

Fraunhofer-Institute for Production Technology IPT

EPIC Meeting on Polymer Opics

06th of July, 2020

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Fraunhofer-Institute for Production Technology IPT in Aachen, GER

Fraunhofer Gesellschaft

Institutes and sites



Key Figures

- 74 institutes
- 28 000 employees
- > 2.8 bn € annual fund for research

➔ **Largest organization for applied research in Europe**

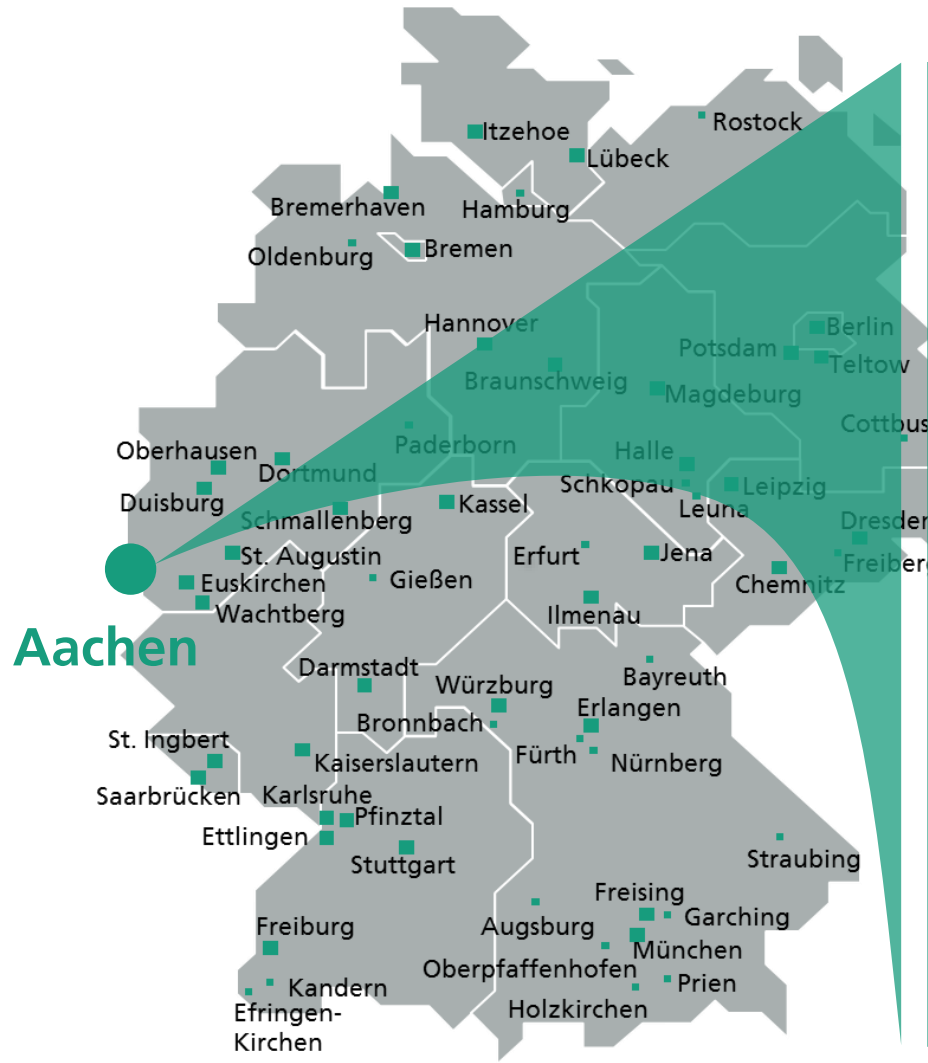
Fraunhofer Society

- Founded in 1949
- Legal form: nonprofit association
- Headquarter in Munich, Germany

Goal

- Contract research for economy and society
- Transferring fundamental research to industrial application

Overview



IPT



459 Employees, thereof
229 permanently



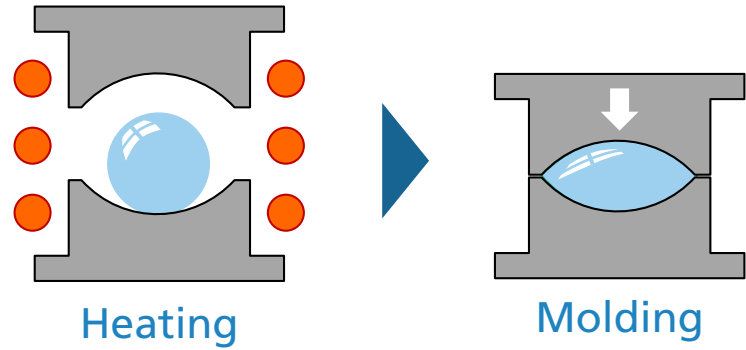
31 Mio. € operating budget,
thereof 11.1 m € Industry
projects



