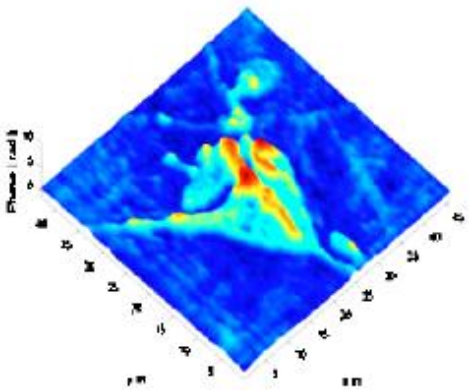
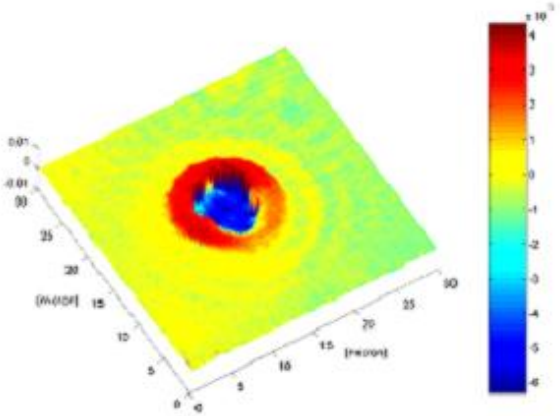
Research Topics

- 3D Coherent Imaging Microscopy (Interferometry & Digital Holography)
- Micro/Nano structuring of Lithium Niobate by Electric Poling and Optical characterization
- Advanced Holographic Lithography
- Optical Devices

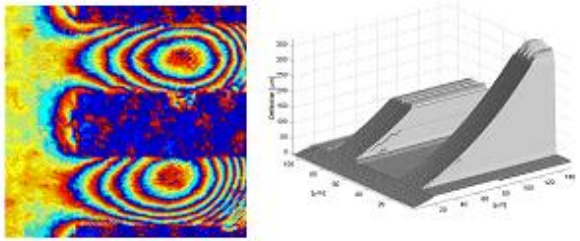
3D Coherent Imaging Microscopy (Interferometry & Digital Holography)



QPM Phase map
of mouse live cell

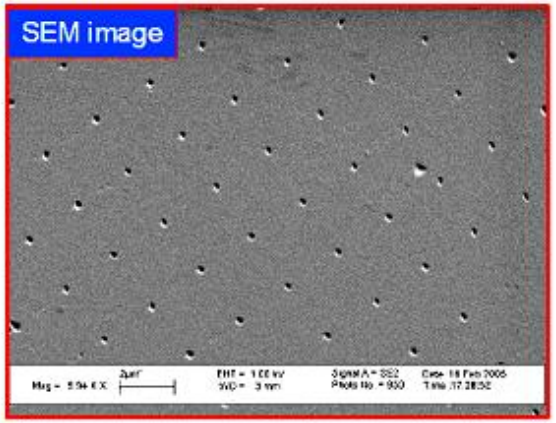


Refrcative index profile of optical waveguide in glass
written by femotsecond laser

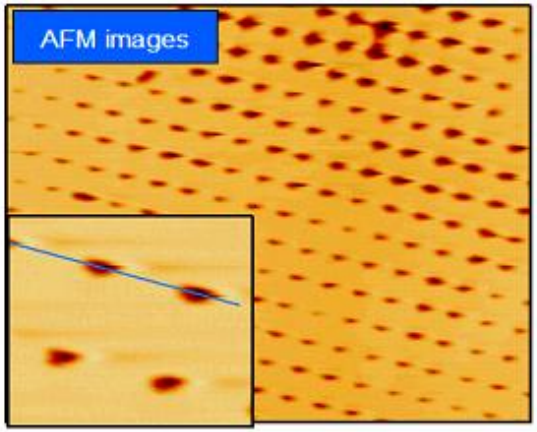


3D profile of Silicon MEMS by DH

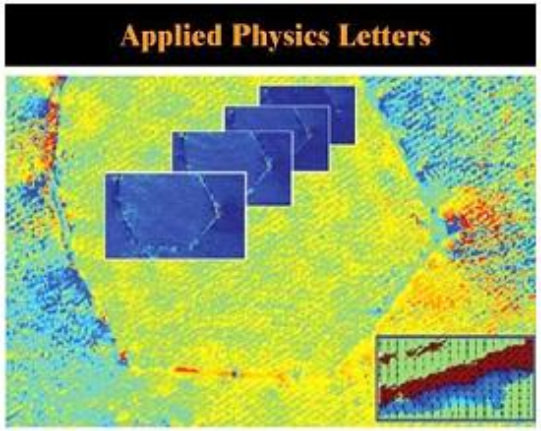
Micro/Nano structuring of Lithium Niobate by Electric Poling and Optical characterization



