

Scientific Publications C. David 2006 - 2016

2016:

1. I. Mohacsi, I. Vartiainen, M. Guizar-Sicairos, P. Karvinen, V.A. Guzenko, E. Müller, C.M. Kewish, A. Somogyi and C. David
Fabrication and characterization of high efficiency double-sided blazed X-ray optics
Optics Letters **41** (2016) p. 281-284
2. I. Vartiainen, I. Mohacsi, K. Stachnik, M. Guizar-Sicairos, C. David, and A. Meents
Zernike X-ray Ptychography
Optics Letters **41** (2016) p. 721-724
3. T. Katayama, S. Owada, T. Togashi, K. Ogawa, P. Karvinen, I. Vartiainen, A. Partanen, C. David, T. Sato, K. Nakajima, Y. Joti, H. Yumoto, H. Ohashi, and M. Yabashi
A Beam Branching Method for Advanced Single-shot Characterization of Hard X-ray Free-electron Lasers
Structural Dynamics **3** (2016) p. 034301-14
4. Y. Kayser, S. Rutishauser, T. Katayama, T. Kameshima, H. Ohashi, U. Flechsig, M. Yabashi, and C. David
Shot-to-shot diagnostic of the longitudinal photon source position at the SACLA by means of X-ray grating interferometry,
Optics Letters **41** (2016) p. 733-736

2015:

5. P. Trtik, J. Hovind, C. Grünzweig, A. Bollhalder, V. Thominet, C. David, A. Kaestner, and E.H. Lehmann
Improving the spatial resolution of neutron imaging at Paul Scherrer Institut - The Neutron Microscope Project
Physics Procedia **69** (2015) p. 169-176
6. M. Makita, P. Karvinen, D. Zhu, P. Juranic, J. Grünert, S. Cartier, J.H. Jungmann-Smith, H.T. Lemke, A. Mozzanica, S. Nelson, L. Patthey, M. Sikorski, S. Song, Y. Feng, and C. David
High Resolution Single Shot Spectral Monitoring of Hard X-ray Free Electron Laser Radiation
Optica **2** (2015) p. 912-916
7. S.V. Roth, R. Döhrmann, R. Gehrke, R. Röhlberger, K. Schlage, E. Metwalli, V. Körstgens, M. Burghammer, C. Riekkel, C. David, and P. Müller-Buschbaum
Mapping the morphological changes of deposited gold nanoparticles across an imprinted groove
Journal of Applied Crystallography **48** (2015) p. 1-7
8. K. Stachnik, I. Mohacsi, I. Vartiainen, N. Stuebe, J. Meyer, M. Warmer, C. David, and A. Meents
Influence of finite spatial coherence on ptychographic reconstruction
Applied Physics Letters **107** (2015) p. 011105 - 5
9. I. Mohacsi, I. Vartiainen, M. Guizar-Sicairos, P. Karvinen, C. Kewish, A. Somogyi, V.A. Guzenko, E. Müller, E. Färm, M. Ritala, and C. David
Double-sided diffractive X-ray optics for hard X-ray microscopy
Optics Express **23** (2015) p. 776-786
10. I. Vartiainen, C. Holzner, I. Mohacsi, P. Karvinen, A. Diaz, and C. David
Artifact characterization and reduction in scanning X-ray Zernike phase contrast microscopy
Optics Express **23** (2015) p. 13278-13294
11. P. Roedig, I. Vartiainen, R. Duman, S. Panneerselvam, N. Stuebe, O. Lorbeer, M. Warmer, G. Sutton, D. H. Stuart, E. Weckert, C. David, A. Wagner, and A. Meents
A micro-patterned silicon chip as sample holder for macromolecular crystallography experiments with minimal background scattering
Scientific Reports **5** (2015) p. 10451
12. C. David, P. Karvinen, M. Sikorski, I. Vartiainen, S. Song, C.J. Milne, A. Mozzanica, Y. Kayser, A. Diaz, I. Mohacsi, G. Carini, S. Herrmann, E. Färm, M. Ritala, D.M. Fritz, and A. Robert
Following the dynamics of matter with femtosecond precision using the X-ray streaking method
Scientific Reports **5** (2014) p. 7644

2014:

13. K. Bedner, V.A. Guzenko, A. Tarasov, M. Wipf, R.L. Stoop, S. Rigante, J. Brunner, W. Fu, C. David, M. Calame, J. Gobrecht and C. Schönenberger
Investigation of the dominant 1/f Noise Source in Silicon Nanowire Sensors
Sensors and Actuators B **191** (2014) p. 270 - 275

14. S.S. Sarkar, H.H. Solak, C. David, J.F. van der Veen
Pinhole diffraction holography for fabrication of high-resolution Fresnel Zone Plates
Optics Express **22** (2014) p. 1402-1412
15. J. Szlachetko, C.J. Milne, J. Hoszowska, J.-Cl. Dousse, W. Błachucki, J. Sà, Y. Kayser, M. Messerschmidt, R. Abela, S. Boutet, C. David, G. Williams, M. Pajek, B. Patterson, G. Smolentsev, J.A. van Bokhoven, and M. Nachttegaal
The electronic structure of matter probed with a single femtosecond hard x-ray pulse
Structural Dynamics **1** (2014) p. 021101-8
16. I. Vartiainen, R. Mokso, M. Stampanoni, and C. David
Halo suppression in full field X-ray Zernike phase contrast Microscopy
Optics Letters **39** (2014) p. 1601-1604
17. I. Mohacsi, P. Karvinen, I. Vartiainen, V.A. Guzenko, A. Somogyi, C. Kewish, P. Mercere and C. David
High efficiency X-ray nanofocusing by multilevel zone plates
Journal of Synchrotron Radiation **21** (2014) p. 497-501
18. Y. Kayser, S. Rutishauser, T. Katayama, T. Kameshima, H. Ohashi, U. Flechsig, M. Yabashi, and C. David
Wavefront metrology measurements at SACLA by means of x-ray grating interferometry
Optics Express **22** (2014) p. 9004-9015
19. I. Vartiainen, M. Warmer, D. Goeries, E. Herker, R. Reimer, C. David and A. Meents
X-ray Zernike phase contrast imaging of biological samples with tender X-rays at 50 nm resolution
Journal of Synchrotron Radiation **21** (2014) p. 1-5, doi:10.1107/S1600577514010388
20. T. Thüring, M. Abis, Z. Wang, C. David, M. Stampanoni,
X-ray phase-contrast imaging at 100 keV on a conventional source
Scientific Reports **4** (2014) p. 5198, doi:10.1038/srep05198
21. P. Karvinen, C. Borca, M. Willimann, B. Meyer, M. Birri, D. Grolimund, J. Patommel, G. Wellenreuther, G. Falkenberg, M. Guizar-Sicairos, A. Menzel and C. David
Kinoform diffractive lenses for efficient nano-focusing of hard X-rays
Optics Express **22** (2014) p. 16676-16685
22. P. Modregger, M. Kagias, S. Peter, V.A. Guzenko, C. David, and M. Stampanoni
Multiple scattering tomography
Physical Review Letters **113** (2014) p. 020801- 5
23. T. Zhou, U. Lundström, T. Thüring, S. Rutishauser, D.H. Larsson, M. Stampanoni, C. David, H.M. Hertz, and A. Burvall
Comparison of propagation- and grating-based x-ray phase-contrast imaging techniques with a liquid-metal-jet source
Proceedings of the SPIE **9033** (2014) p. 903353 doi: 10.1117/12.2043417
24. P. Modregger, S. Rutishauser, J. Meiser, C. David, and M. Stampanoni
Two-dimensional ultra-small angle X-ray scattering with grating interferometry
Applied Physics Letters **105** (2014) p. 024102-4
25. V.A. Guzenko, B. Pedrini, A. Menzel, C. David
Fabrication of nanoparticles with 3D shape control for X-ray scattering experiments
Microelectronic Engineering **121** (2014) p. 127-130
26. S. Lang, I. Zanette, M. Dominietto, M. Langer, A. Rack, G. Schulz, G. Le Duc, C. David, J. Mohr, F. Pfeiffer, B. Müller, T. Weitkamp
Comparing spatial and density resolution of grating- and propagation-based X-ray tomography of soft tissues
Journal of Applied Physics **116** (2014) p. 154903-12

