



Swiss National Optics Plattform SNOP

History

- IZOT founded in 2011 as photonic network platform in Eastern Switzerland
- First outcome: formation of a group of interest in high end optical coating technologies – in cooperation with University Neuchâtel (Prof. Südmeyer)
- In parallel micro optics developments at Univ. Neuchâtel (Prof. Herzig)
- 2013 transformation of SwisslaserNet to Swissphotonics → expansion to general photonic subjects
- Integration of IZOT activities into Swissphotonics
- Formation of Swiss National Optics Platform (SNOPT) in cooperation of
 - EPFL
 - University Neuchatel
 - NTB Buchs

Idea of SNOP – Swiss National Optics Platform

- SNOP is the one stop shop for classical photonics subjects including
 - Design and fabrication of optical components and systems
 - Design and fabrication of microoptical systems
 - Design and fabrication of high end optical coatings
 - Development and application of optical measuring techniques
- Involvement



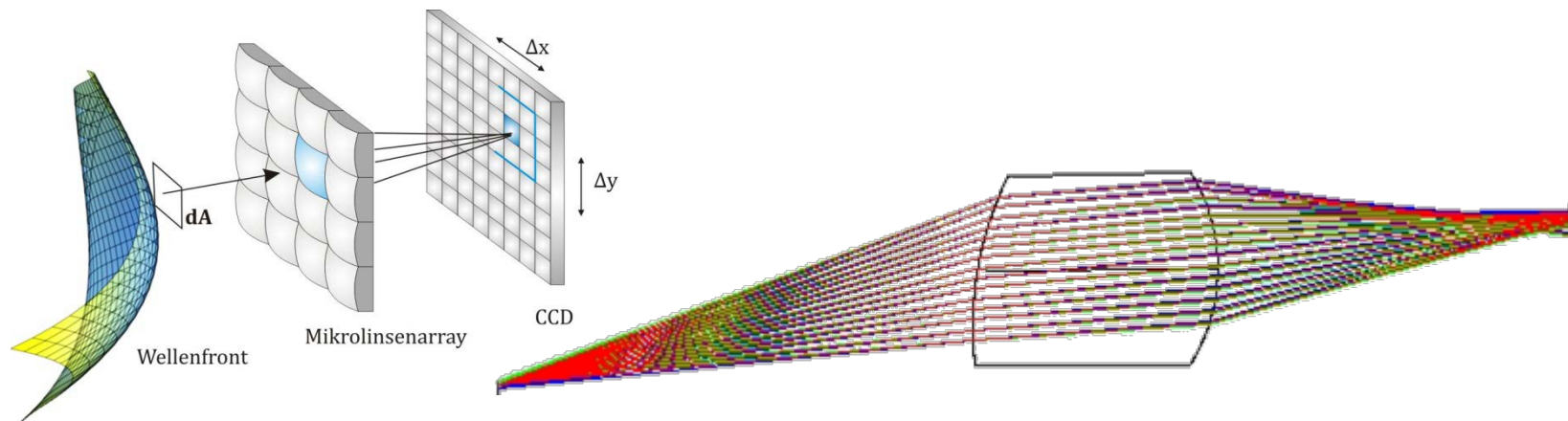
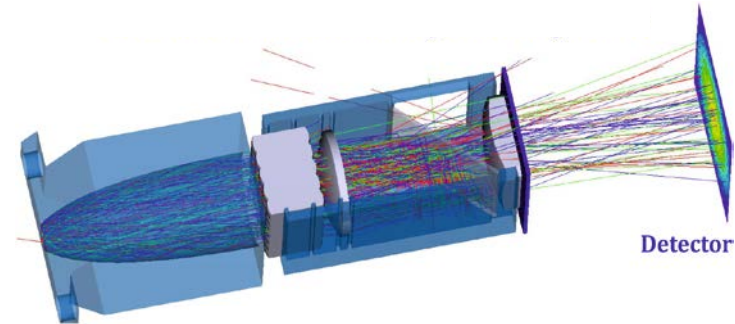
Optical Components and Systems