Array of nano-holes (size 175 nm); period 2μm in LiNbO3

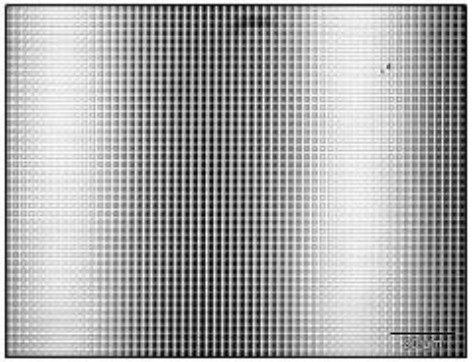


Nanostructures in LiNbO3 characterized by AFM
Period 500 nm; Etch depth 900 nm
Hole size 200 nm

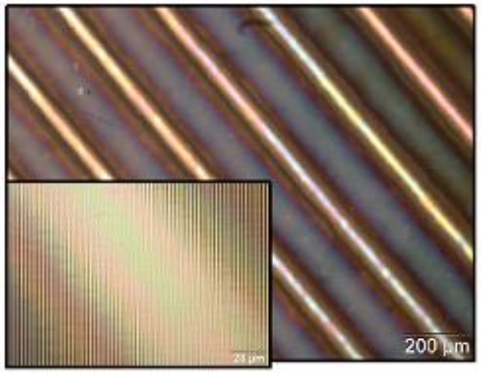


Birefringence effect at domains boundaries in LiNbO3

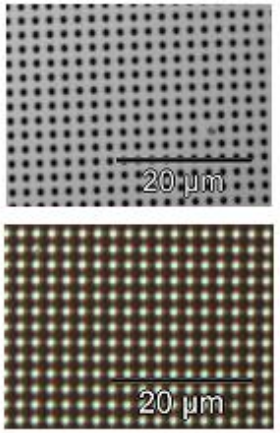
Advanced Holographic Lithography



Micro structures obtained by multiple exposures by HL

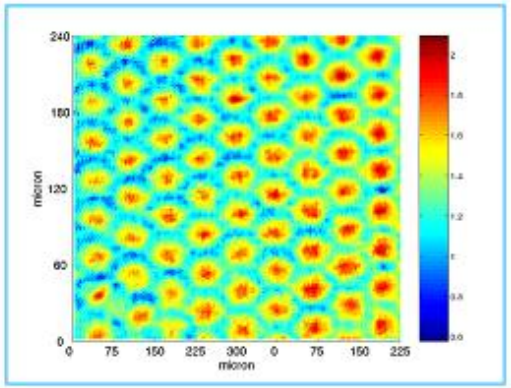


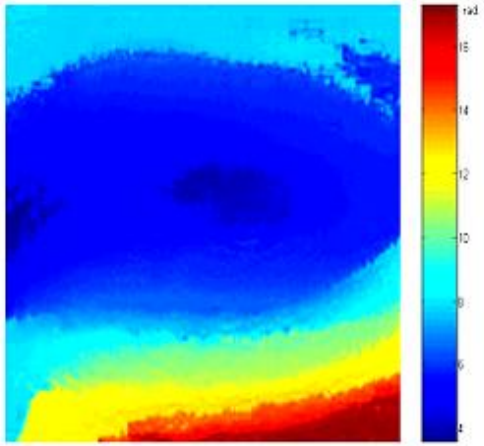
Microstructures by multiple periods and its magnified view

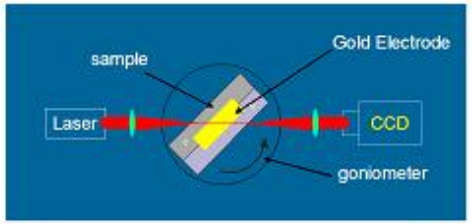


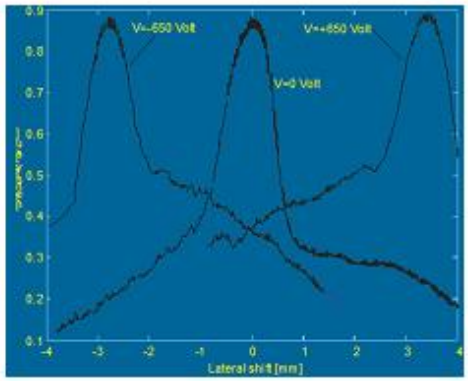
Dot and Grid structures

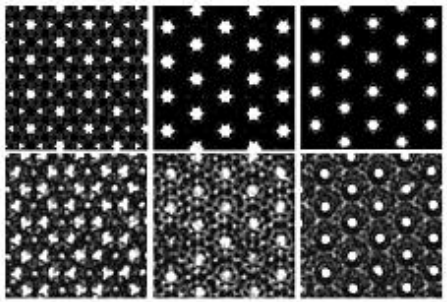
Optical Devices

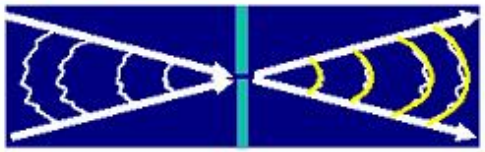












Intensity Patterns obtained by a **Phase-Array** in LiNbO3 at various distance (Talbot effect) and applied voltages (electro-optic effect)

Phase-Map of an aberrated wavefront measured by a **Point Diffraction Interferometer**

Beam deflector in LiNbO3