CENTiMO

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Website

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1 CENTiMO Website

In order to enable worldwide access to the basic ideas of innovations to be developed, the first release of the official CENTiMO Project website has been put online on November 2013, two month after the official Project launch. The URL of the CENTiMO Project website is:

www.centimo.eu

The usefulness of this Platform is not only associated to the public section, where the basic information concerning the Project, partnership and public documents for dissemination activities are collected, but also on the private section which enables the partners to have a common workspace for collecting documents, sharing the results and having the whole consortium updated on the progress of the activities. The content will be periodically updated by partners, with relevant documents, papers and presentations useful for highlighting the Project approach and ideas. Access, with username and password, has been granted to each partner

2 Website structure and content

The website is hosted at the Fraunhofer IPT server, and will be used both for external/public communication and for matters related to internal coordination of the Consortium. The CENTiMO website is periodically maintained and updated by Fraunhofer IPT, on the basis of the work jointly performed by the partners.

The website is divided in two areas. The public area will serve the purpose of a publicly available source of information on the following topics:
- Basic information on the projects idea
- Description of the technological approach
- Information on the project partners and funding organization
- Access to project public documents, especially publications and conference papers
- Project news, e.g. announcement of upcoming trade fair participations

The private area is accessible for project partners only and includes
- A library to which all partners can add and upload document to share them with the other project partners
- A forum which might be used for discussions
- A calendar which will announce all project meeting other relevant dates

CENTiMO

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⊞ more info

Fraunhofer Institute for Production Technology

Establishment of an integrated process chain with European SMEs for the cost-efficient manufacturing of complex glass optics

Demand for complex yet low-cost glass optics is growing within the sectors of lighting technology, automotive engineering, and in the areas of renewable energy. However, European companies are continuously being confronted with the dual challenge arising from the trend towards increasingly complex geometries coupled with intense pressure on market prices.

Still, the state-of-the-art approach to manufacture complex shaped glass optics is not efficient enough to meet the requirements of mass production sufficiently. The process requires large amounts of energy and manual work which results in a very time-consuming and expensive process. Besides, a large amount of glass is wasted and the moulds only have a limited lifetime.
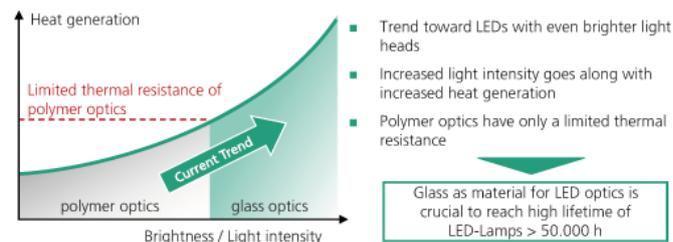
Therefore, the European SMEs are pulling for new technology developments enabling them to build up a new and improved process chain which allows for an efficient and economically viable glass optic replication.

The key to success in developing an efficient integrated production chain for complex optics is to mould optics directly from a gob of molten glass. This way, reheating of the glass, as it is currently necessary, is obsolete and saves large amounts of energy. Due to the precise cutting of glass gobs no subsequent mechanical processing is necessary and the amount of glass waste will be reduced to almost zero. Furthermore, this process can be fully automated which makes it fast and stable. In order to provide the SMEs with this efficient and economically viable production chain, extensive developments are necessary.

The project CENTiMO will start with a detailed analysis of melting, gobforming, and the moulding process. Based on this, the project partners will develop a suitable melting and gobforming process which is able to deliver gobs that can directly be moulded into glass optics. At the same time the glass moulding process will be developed. New mould materials will be evaluated in order to achieve the required quality and mould lifetime. Finally an evaluation and qualification of the developed processes will give decisive feedback for the improvement of the whole process chain.

Motivation

In the future there will be LEDs with even brighter light heads that can be used more flexible and individually. As a consequence of this trend optics have to withstand higher thermal loads. Polymer optics have a limited thermal resistance compared to glass optics and therefore only work to a limited extend. In comparison, glass offers some unique properties like an excellent heat and scratch resistance which leads to improved products. Therefore, glass is the material of choice for many future LED applications.

- Trend toward LEDs with even brighter light heads
- Increased light intensity goes along with increased heat generation
- Polymer optics have only a limited thermal resistance

Glass as material for LED optics is crucial to reach high lifetime of LED-Lamps > 50.000 h

Technological trend toward glass optics

The demand for complex low-cost glass optical components is not only growing within the lighting market but also in many additional sectors like automotive engineering, renewable energy, and medical technology. Based on this strongly growing demand, the overall goal of the CENTiMO project is to develop a new process chain which allows for an efficient and economically viable glass optics replication.