- Competences

- Design of optical systems
- Illumination systems

- Activities

- Characterization of optical components (e.g. prototype inspection of injection molded lenses, characterization of surfaces, wavefronts, etc.)
- Design of special optical systems (illumination and imaging systems)
- Training and teaching



Micro-Optics

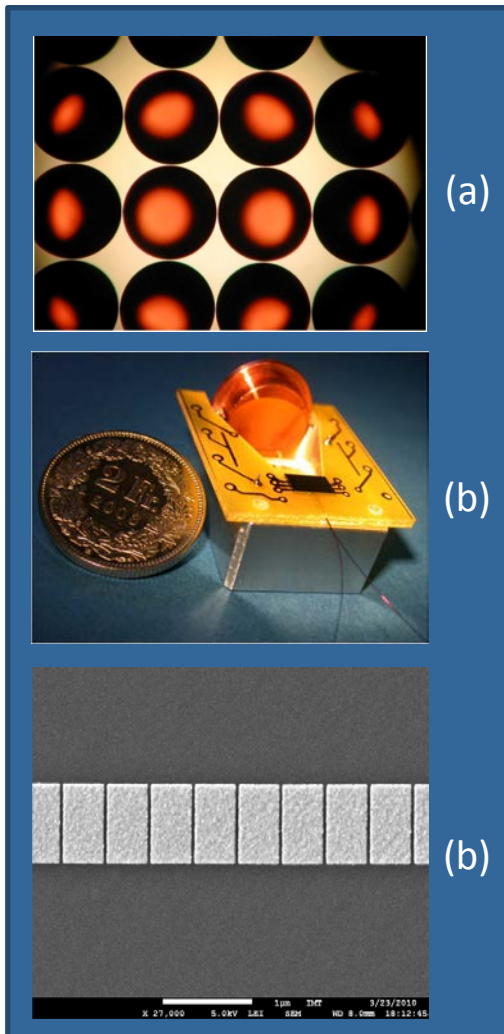
opt.epfl.ch

Optics & Photonics Technology Laboratory (OPT)

Prof. H. P. Herzig



ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE



Competences

- System design and optimization
- Modelling (rigorous diffraction theory)
- Prototype fabrication (microlenses, binary structures)
- Characterization (near-field, interference microscope, spectrometer)
- Consulting

Activities

- Micro-optics: elements and systems
- Nano-optics and near-field imaging
- Mid IR photonics
- Environmental & biomedical sensing
- Metamaterials

Examples

(a) *Microlens array*

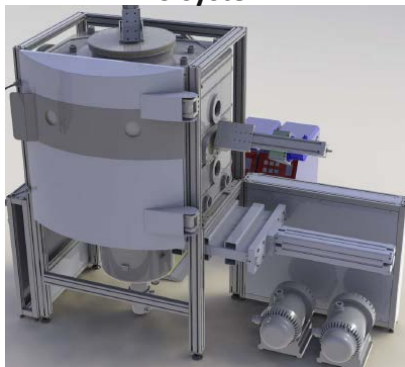
(b) *Miniaturized Fourier Transform spectrometer based on MEMS technology*

(c) *Optical nanostructure for sensing applications*

Optical High End Coatings

- Competences
 - Vaporation equipment
 - Design of coatings
 - Analysis of coatings