2013:

27. S. Rutishauser, M. Bednarzik, I. Zanette, T. Weitkamp, M. Börner, J. Mohr, C. David
Fabrication of two-dimensional hard X-ray diffraction gratings
Microelectronic Engineering **101** (2013) p. 12 - 16
28. T.H. Jensen, M. Bech, T. Binderup, A. Böttiger, C. David, T. Weitkamp, I. Zanette, F. Rank, R. Feidenhans'l, A. Kjær, L. Højgaard, F. Pfeiffer
Imaging of Metastatic Lymph Nodes by X-ray Phase Contrast Tomography
PLoS ONE **8** (2013) p. e54047
29. S. Rutishauser, A. Rack, T. Weitkamp, Y. Kayser, C. David and A.T. Macrander
Heat bump on a monochromator crystal measured with X-ray grating interferometry
Journal of Synchrotron Radiation **20** (2013) p. 300 - 305

30. H. Wang, S. Berujon, I. Pape, S. Rutishauser, C. David, and K. Sawhney
X-ray wavefront characterization of a Fresnel zone plate using a two dimensional grating interferometer
Optics Letters **38** (2013) p. 827 - 829
31. A. Rack, T. Weitkamp, L. Assoufid, T. Rack, I. Zanette, Ch. Morawe, R. Kluender, C. David
Protocol to study wavefront preservation capabilities of reflective X-ray optics with coherent synchrotron light
Nuclear Instruments in Physics A **710** (2013) p. 101–105
32. B. Pedrini, A. Menzel, M. Guizar-Sicairos, V.A. Guzenko, S. Gorelick, C. David, B.D. Patterson, and R. Abela
Two-dimensional structure from random multi-particle X-ray scattering images using cross-correlations
Nature Communications **4** (2013) p. 1647-9
33. J. Vila-Comamala, M. Wojcik, A. Diaz, M. Guizar-Sicairos, C.M. Kewish, S. Wang and C. David
Angular spectrum simulation of X-ray focusing by Fresnel zone plates
Journal of Synchrotron Radiation **20** (2013) p. 397–404
34. T. Thüring, S. Hämmerle, S. Weiss, J. Nüesch, J. Meiser, J. Mohr, C. David, M. Stampanoni
Compact hard X-ray grating interferometry for table top phase contrast micro CT
Proceedings of the SPIE - The International Society for Optical Engineering **8668** (2013) p. 866813-1
35. T. Thüring, R. Guggenberger, H. Alkadhi, J. Hodler, M. Vich, Z. Wang, C. David, M. Stampanoni
Human hand radiography using X-ray differential phase contrast combined with dark-field imaging
Skeletal Radiology **42** (2013) p. 827-835
36. P.R. Willmott, D. Meister, S.J. Leake, M. Lange, A. Bergamaschi, M. Böge, M. Calvi, C. Cancellieri, N. Casati, A. Cervellino, Q. Chen, C. David, U. Flechsig, F. Gozzo, B. Henrich, S. Jäggi-Spielmann, B. Jakob, I. Kalichava, P. Karvinen, J. Krempasky, A. Lüdeke, R. Lüscher, S. Maag, C. Quitmann, M.L. Reinle-Schmitt, T. Schmidt, B. Schmitt, A. Streun, I. Vartiainen, M. Vitins, X. Wang and R. Wullschleger
The Materials Science beamline upgrade at the Swiss Light Source
Journal of Synchrotron Radiation **20** (2013) p. 667–682
37. T. Thüring, T. Zhou, U. Lundström, A. Burvall, S. Rutishauser, C. David, H. M. Hertz, and M. Stampanoni
X-ray grating interferometry with a liquid-jet anode source
Applied Physics Letters **103** (2013) p. 091105
38. C. Grünzweig, J. Kopecek, B. Betz, A. Kaestner, K. Jefimovs, J. Kohlbrecher, U. Gasser, O. Bunk, C. David, T. Donath, F. Pfeiffer
Quantification of the neutron dark-field imaging signal in grating interferometry
Physical Review B **88** (2013) p. 125104
39. H. Wang, S. Berujon, I. Pape, S. Rutishauser, C. David, K. Sawhney
At-wavelength metrology using the moiré fringe analysis method based on a two dimensional grating interferometer
Nuclear Instruments and Methods in Physics Research A **710** (2013) p. 78–81
40. M. Stampanoni, Z. Wang, T. Thüring, C. David, E. Rössl, U. van Stevendaal, T. Köhler, M. Trippel, G. Singer, R.A. Kubik-Huch, M.K. Hohl and N. Hauser
Toward clinical differential phase contrast mammography: preliminary evaluations and image processing schemes
Journal of Instrumentation **8** (2013) p. C05009, doi:10.1088/1748-0221/8/05/C05009
41. K. Morgan, P. Modregger, S.C. Irvine, S. Rutishauser, V.A. Guzenko, M. Stampanoni, C. David
A sensitive x-ray phase contrast technique for rapid imaging, using a single phase grid analyser
Optics Letters **38** (2013) p. 4605 – 4608
42. K. Bedner, V.A. Guzenko, A. Tarasov, M. Wipf, R.L. Stoop, D. Just, S. Rigante, O. Knopfmacher, W. Fu, R.A. Minamisawa, C. David, M. Calame, J. Gobrecht and C. Schönenberger
pH Response of Silicon Nanowire Sensors: Impact of the Nanowire Width and the Gate Oxide
Sensors and Materials **25** (2013) p. 567 - 576
43. I. Mohacsi, P. Karvinen, I. Vartiainen, A. Diaz, A. Somogyi, C.M. Kewish, P. Mercere, C. David
High efficiency X-ray nanofocusing by the blazed stacking of binary zone plates
Proceedings of the SPIE **8851** (2013) doi:10.1117/12.2022640
44. A. Meents, B. Reime, N. Stuebe, P. Fischer, M. Warmer, D. Goeries, J. Roever, J. Meyer, J. Fischer, A. Burkhardt, I. Vartiainen, P. Karvinen, C. David
Development of an in-vacuum X-ray microscope with cryogenic sample cooling for beamline P11 at PETRA III
Proceedings of the SPIE **8851** (2013) p. 88510K1-doi:10.1117/12.2022640
45. T. Zhou, U. Lundström, T. Thüring, S. Rutishauser, D.H. Larsson, H.M. Hertz, M. Stampanoni, C. David, and A. Burvall
Comparison of x-ray phase-contrast imaging methods with a liquid-metal-jet source
Optics Express **21** (2013) p. 30183 - 30195

