Associations: UCIMU-Sistemi per Produrre, Confindustria (Confederation of Industry) Piacenza
- > Institutions: Fondazione di Piacenza e Vigevano, Piacenza Province, Piacenza Municipality, Emilia Romagna Region



What is MUSP today and how has it developed recently?

MUSP is a concrete example of cooperation among institutions, enterprises and universities aimed at boosting the growth of the Italian manufacturing industry.

In particular, in the last few years MUSP has been focusing its activities on researching metal foams, revolutionary materials for industrial productions in the automotive, biomedical and other areas.

As an acknowledgement for the activities carried out so far, MUSP has recently been included in the shortlist of laboratories and research centres entitled to further financial support by the Regional Ministry for Production Activities of the Emilia Romagna Region.

The financial resources thus made available have enabled the MUSP laboratory to begin a new stage of its development, envisaging - among other things - the start-up of a new research work devoted to studying technological materials and processes that can be of interest to the aviation industry.

What can MUSP offer to the aviation industry?

The mechanical processing of materials that can be of interest to the aviation industry represents a new frontier of research in the technology fields. MUSP is a qualified research partner in this field, thanks to a new research area focussing on Production technologies for the aviation industry.

Titanium and composites in general, whose processing is extremely difficult, are being increasingly used in this field, thereby bringing about complex issues ranging from the identification of the most suitable tools, coatings and work parameters, to the need to revise the design of machinery, processes and working systems.

For all our corporate partners the aeronautics industry is a major reference market, thus enabling MUSP to access and develop specific competences that can be usefully applied in the new research projects. Utmost attention is obviously paid to the intellectual property of results achieved in the different programmes.

For further information please contact: michele.monno@musp.it

The i-MUSP division

The aim of Innovazione-MUSP (i-MUSP) division, the laboratory's "marketing arm", is to foster relations with the corporate network in order to make international research results better applicable to technologies and mechanical processing systems.

There is still a heated and long-standing debate ongoing about the difficult dialogue between the industrial world and the research environment.

The "research marketing" is still very rare in Italy, yet it is a valuable instrument to spread the news about skills and resources of local research centres and to try and meet the genuine innovation needs of companies.

MUSP has decided to pursue this objective through i-MUSP, a new division devoted to the identification of potential markets for research activities currently ongoing in the lab.

i-MUSP's initiatives are not only targeted to consortium partners, but to all manufacturing companies wanting to maintain their competitiveness through innovation. For further information please contact: mario.salmon@musp.it.

i-MUSP: Innovazione MUSP. Person in charge: Mario Salmon

Area 1: Configuration and management of integrated production system. Person in charge: Andrea Matta, Politecnico di Milano

Area 2: Precision Engineering and Acceptance Testing. Person in charge: Giovanni Moroni, Politecnico di Milano

Area 3: Advanced design, materials and technologies. Person in charge: Michele Monno, Politecnico di Milano

Area 4: Sector studies and protection of intellectual property rights. Person in charge: Paolo Rizzi, Università Cattolica

Area 5: Production technologies for the aviation industry. Person in charge: Michele Monno, Politecnico di Milano