

<p style="text-align: center;"><b>Research program:</b> <b><i>“Use of Parallel Kinematics Machines (PKM) inside production lines”</i></b></p>
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**Annex C**

**Department of Engineering and Applied Sciences**

Tutor: **Prof. Bruno Zappa**

**Research project**

Primary objective of the research project is the definition of criteria for the optimal use of parallel kinematic machines in production lines, both in the typical industrial field and in other fields like automotive or food handling.

As an example, the parallel kinematics robotic systems are frequently used whenever objects need to be moved from a position to another with high speed and need to be positioned with high accuracy in order to execute measurements and dimensional tests. The in line insertion of systems, allowing to make automatic measurements and dimensional controls on components during production, leads to remarkable advantages preventing bad components to reach the end of the production process.

Besides the performances of each single PKM used in the production line, which are fundamental to guarantee the overall plant's performances, the plant's configuration is likewise important in terms of both number and position of the parallel kinematics systems inside the production line.

The research project is therefore focused on the plant/production line as a whole and not on the single parallel kinematics systems, with particular reference to the definition of a plant's configuration that guarantees the desired productivity.

Besides the study phase for the definition of the plant's configuration criteria and for the optimal use of PKM in the plant, the research project deals also with the configuration and analysis of some real plants.