2012:

46. P. Modregger, F. Scattarella, B. R. Pinzer, C. David, and M. Stampanoni
Imaging the ultra-small angle X-ray scattering distribution with grating interferometry
Physical Review Letters **108** (2012) p. 048101 - 4
47. A. Schubert, A. Bergamaschi, C. David, R. Dinapoli, S. Elbracht-Leong, S. Gorelick, H. Graafsma, B. Henrich, I. Johnson, M. Lohmann, A. Mozzanica, V. Radicci, R. Rassool, L. Schädler, B. Schmitt, X. Shi, and B. Sobott
Micron-resolution of a charge integrating microstrip detector with single photon sensitivity
Journal of Synchrotron Radiation **19** (2012) p. 359–365
48. S. Bérújon, H. Wang, I. Pape, K. Sawhney, S. Rutishauser, C. David
Sub-micron phase contrast imaging with a Fresnel Zone Plate and a two dimensional grating interferometer
Optics Letters **37** (2012) p. 1622 - 1624
49. S. Rutishauser, L. Samoylova, J. Krzywinski, O. Bunk, J. Grünert, H. Sinn, M. Cammarata, D.M. Fritz, and C. David
Exploring the wavefront of hard X-ray free-electron laser radiation
Nature Communications **3** (2012) p. 947 - 4
50. J. Vila-Comamala, Y. Pan, J.J. Lombardo, W.M. Harris, W.K.S. Chiu, C. David, Y. Wang
Zone-doubled Fresnel Zone Plates for High-Resolution Hard X-ray Full-Field Transmission Microscopy
Journal of Synchrotron Radiation **19** (2012) p. 705-709
51. J. Keckes, M. Bartosik, R. Daniel, C. Mitterer, G. Maier, W. Ecker, J. Vila-Comamala, C. David, S. Schoeder, M. Burghammer
X-ray nanodiffraction reveals strain and microstructure evolution in nanocrystalline thin films
Scripta Materialia **67** (2012) p. 748–751
52. I. Zanette, M. Bech, A. Rack, G. Le Duc, P. Tafforeau, C. David, J. Mohr, F. Pfeiffer, and T. Weitkamp
Trimodal low-dose x-ray tomography
Proceedings of the National Academy of Sciences **109** (2012) p. 10199-10204
53. G. Schulz, T. Weitkamp, I. Zanette, F. Pfeiffer, M. Müller-Gerble, C. David, and B. Müller,
Asymmetric rotational axis reconstruction of grating-based X-ray phase contrast data of the human cerebellum
Proceedings of the SPIE - The International Society for Optical Engineering **8506** (2012) p. 850604-1
54. I. Zanette, S. Rutishauser, C. David, F. Pfeiffer, J. Mohr, T. Weitkamp
Multidirectional X-ray dark-field imaging with two-dimensional gratings
AIP Conference Proceedings **1466** (2012) p. 12-17
55. C. David, S. Rutishauser, M. Sprung, I. Zanette, T. Weitkamp,
X-Ray Grating Interferometry - Applications in Metrology and Wave Front Sensing
AIP Conference Proceedings **1466** (2012) p. 23-28
56. T. Weitkamp, I. Zanette, F. Pfeiffer, C. David
Design aspects of X-ray grating interferometry
AIP Conference Proceedings **1466** (2012) p. 84-89
57. Z. Wang, T. Thüning, C. David, E. Rössl, M. Trippel, R.A. Kubik-Huche, G. Singer, M.K. Hohl, N. Hauser, M. Stampanoni,
Phase-contrast enhanced mammography: A new diagnostic tool for breast imaging
AIP Conference Proceedings **1466** (2012) p. 103-106
58. R.A. Minamisawa, M. Süess, R. Spolenak, J. Faist, C. David, K.K. Bourdelle, J. Gobrecht, and H. Sigg,
Top-down fabricated silicon nanowires under tensile elastic strain up to 4.5%
Nature Communications **3** (2012) p. 1096
59. J. Szlachetko, M. Nachttegaal, E. de Boni, M. Willimann, O. Safonova, J. Sa, G. Smolentsev, M. Szlachetko, J.A. van Bokhoven, J.-Cl. Dousse, J. Hozzowska, Y. Kayser, P. Jagodzinski, A. Bergamaschi, B. Schmid, C. David, A. Lücke
A von Hamos x-ray spectrometer based on a segmented-type diffraction crystal for single-shot x-ray emission spectroscopy and time-resolved resonant inelastic x-ray scattering studies
Review of Scientific Instruments **83** (2012) p. 103105
60. G. Schulz, C. Waschkies, F. Pfeiffer, I. Zanette, T. Weitkamp, C. David, and B. Müller
Multimodal imaging of human cerebellum: grating-based x-ray phase tomography, magnetic resonance microscopy and histology
Scientific Reports **2** (2012) p. 824
61. P. Karvinen, S. Rutishauser, A. Mozzanica, D. Greiffenberg, P.N. Juranić, A. Menzel, A. Lutman, J. Krzywinski, D.M. Fritz, H.T. Lemke, M. Cammarata, and C. David
Single-shot analysis of hard X-ray laser radiation using a non-invasive grating spectrometer
Optics Letters **37** (2012) p. 5073 - 5075

