Demonstrators

A series of demonstrational µ products will be developed, produced and tested on the basis of the project's key findings. These demonstrators are on one hand examples of products that have an enormous market potential and are on the other hand very challenging to produce, pushing the newly developed technologies to their limits and beyond.

Aspheric glass µ-lenses are needed to raise the resolution of mobile phone cameras above 3 mega pixels because the optical properties of plastic lenses are unsatisfactory.

Double-side cylinder lens arrays will be produced for use in medical/laser devices with an expected market growth of up to 50% annually.

Diffractive aspheric lenses will be used in advanced cameras such as automotive night vision systems with significant growth rates in sales predicted.

Project Partners

aix tooling
ASCAMM TECHNOLOGY CENTRE
MŰEGYETEM 1782
CemeCon
CERATIZIT
Cimatron
FIDIA
FISBA OPTIK
IBS Precision Engineering
ingeneric
Fraunhofer Institut Produktionstechnologie
KTH
KATHOLIEKE UNIVERSITEIT LEUVEN
Leica
PHILIPS
SCHOTT glass made of ideas
system 3R
Taylor Hobson PRECISION
VDI
WZL RWTH AACHEN

4µ Production

From 2006 until 2010, over 70 highly qualified experts from 20 partner companies and research institutions will be working on revolutionising the European µ production landscape.

Please contact any Production4µ partner or the project management at the Fraunhofer Institute for Production Technology IPT to learn how you and your company can benefit from this ambitious project while contributing to the success of the European economy. The Production4µ spectrum of services includes: trade fairs, conferences, seminars, online courses…

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4µ Production

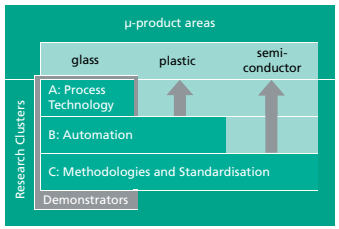
Production for Micro – Empowering Europe for the µ century

SIXTH FRAMEWORK PROGRAMME

Production for Micro – Project Overview

The pan-European Production4µ consortium combines the efforts of 20 key companies and leading research institutions with expertise in the production, development and end use of µ-products.

The new century will be a µ century where customers will demand advanced, high added-value products with features that can only be realised through the use of µ technologies. The Production4µ project aims at significantly enhancing the competitiveness of the European µ-industry.



The project is divided into three clusters: cluster A concentrates on process technologies for glass moulding, cluster B supplies automation and measurement solutions that will also be useful for the mass production of plastic µ components and cluster C is working on methodologies that will be applicable to a large range of µ products.
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Cluster A
Reliable Manufacturing Technologies

Europe's leading experts in precision glass moulding, raw glass material and process control have joined their research efforts to achieve stable processes for the production of µ glass lenses.

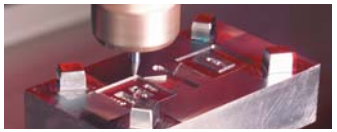
The global market for glass lenses is predicted to rise by at least 20% each year due to various applications in consumer products (e.g. automotive vision and mobile photography). Moulding helps to significantly lower production costs and achieve market dominance.

The goal of mass producing moulded glass lenses will be achieved through extensive research on materials, manufacturing processes and coatings to improve tools and moulds. The basic glass materials and the moulding process will be simulated, tested and measured.

Cluster B
Automated Process Chain

Automation and measurement tools that are desperately needed by industry for the industrialised mass production of lenses and an enormous variety of µ-glass and plastic products by moulding will be realised by this cluster.

Advanced µ products that could release their full market potential if produced by low cost automated µ manufacturing include a wide range of glass and plastic applications from medical µ analysis plates to laser components.

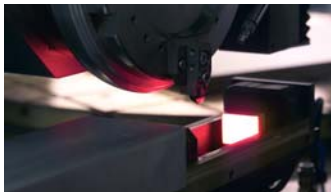


The ambitious target of handling, transporting, referencing and measuring very large numbers of extremely small devices will be achieved by a multidisciplinary team of experts using visionary automation concepts and multifunctional measuring devices.

Cluster C
Production Planning, Launch and Quality Management

The purpose of this cluster is to enable optimised mass production and production planning for many areas of µ products, and to integrate the Production4µ experiences into a useful set of tools and databases.

µ products represent exciting new possibilities while at the same time protecting the environment and resources. In the near future, a short time to market, high quality and low costs and a high degree of flexibility will be decisive to market success.



Production planning, launch and quality management will be improved by new tools for cost estimation, product design and process chain derivation – supported by powerful databases and automated quality loops.