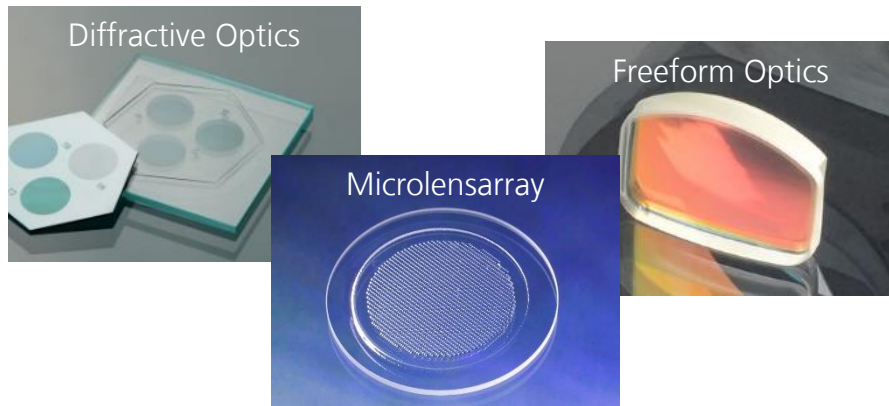
Fraunhofer IPT is
certified according
to DIN EN ISO
9001:2015

High Potential of Replicative Optics Manufacturing

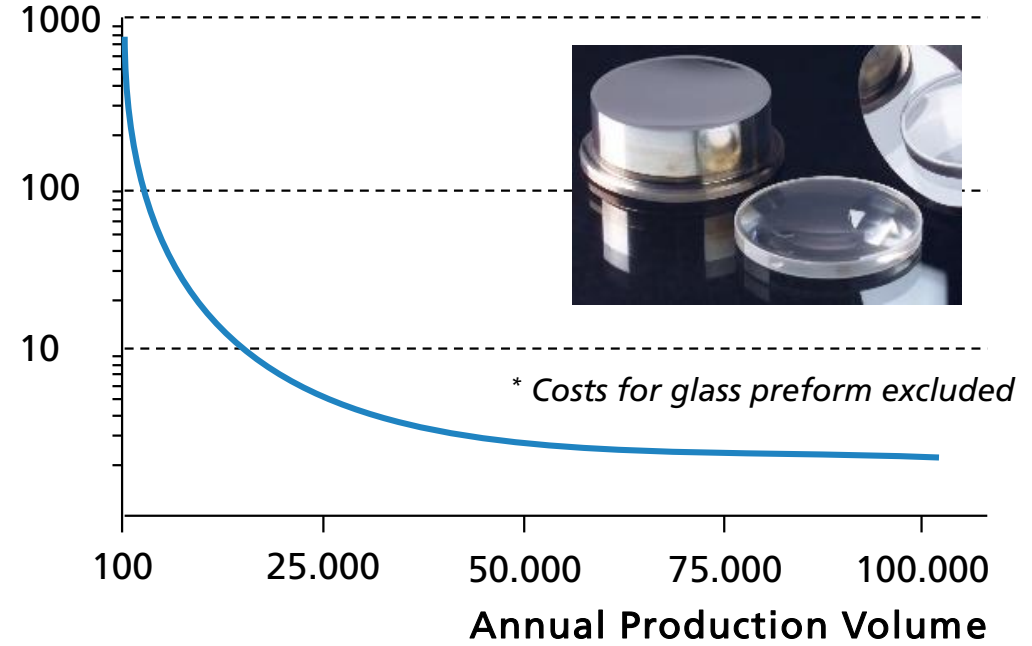
Precision Glass Molding Principle



Complex Lens with high accuracy



Manufacturing Costs* per Unit [US-\$]



Precision Glass Molding can potentially meet the requirements of complex geometries, high accuracy at low costs

Precision Glass Molding

Product Spectrum & Scope of Application

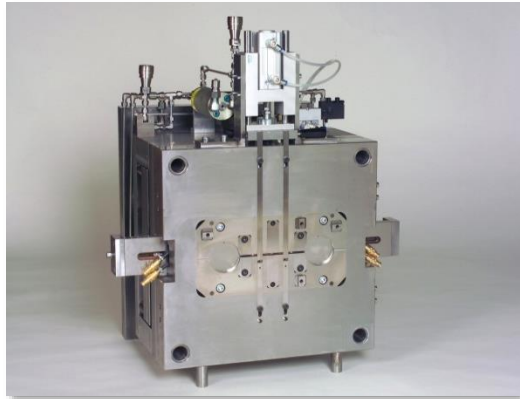


- Wide range of possible geometries
- Accuracies can be adjusted according to the field of application:
 - Imaging
 - Lighting
 - Laser Optics
- High reproducibility/ repeatability as a consequence of the molding process
- Scalable production through Spinoff companies and technology transfer