2011:

62. J. Vila-Comamala, S. Gorelick, E. Färm, C.M. Kewish, A. Diaz, R. Barrett, V.A. Guzenko, M. Ritala, and C. David
Ultra-high resolution zone-doubled diffractive X-ray optics for the multi-keV regime
Optics Express **19** (2011) p. 175 - 184
63. M. Chabior, T. Donath, C. David, O. Bunk, M. Schuster, and F. Pfeiffer
Beam hardening effects in grating-based x-ray phase-contrast imaging
Medical Physics **38** (2011) p. 1189 - 1195
64. S.A. McDonald, F. Marone, C. Hintermüller, G. Mikuljan, C. David, M. Stampanoni
Phase Contrast X-Ray Tomographic Microscopy for Biological and Materials Science Applications.
Advanced Engineering Materials **13** (2011) p. 116 - 121
65. T. Jensen, A. Böttiger, M. Bech, I. Zanette, T. Weitkamp, S. Rutishauser, C. David, E. Reznikova, J. Mohr, L. Bager Christensen, E. Olsen, R. Feidenhans'l, F. Pfeiffer
X-ray phase-contrast tomography of porcine fat and rind
Meat Science **88** (2011) p. 379 – 383
66. B. Päivänranta, P. Sahoo, C. David, V. Auzelyte, Y. Ekinci, H.H. Solak, E.J. Tocce, C. Liu, K.O. Stuen, and P.F. Nealey
Nanofabrication of anti-reflective quartz surfaces using block copolymer structures
ACS Nano **5** (2011) p. 1860 – 1864
67. S. Rutishauser, I. Zanette, T. Donath, A. Sahlholm, J. Linnros, and C. David
Structured scintillator for hard X-ray grating interferometry
Applied Physics Letters **98** (2011) p. 171107-3
68. T. Weitkamp, I. Zanette, C. David, J. Baruchel, M. Bech, P. Bernard, H. Deyhle, T. Donath, J. Kenntner, S. Lang, J. Mohr, B. Müller, F. Pfeiffer, E. Reznikova, S. Rutishauser, G. Schulz, A. Tapfer and J.-P. Valad
Recent developments in X-ray Talbot interferometry at ESRF-ID19
Proceedings of the SPIE - The International Society for Optical Engineering **7804** (2011) p. 780406
69. J. Herzen, F. Beckmann, T. Donath, M. Ogurreck, C. David, F. Pfeiffer, J. Mohr, E. Reznikova, S. Riekehr, A. Haibel, G. Schulz, B. Müller, and A. Schreyer
X-ray grating interferometer for imaging at a second-generation synchrotron radiation source
Proceedings of the SPIE - The International Society for Optical Engineering **7804** (2011) p. 780407
70. G. Schulz, A. Morel, M.S. Imholz, H. Deyhle, T. Weitkamp, I. Zanette, F. Pfeiffer, C. David, M. Müller-Gerbl, and B. Müller
Evaluating the microstructure of human brain tissues using synchrotron radiation-based micro computed tomography
Proceedings of the SPIE - The International Society for Optical Engineering **7804** (2011) p. 78040F
71. S. Gorelick, J. Vila-Comamala, V.A. Guzenko, R. Barrett, M. Salomé and C. David
High efficiency Fresnel zone plates for hard X-rays by 100 keV e-beam lithography and electroplating
Journal of Synchrotron Radiation **18** (2011) p. 442 - 446
72. S.S. Sarkar, H.H. Solak, M. Saidani, C. David, J.F. van der Veen,
High resolution Fresnel zone plate fabrication by achromatic spatial frequency multiplication with extreme ultraviolet radiation
Optics Letters **36** (2011) p. 1860-1862
73. E. Kleymenov, J. van Bokhoven, C. David, P. Glatzel, M. Janousch, R. Alonso-Mori, M. Studer, M. Willmann, A. Bergamaschi, B. Henrich, and M. Nachttegaal
Five-element Johann-type X-ray emission spectrometer with a single-photon-counting pixel detector
Review of Scientific Instruments **82** (2011) p. 065107-7
74. M. Stampanoni, Z. Wang, T. Thüning, C. David, E. Rössl, M. Trippel, G. Singer, R.A. Kubik-Huch, M.K. Hohl, N. Hauser
The First Analysis and Clinical Evaluation of Native Breast Tissue using Differential Phase Contrast Mammography
Investigative Radiology **46** (2011) p. 801–806
75. C. David, S. Gorelick, S. Rutishauser, J. Krzywinski, J. Vila-Comamala, V.A. Guzenko, O. Bunk, E. Färm, M. Ritala, M. Cammarata, D.M. Fritz, R. Barrett, L. Samoylova, J. Grünert, and H. Sinn
Nanofocusing of hard X-ray free electron laser pulses diamond based Fresnel zone plates
Scientific Reports **1** (2011) 57
76. T. Thüning, P. Modregger, T. Grund, J. Kenntner, C. David, and M. Stampanoni
High resolution, large field of view X-ray differential phase contrast imaging on a compact setup
Applied Physics Letters **99** (2011) p. 041111
77. J. Vila-Comamala, S. Gorelick, V.A. Guzenko, and C. David
3D Nanostructuring of Hydrogen Silsesquioxane Resist by 100 keV Electron Beam Lithography
Journal of Vacuum Science and Technology B **29** (2011) p. 06F301-3