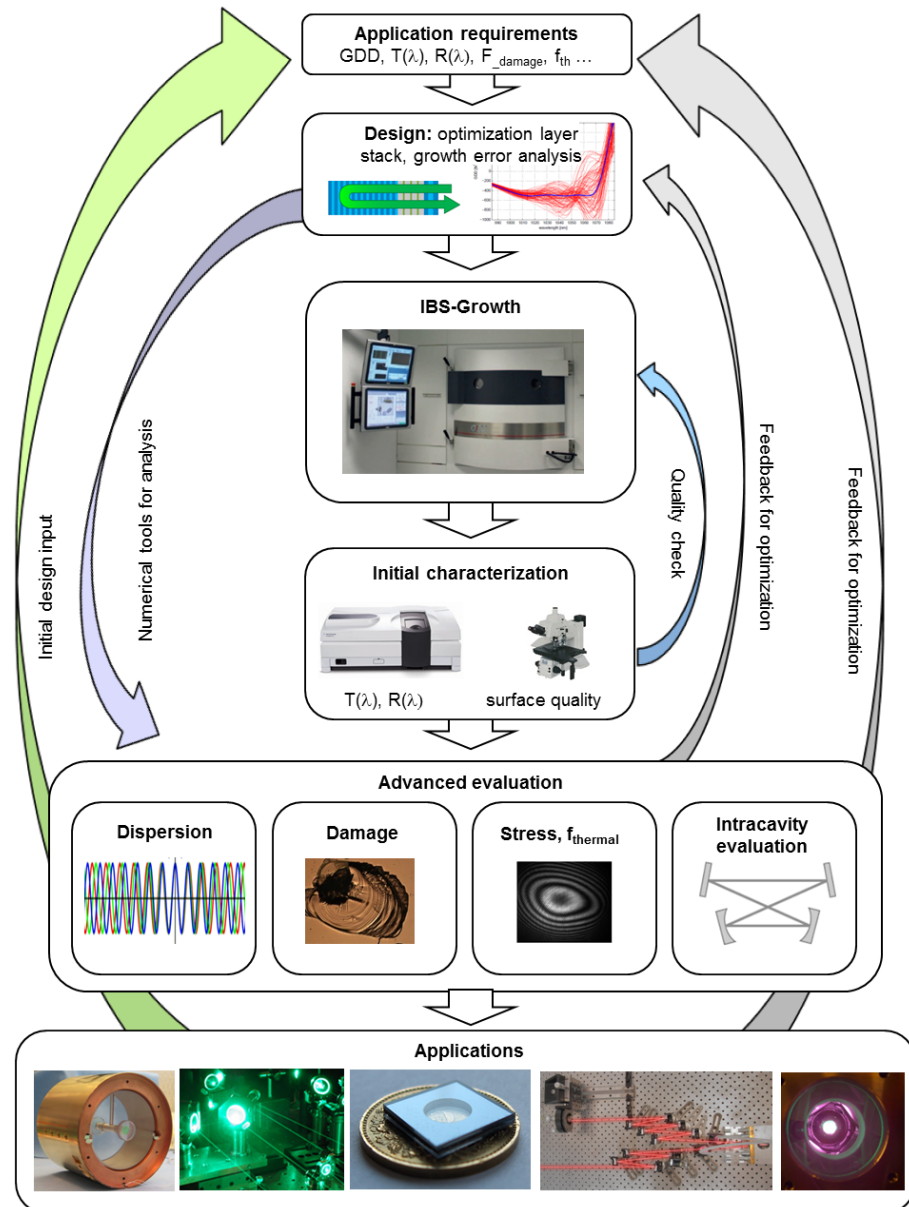
IBS system



Metricon system



Color changing coatings



Optical High End Coatings

- Activities
 - Neuchâtel
 - Design, growth, characterization, and laser evaluation of dielectric structures by Ion beam sputtering
 - Buchs: RhySearch
 - New research center
 - Partner: ETH, Empa, CSEM, UniLi, NTB
 - **New Proposal:**
 - «Optical high end coatings» by industry
 - Goal: develop, prototype, characterize optical coatings
 - Including Uni Neuchâtel