INGENERIC
aix tooling

Replication of Polymer Optics at Fraunhofer IPT

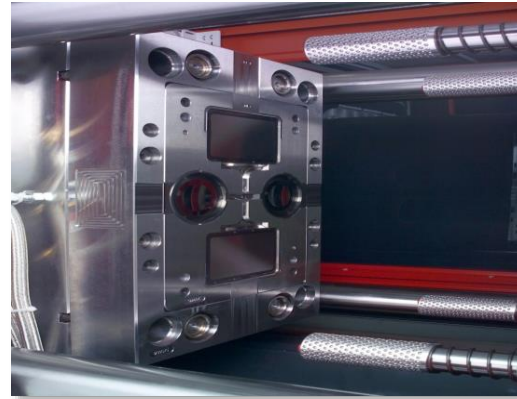
Project examples of IPT mold and tool making



Injection compression molding tool with integrated measuring sensors



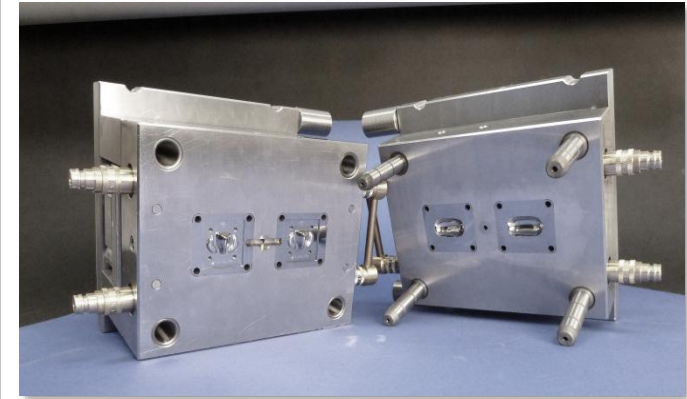
Freeform optic for automotive lights



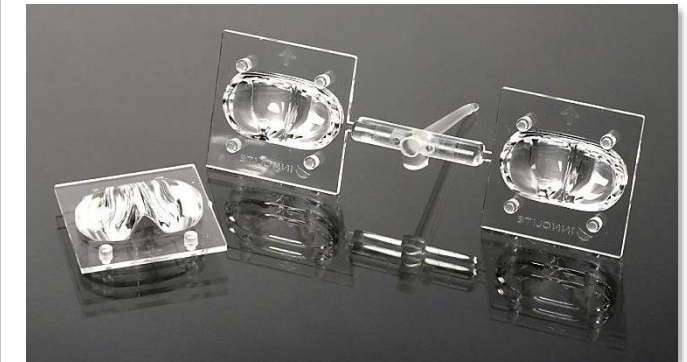
2+2-cavity injection molding tool with dynamic cooling



Microstructured Lightguides



Compact injection compression molding tool with integrated hydraulic unit



Thick-walled LED-focus lens with freeform surface

From Manufacturing over Assembly to System integration

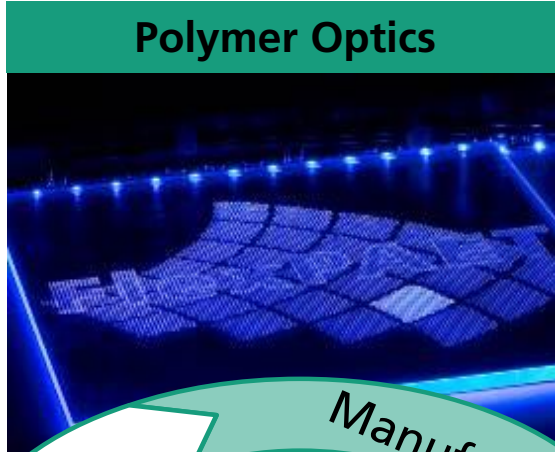


Glass Optics

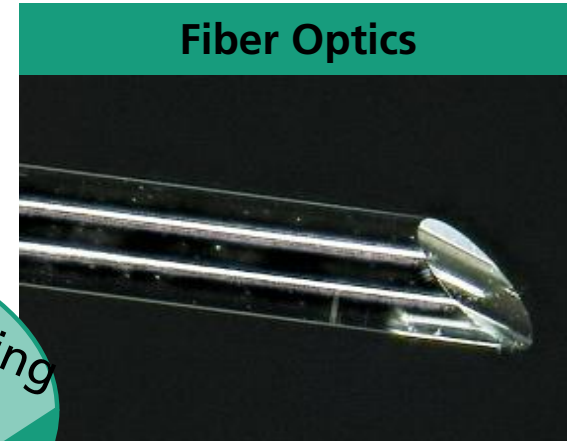


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Polymer Optics



Fiber Optics



Automated assembly of Optics



Evaluation of Optics



ACOP