78. S. Gorelick, J. Vila-Comamala, V.A. Guzenko, C. David
High aspect ratio nanostructuring by high energy electrons and electroplating
Microelectronic Engineering **88** (2011) p. 2259 - 2262
79. B. Päivänranta, H. Merbold, R. Giannini, L. Büchi, S. Gorelick, C. David, J.F. Löffler, T. Feurer, and Y. Ekinci
High aspect ratio plasmonic nanostructures for biosensing applications
ACS Nano **5** (2011) p. 6374 - 6382
80. H. Wang, K. Sawhney, S. Berujon, E. Ziegler, S. Rutishauser, C. David
X-ray wavefront characterization with rotating shearing interferometer
Optics Express **19** (2011) p. 16550 - 16559
81. P. Modregger, B.R. Pinzer, T. Thüring, C. David, and M. Stampanoni
Sensitivity of grating interferometry
Optics Express **19** (2011) p. 18324 - 18338
82. M. Chabior, T. Donath, C. David, M. Schuster, C.G. Schroer, and F. Pfeiffer
Signal-to-noise in x-ray dark-field imaging using a grating interferometer
Journal of Applied Physics **110** (2011) p. 053105 - 8
83. T. Weitkamp, I. Zanette, G. Schulz, M. Bech, S. Rutishauser, S. Lang, T. Donath, A. Tapfer, H. Deyhle, P. Bernard, J.-P. Valade, E. Reznikova, J. Kenntner, J. Mohr, B. Müller, F. Pfeiffer, C. David, and J. Baruchel
X-ray Grating Interferometry at ESRF: Applications and Recent Technical Developments
AIP Conference Proceedings **1365** (2011) p. 28 - 31
84. S. Gorelick, J. Vila-Comamala, V.A. Guzenko, R. Barrett, M. Salomé, and C. David
High-Efficiency Gold Fresnel Zone Plates for Multi-keV X-rays
AIP Conference Proceedings **1365** (2011) p. 88 - 91
85. V.A. Guzenko, J. Romijn, J. Vila-Comamala, S. Gorelick, and C. David
Efficient E-Beam Lithography Exposure Strategies for Diffractive X-ray Optics
AIP Conference Proceedings **1365** (2011) p. 92 - 95
86. J. Vila-Comamala, S. Gorelick, E. Färm, C. M. Kewish, A. Diaz, V.A. Guzenko, R. Barrett, J. Raabe, A. Menzel, O. Bunk, M. Ritala, and C. David
Zone-Doubled Fresnel Zone Plates for Scanning Transmission X-ray Microscopy
AIP Conference Proceedings **1365** (2011) p. 192 - 195
87. M. Stampanoni, F. Marone, J. Vila-Comamala, S. Gorelick, C. David, P. Trtik, K. Jefimovs, and R. Mokso
Hard X-ray Phase-Contrast Tomographic Nanoimaging
AIP Conference Proceedings **1365** (2011) p. 239 - 242
88. I. Zanette, S. Rutishauser, C. David, and T. Weitkamp
X-ray Interferometry with Two-Dimensional Gratings
AIP Conference Proceedings **1365** (2011) p. 325 - 328
89. J. Vila-Comamala, A. Diaz, M. Guizar-Sicairos, A. Manton, C. M. Kewish, A. Menzel, O. Bunk and C. David
Characterization of high-resolution diffractive x-ray optics by ptychographic coherent diffractive imaging
Optics Express **19** (2011) p. 21333 - 21344
90. J. Vila-Comamala, A. Diaz, M. Guizar-Sicairos, S. Gorelick, V.A. Guzenko, P. Karvinen, C.M. Kewish, E. Färm, M. Ritala, A. Manton, O. Bunk, A. Menzel, C. David
Characterization of a 20-nm hard x-ray focus by ptychographic coherent diffractive imaging
Proceedings of the SPIE - The International Society for Optical Engineering **8139** (2011) p. 81390E-1
91. B. Terhalle, A. Langner, B. Päivänranta, V.A. Guzenko, C. David, and Y. Ekinci
Generation of EUV vortex beams using computer generated holograms
Optics Letters **36** (2011) p. 4143 - 4145
92. I. Zanette, T. Weitkamp, S. Lang, M. Langer, J. Mohr, C. David, J. Baruchel
Quantitative phase and absorption tomography with an X-ray grating interferometer and synchrotron radiation
Physica Status Solidi A **208** (2011) p. 2526 - 2532
93. B. Päivänranta, A. Langner, E. Kirk, C. David, Y. Ekinci
Sub-10 nm patterning using EUV interference lithography
Nanotechnology **22** (2011) p. 375302-7
94. S. Rutishauser, T. Donath, C. David, F. Pfeiffer, F. Marone, P. Modregger, and M. Stampanoni
A tilted grating interferometer for full vector field differential x-ray phase contrast tomography
Optics Express **19** (2011) p. 24890 - 24896

95. S. Rutishauser, I. Zanette, T. Weitkamp, T. Donath, and C. David
At-wavelength characterization of refractive X-ray lenses using a two-dimensional grating interferometer
Applied Physics Letters **99** (2011) p. 221104-3
96. J. Herzen, T. Donath, F. Beckmann, M. Ogurreck, C. David, F. Pfeiffer, J. Mohr, and A. Schreyer
X-ray grating interferometer for materials-science imaging at a low-coherent wiggler source
Review of Scientific Instruments **82** (2011) p. 113711 - 6
97. T. Thüring, P. Modregger, B. Pinzer, S. Rutishauser, C. David, T. Grund, J. Kenntner, M. Stampanoni
Towards X-ray differential phase contrast imaging on a compact setup
Proceedings of the SPIE - The International Society for Optical Engineering **7961** (2011) p. 79611G
98. V.A.Guzenko, J. Ziegler, A. Savouchkina, C. Padeste, C. David
Fabrication of large scale arrays of metallic nanodots by means of high resolution e-beam lithography
Microelectronic Engineering **88** (2011) 1972 - 1974
- 2010:**
99. K. Nygård, O. Bunk, E. Perret, C. David and J.F. van der Veen
Diffraction gratings as small-angle X-ray scattering calibration standards
Journal of Applied Crystallography **43** (2010) p. 350–351
100. S. Gorelick, J. Vila-Comamala, V. Guzenko, R. Mokso, M. Stampanoni, C. David
Direct e-beam writing of high aspect ratio nanostructures in PMMA: a tool for diffractive x-ray optics fabrication
Microelectronic Engineering **87** (2010) p. 1052–1054
101. S.S. Sarkar, H.H. Solak, J. Raabe, C. David, J.F. van der Veen
Fabrication of Fresnel zone plates with 25 nm zone width using extreme ultraviolet holography
Microelectronic Engineering **87** (2010) p. 854–858
102. A. Diaz, C. Mocuta, J. Stangl, M. Keplinger, T. Weitkamp, F. Pfeiffer, C. David, E. Ziegler, T.H. Metzger and G. Bauer
Coherence and wavefront characterization of Si-111 monochromators using double grating interferometry
Journal of Synchrotron Radiation **17** (2010) p. 299–307
103. M. Stampanoni, R. Mokso, F. Marone, J. Vila-Comamala, S. Gorelick, P. Trtik, K. Jefimovs, C. David
Hard X-ray 3D phase-contrast nanoimaging
Physical Review B **81** (2010) p. 140105–4
104. J. Vila-Comamala, M. Dierolf, C.M. Kewish, P. Thibault, T. Pilvi, E. Färm, V. Guzenko, S. Gorelick, A. Menzel, O. Bunk, M. Ritala, F. Pfeiffer, and C. David
High Spatial Resolution STXM at 6.2 keV Photon Energy
AIP Conference Proceedings **1221** (2010) p. 80–84
105. I. Zanette, C. David, S. Rutishauser and T. Weitkamp
2D grating simulation for X-ray phase-contrast and dark-field imaging with a Talbot interferometer
AIP Conference Proceedings **1221** (2010) p. 73–79
106. M. Stampanoni, F. Marone, P. Modregger, B. Pinzer, T. Thüering, J. Vila-Comamala, C. David, R. Mokso
Tomographic Hard X-ray Phase Contrast Micro- and Nano-imaging at TOMCAT
AIP Conference Proceedings **1266** (2010) p. 13–17
107. C. Grünzweig, C. David, O. Bunk, J. Kohlbrecher, E. Lehmann, Y.W. Lai, R. Schäfer, S. Roth, P. Lejcek, J. Kopecek, and F. Pfeiffer
Visualizing the propagation of volume magnetization in bulk ferromagnetic materials by neutron grating interferometry
Journal of Applied Physics **107** (2010) p. 09D308
108. T.H. Jensen, M. Bech, and R. Feidenhans'l, O. Bunk, T. Donath, C. David, F. Pfeiffer
Directional X-Ray Dark-Field Imaging
Physics in Medicine and Biology **55** (2010) p. 3317–3323
109. M. Bech, O. Bunk, T. Donath, R. Feidenhans'l, C. David and F. Pfeiffer
Quantitative multimodal x-ray tomography: Absorption-, phase- and darkfield-contrast
Proceedings of the SPIE - The International Society for Optical Engineering **7622** (2010) 76220N
110. A. Menzel, C.M. Kewish, P. Kraft, B. Henrich, K. Jefimovs, J. Vila-Comamala, C. David, M. Dierolf, P. Thibault, F. Pfeiffer, O. Bunk
Scanning Transmission X-Ray Microscopy with a Fast Framing Pixel Detector
Ultramicroscopy **110** (2010) p. 1143–1147
111. J. Vila-Comamala, S. Gorelick, V.A. Guzenko, C. David, E. Färm and M. Ritala
Dense High Aspect Ratio Hydrogen Silsesquioxane (HSQ) Nanostructures by 100 keV Electron Beam Lithography
Nanotechnology **21** (2010) p. 285305–6