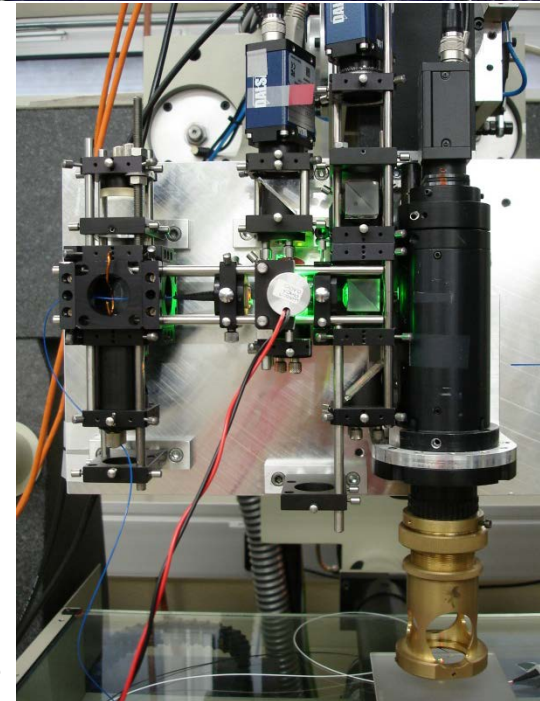


Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

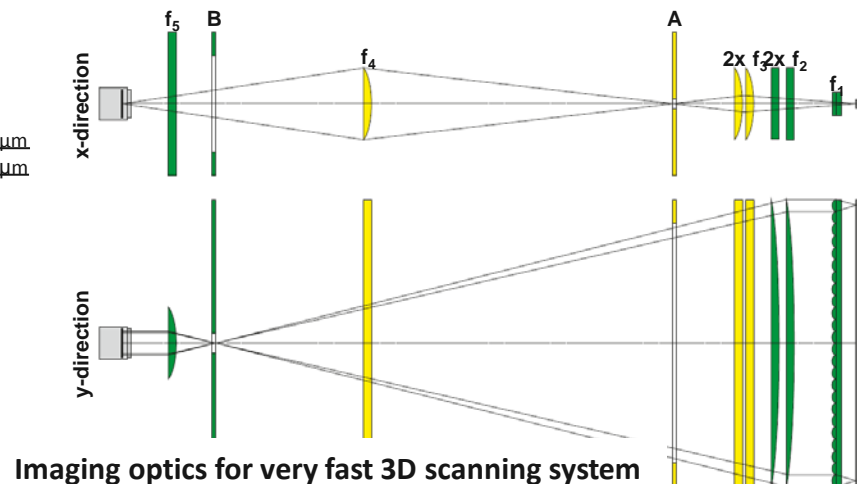
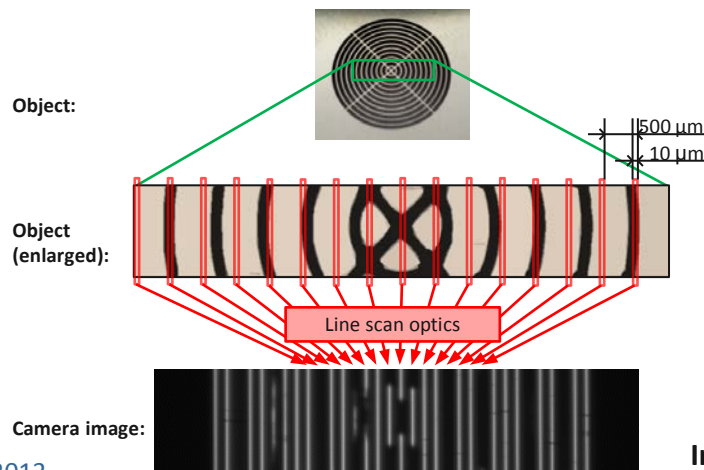


Optical Measuring Techniques

- Competences
 - Interferometry
 - Speckle
 - Fringe Projection
- Activities
 - Design of adapted optical sensors
 - Application and integration into production processes
 - Optimization of systems and processes