SEVENTH FRAMEWORK PROGRAMME
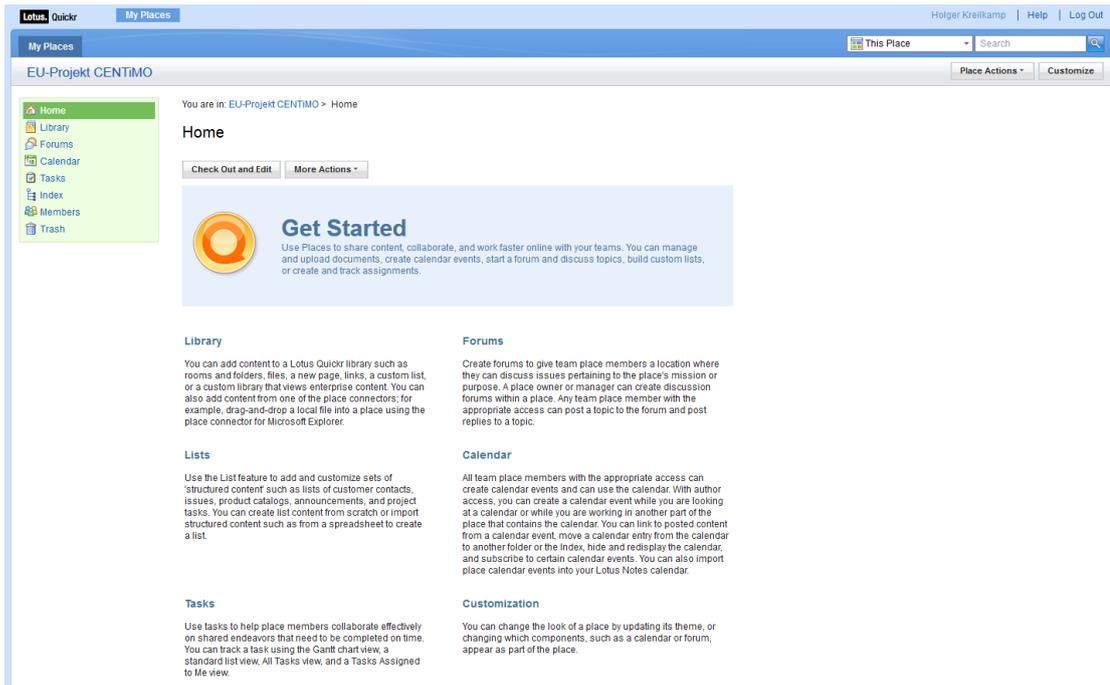
Figure 1: Public area on CENTiMO website
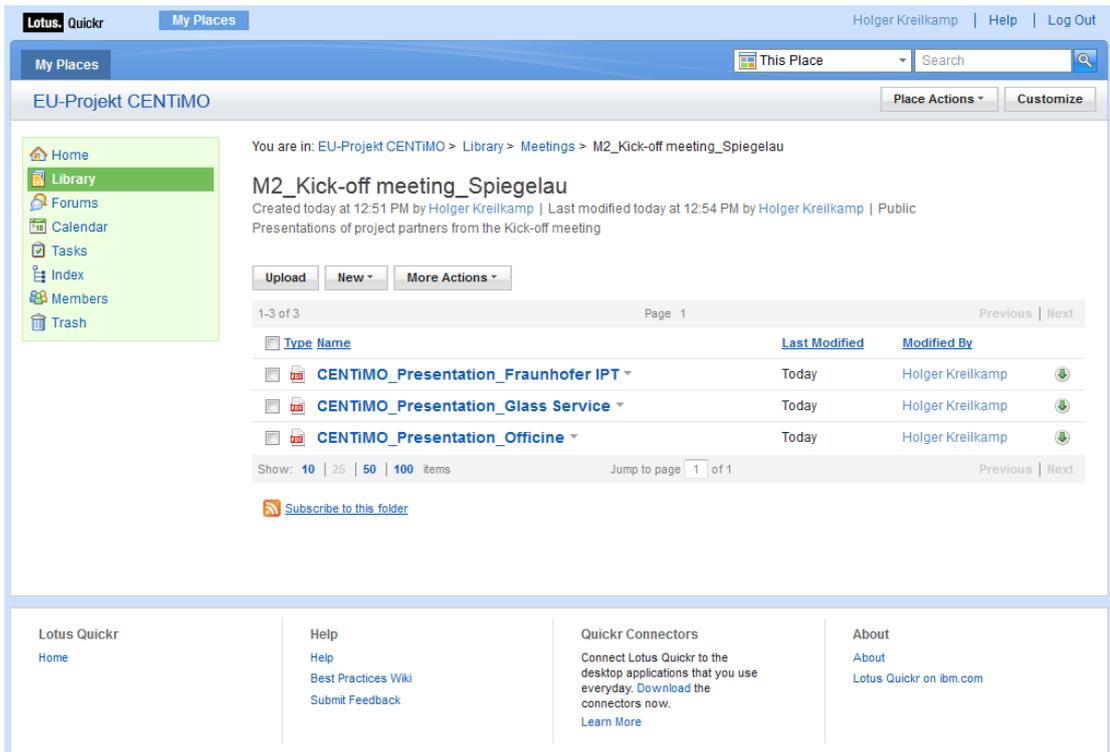
Figure 2: Private area on CENTiMO website

Figure 3: Library-tool in the private area