- 112.S. Gorelick, V.A. Guzenko, J. Vila-Comamala and C. David
Direct e-beam writing of dense and high aspect ratio nanostructures in thick layers of PMMA for electroplating
Nanotechnology **21** (2010) p. 295303–8
- 113.M. Bech, O. Bunk, T. Donath, R. Feidenhans'l, C. David and F. Pfeiffer
Quantitative X-Ray Dark-Field Computed Tomography
Physics in Medicine and Biology **55** (2010) p. 5529–5539
- 114.K. Nygård, D.K. Satapathy, E. Perret, C. Padeste, O. Bunk, C. David, J.F. van der Veen
Surface-Specific Ordering of Reverse Micelles in Confinement
Soft Matter **6** (2010) p. 4536–4539
- 115.K. Nygård, S. Gorelick, J. Vila-Comamala, E. Färm, A. Bergamaschi, A. Cervellino, F. Gozzo, B.D. Patterson, M. Ritala and C. David
Beam-induced damage on diffractive hard X-ray optics
Journal of Synchrotron Radiation **7** (2011) p. 786–790
- 116.G. Schulz, T. Weitkamp, I. Zanette, F. Pfeiffer, F. Beckmann, C. David, S. Rutishauser, B. Müller
High-resolution tomographic imaging of a human cerebellum: Comparison of absorption and grating based phase contrast
Journal of the Royal Society Interface **7** (2010) p. 1665–1676
- 117.T. Donath, F. Pfeiffer, O. Bunk, C. Grünzweig, E. Hempel, S. Popescu, P. Vock, C. David
Toward Clinical X-ray Phase-Contrast CT Demonstration of Enhanced Soft-Tissue Contrast in Human Specimen
Investigative Radiology **45** (2010) p. 445 - 452
- 118.I. Manke, N. Kardjilov, R. Schäfer, A. Hilger, M. Strobl, M. Dawson, C. Grünzweig, G. Behr, M. Hentschel, C. David, A. Kupsch, A. Lange, J. Banhart
Three-dimensional imaging of magnetic domains
Nature Communications **1** (2010) p. 125-6
- 119.I. Zanette, T. Weitkamp, T. Donath, S. Rutishauser, and C. David
A two-dimensional X-ray grating interferometer
Physical Review Letters **105** (2010) p. 248102 - 4
- 120.T.H. Jensen, M. Bech, I. Zanette, T. Weitkamp, C. David, H. Deyhle, S. Rutishauser, E. Reznikova, J. Mohr, R. Feidenhans'l, F. Pfeiffer
Directional x-ray dark-field imaging of strongly ordered systems
Physical Review B **82** (2010) p. 214103
- 121.M. Stampanoni, F. Marone, P. Modregger, B. Pinzer, T. Thüning, J. Vila-Comamala, C. David, R. Mokso
Tomographic Hard X-ray Phase Contrast Micro- and Nano-imaging at TOMCAT
AIP Conference Proceedings **1266** (2010) p. 13 - 17
- 122.M. Bech, T.H. Jensen, O. Bunk, T. Donath, C. David, T. Weitkamp, G. Le Duc, A. Bravin, P. Cloetens and F. Pfeiffer
Advanced Contrast Modalities for X-ray Radiology: Phase-Contrast and Dark-Field Imaging using a Grating Interferometer
Zeitschrift für medizinische Physik **20**, 1 (2010) p. 7 – 16

2009:

- 123.M. Bech, O. Bunk, C. David, R. Ruth, J. Rifkin, R. Loewen, R. Feidenhans'l and F. Pfeiffer
Hard X-ray Phase Contrast Imaging with Compact Synchrotron Radiation Source
Journal of Synchrotron Radiation **16** (2009) p. 1–5
- 124.M. Bech, T. H. Jensen, R. Feidenhans'l, O. Bunk, C. David, F. Pfeiffer
Soft-Tissue Phase-Contrast Tomography with X-Ray Tube Source
Physics in Medicine and Biology **54** (2009) p. 2747–2753
- 125.A. Diaz, C. Mocuta, J. Stangl, B. Mandl, C. David, J. Vila-Comamala, V. Chamard, T. H. Metzger, and G. Bauer
Coherent diffraction imaging of a single epitaxial InAs nanowire using a focused x-ray beam
Physical Review B **79** (2009) 125324–5
- 126.F. Pfeiffer, M. Bech, O. Bunk, T. Donath, B. Henrich, P. Kraft, and C. David
X-Ray Dark-Field and Phase-Contrast Imaging using a Grating Interferometer
Journal of Applied Physics **105** (2009) p. 102006–4
- 127.V. Auzelyte, C. Dais, P. Farquet, D. Grützmacher, L. Heyderman, F. Luo, S. Olliges, C. Padeste, P. Sahoo, T. Thomson, A. Turchanin, C. David, H. H. Solak
Extreme Ultraviolet Interference Lithography at the Paul Scherrer Institute
Journal of Micro- and Nanolithography **8**, (2009) p. 021204–10