High precision 3D fiber probe

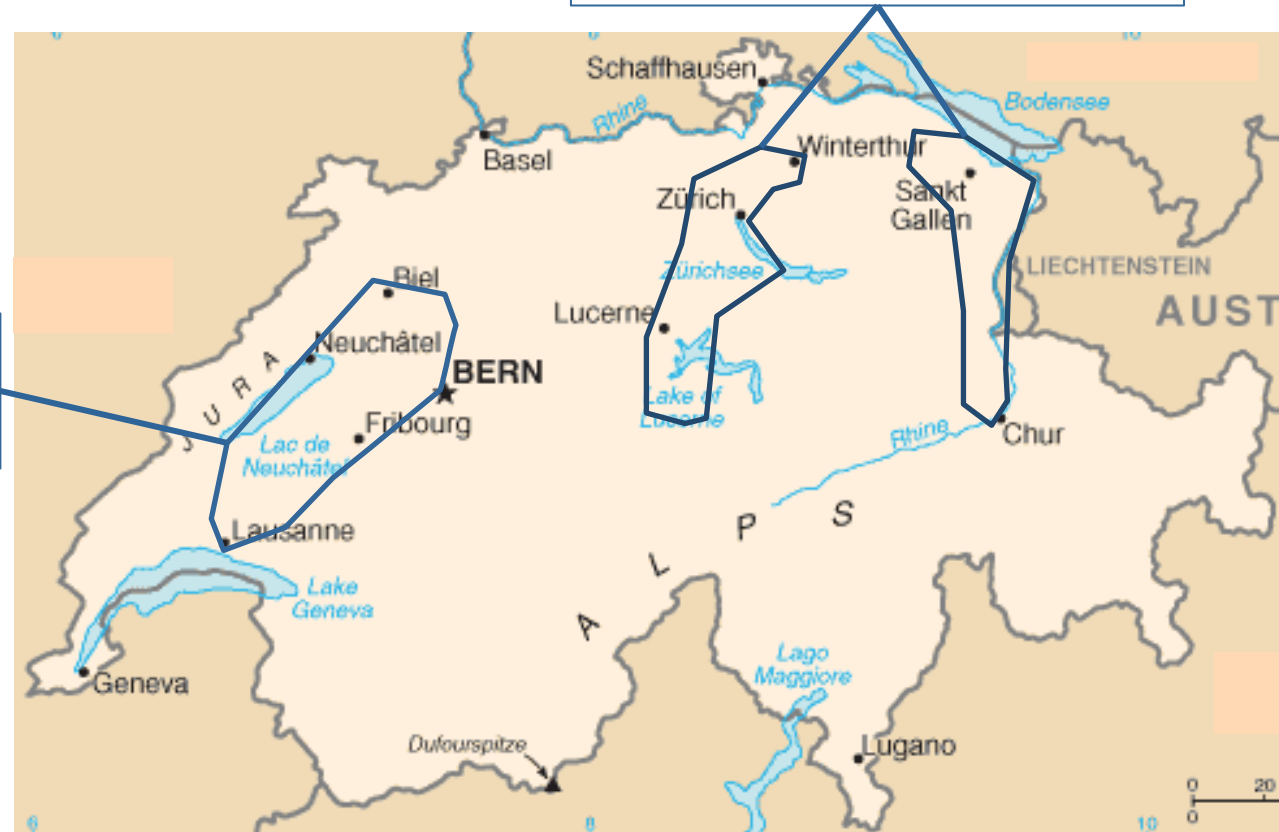


SNOPT – Cooperation With Industry Partners

- Photonics industry is concentrated in
 - Zürich area
 - Rhine valley
 - Neuchâtel area

- Optical systems and components
- Optical coatings
- Optical metrology

- Microoptics
- Optical coatings
- Optical metrology



Summary

- Driving innovation in optical technologies
- Call SNOP for
 - Optical components and systems
 - Optical coatings
 - Optical measurement techniques
- What can we do together?

- Contact:

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