128. T. Donath, F. Pfeiffer, O. Bunk, W. Groot, M. Bednarzik, C. Grünzweig, E. Hempel, S. Popescu, M. Hoheisel, C. David
Phase-Contrast Imaging and Tomography at 60 keV using a Conventional X-ray Tube
Review of Scientific Instruments **80** (2009) p. 053701–4
129. K. Nygård, D.K. Satapathy, J. Buitenhuis, E. Perret, O. Bunk, C. David, and J. F. van der Veen
Confinement-induced orientational alignment of quasi-2D fluids
Europhysics Letters **86** (2009) p. 66001–5
130. A. Diaz, C. Mocuta, J. Stangl, J. Vila, C. David, T.H. Metzger, G. Bauer
Spatially resolved strain within a single SiGe island investigated by x-ray scanning microdiffraction
Physica Status Solidi A **206** (2009) p. 1829–1832
131. S.A. McDonald, F. Marone, C. Hintermüller, G. Mikuljan, C. David, F. Pfeiffer, M. Stampanoni
Advanced phase-contrast imaging using a grating interferometer
Journal of Synchrotron Radiation **16** No. 4 (2009) p. 562–572
132. D. K. Satapathy, K. Nygård, O. Bunk, K. Jefimovs, E. Perret, A. Diaz, F. Pfeiffer, C. David and J.F. van der Veen
Buckling and layering transitions in confined colloids
Europhysics Letters **87** (2009) p. 34001–6
133. J. Herzen, T. Donath, F. Pfeiffer, O. Bunk, C. Padeste, F. Beckmann, A. Schreyer and C. David
Quantitative phase-contrast tomography of a liquid phantom using a conventional x-ray tube source
Optics Express **17**, No. 12 (2009) p. 10010–10018
134. J. Vila-Comamala, K. Jefimovs, T. Pilvi, J. Raabe, R.H. Fink, M. Senoner, A. Maaßdorf, M. Ritala, and C. David
Advanced Thin Film Technology for Ultrahigh Resolution X-Ray Microscopy
Ultramicroscopy **109** (2009) p. 1360–1364
135. T. Donath, M. Chabior, F. Pfeiffer, O. Bunk, E. Reznikova, J. Mohr, E. Hempel, S. Popescu, M. Hoheisel, M. Schuster, J. Baumann, and C. David
Inverse geometry for grating-based x-ray phase-contrast imaging
Journal of Applied Physics **106** (2009) p. 054703–7
136. A. Menzel, M. Dierolf, C. M. Kewish, P. Thibault, K. Jefimovs, C. David, M. Bech, T. H. Jensen, R. Feidenhans'l, A.-M. Heegaard, R. Hansen, T. Berthing, K. Martinez, J. A. Als-Nielsen, S. Kapishnikov, L. Leiserowitz, F. Pfeiffer, and O. Bunk
Advanced methods in scanning X-ray microscopy
Proceedings of the SPIE - The International Society for Optical Engineering **7378** (2009) p. 73780
137. C.N. Borca, D. Grolimund, M. Willimann, B. Meyer, K. Jefimovs, J. Vila-Comamala and C. David
The microXAS beamline at the Swiss Light Source: Towards nano-scale imaging
Journal of Physics: Conference Series **186** (2009) p. 012003
138. M. Stampanoni, F. Marone, G. Mikuljan, K. Jefimovs, P. Trtik, J. Vila-Comamala, C. David and R. Abela
Broadband X-ray full field microscopy at a superbend
Journal of Physics: Conference Series **186** (2009) p. 012018
139. F. Pfeiffer, C. David, O. Bunk, C. Poitry-Yamate, R. Grütter, B. Müller and T. Weitkamp
High-sensitivity phase-contrast tomography of rat brain in phosphate buffered saline
Journal of Physics: Conference Series **186** (2009) p. 012046
140. A. Menzel, C.M. Kewish, M. Dierolf, P. Thibault, P. Kraft, O. Bunk, K. Jefimovs, C. David and F. Pfeiffer
Hard X-ray scanning transmission microscopy with a 2D pixel array detector
Journal of Physics: Conference Series **186** (2009) p. 012054
141. S.S. Sarkar, P.K. Sahoo, H.H. Solak, C. David and J.F. van der Veen
Fresnel zone plates made by holography in the extreme ultraviolet region
Journal of Physics: Conference Series **186** (2009) p. 012071
142. J. Vila-Comamala, K. Jefimovs, T. Pilvi, M. Ritala, S.S. Sarkar, H.H. Solak, V.A. Guzenko, M. Stampanoni, F. Marone, J. Raabe, G. Tzvetkov, R.H. Fink, D. Grolimund, C.N. Borca, B. Kaulich and C. David
Advanced X-ray diffractive optics
Journal of Physics: Conference Series **186** (2009) p. 012078
143. K. Nygård, D.K. Satapathy, O. Bunk, E. Perret, J. Buitenhuis, C. David, and J.F. van der Veen
Grating-based holographic X-ray diffraction: theory and application to confined fluids
Journal of Applied Crystallography **42** (2009) p. 1129–1138
144. C.-P. Richter, S. Shintani-Smith, A. Fishman, C. David, I. Robinson, C. Rau
Imaging of cochlear tissue with a grating interferometer and hard X-rays
Microscopy Research and Technique **72** (2009) p. 902–907

- 145.K. Jefimovs, J. Vila-Comamala, M. Stampanoni, B. Kaulich, C. David
Beamshaping Condenser Lenses for Full-Field Transmission X-ray Microscopy
Journal of Synchrotron Radiation **15** (2008) p. 106 - 108
- 146.F. Pfeiffer, M. Bech, O. Bunk, C. Grünzweig, E.F. Eikenberry, Ch. Brönnimann, and C. David
Hard X-Ray Dark-field Imaging using a Grating Interferometer
Nature Materials **7** (2008) p. 134 - 137
- 147.M. Bech, O. Bunk, C. David, P. Kraft, C. Brönnimann, E.F. Eikenberry, and F. Pfeiffer
X-Ray Imaging with the PILATUS 100K Detector
Applied Radiation and Isotopes **66** (2008) p. 474–478
- 148.M. Dierolf, O. Bunk, S. Kynde, P. Thibault, I. Johnson, A. Menzel, K. Jefimovs, C. David, O. Marti, F. Pfeiffer
Ptychography & Lensless X-ray Imaging
Europhysics News **39** (2008) p. 22–24
- 149.I. Johnson, K. Jefimovs, O. Bunk, C. David, M. Dierolf, J. Gray, D. Renker, and F. Pfeiffer
Coherent diffractive imaging using phase front modifications
Physical Review Letters **100** (2008) p. 155503–4
- 150.C. Grünzweig, F. Pfeiffer, O. Bunk, T. Donath, G. Kühne, G. Frei, and C. David
Design, fabrication, and characterization of diffraction gratings for neutron phase contrast imaging
Review of Scientific Instruments **79** (2008) p. 053703–6
- 151.J. Vila-Comamala, K. Jefimovs, J. Raabe, B. Kaulich, C. David
Silicon Fresnel zone plates for high heat load x-ray microscopy,
Microelectronic Engineering **85** (2008) p. 1241–1244
- 152.K. Nygård, D.K. Satapathy, O. Bunk, F. Pfeiffer, C. David, and J. F. van der Veen
Dynamical theory for diffractive x-ray imaging of one-dimensional periodic objects
Applied Physics Letters **92** (2008) p. 214105
- 153.J. Baruchel, P. Bleuët, S. Bohic, A. Bravin, P. Coan, C. David, H. Elleaume, F. Estève, F. Peyrin, F. Pfeiffer, P. Suortti, T. Weitkamp
State of the Art and Perspectives of Biomedical Imaging at the ESRF
Synchrotron Radiation News **21** (2008) p. 30–41
- 154.P. Thibault, M. Dierolf, A. Menzel, O. Bunk, C. David, and F. Pfeiffer
High-resolution scanning X-ray diffraction microscopy,
Science **321** (2008) p. 379 - 382
- 155.C. Grünzweig, C. David, O. Bunk, M. Dierolf, G. Frei, G. Kühne, J. Kohlbrecher, R. Schäfer, P. Lejcek, H. Rønnow, F. Pfeiffer
Neutron Decoherence Imaging for Visualizing Bulk Magnetic Domain Structures
Physical Review Letters **101** (2008) p. 025504
- 156.M. Strobl, C. Grünzweig, A. Hilger, I. Manke, N. Kardjilov, C. David, F. Pfeiffer
Neutron dark-field tomography
Physical Review Letters **101** (2008) p. 123902-4
- 157.C. Grünzweig, C. David, O. Bunk, M. Dierolf, G. Frei, G. Kühne, R. Schäfer, S. Pofahl, H.M.R. Rønnow, and F. Pfeiffer
Bulk Magnetic Domain Wall Structures Visualized by Neutron Dark-Field Imaging
Applied Physics Letters **93** (2008) p. 112504
- 158.D.K. Satapathy, O. Bunk, K. Jefimovs, K. Nygård, H. Guo, E. Fuchsberger, F. Pfeiffer, C. David, G.H. Wegdam, J.F. van der Veen
Colloidal monolayer trapped near a charged wall: A synchrotron x-ray diffraction study
Physical Review Letters **101** (2008) p. 136103
- 159.B. Müller, S. Lang, M. Dominietto, M. Rudin, G. Schulz, H. Deyhle, M. Germann, F. Pfeiffer, C. David, T. Weitkamp
High-resolution tomographic imaging of microvessels
Proceedings of the SPIE–The International Society for Optical Engineering **7078** (2008) 70780B-1
- 160.M. Engelhardt, F. Pfeiffer, C. Kottler, C. David, C. Schroer, J. Baumann, M. Schuster
The Fractional Talbot Effect in High-Resolution Differential X-ray Phase Contrast Imaging
Journal of Microscopy **232**, No 1 (2008) p. 145–157
- 161.O. Bunk, D.K. Satapathy, F. Pfeiffer, A. Diaz, C. David, K. Nygård, E. Fuchsberger, C. Padeste, P.R. Willmott, B.D. Patterson, B. Schmitt, and J.F. van der Veen
Concentration profiles of colloidal fluids in one-dimensional confinement
Chimia **62** (2008) p. 789 - 792

162. T. Weitkamp, O. Bunk, F. Pfeiffer, C. David, J. Bruder, P. Cloetens
X-ray phase radiography and tomography of soft tissue using grating interferometry
European Journal of Radiology **68** (2008) p. S13–S17
163. F. Pfeiffer, C. David, O. Bunk, T. Donath, M. Bech, G. Le Duc, A. Bravin, and P. Cloetens,
Region-of-interest imaging in grating-based x-ray differential phase-contrast computed tomography,
Physical Review Letters **101** (2008) p. 168101
164. S.S. Sarkar, P.K. Sahoo, H.H. Solak, C. David, J.F. van der Veen
Fabrication of Fresnel zone plates by holography in the Extreme Ultra Violet (EUV) region,
Journal of Vacuum Science and Technology B **26** (2008) p. 2160–2163
165. K. Nygård, D.K. Satapathy, O. Bunk, A. Diaz, E. Perret, J. Buitenhuis, F. Pfeiffer, C. David, and J. F. van der Veen
Structure of confined fluids by x-ray interferometry using diffraction gratings
Optics Express **16** (2008) p. 20522
166. M. Stampanoni, F. Marone, G. Mikuljan, K. Jefimovs, P. Trtik, J. Vila-Comamala, C. David, R. Abela
Hierarchical, multimodal tomographic X-ray imaging at a superbend
Proceedings of the SPIE - The International Society for Optical Engineering **7078**, 7078V (2008)
167. T. Donath, F. Pfeiffer, O. Bunk, W. Groot, M. Bednarzik, C. Grünzweig, E. Hempel, S. Popescu, M. Hoheisel, C. David
Phase-Contrast Imaging and Tomography at 60 keV using a Conventional X-ray Tube
Proceedings of the SPIE - The International Society for Optical Engineering **7078**, 7078V (2008), 7078171–8
168. F. Pfeiffer, O. Bunk, C. David, M. Bech, G. Le Duc, A. Bravin, and P. Cloetens
Advances in the visualization of unstained brain tumors using grating-based x-ray phase-contrast tomography
Proceedings of the SPIE - The International Society for Optical Engineering **7078**, 7078V (2008), 707815
169. A. Menzel, P. Thibault, M. Dierolf, C.M. Kewish, O. Bunk, C. David, W. Leitenberger, and F. Pfeiffer,
Advancements in Ptychographical Coherent Diffractive Imaging,
Proceedings of the SPIE - The International Society for Optical Engineering **7076** (2008) p. 707609

2007

170. Y. Ekinci, H.H. Solak, and C. David
Extraordinary Optical Transmission in the UV Region through Aluminium Hole Arrays
Optics Letters **32** (2007) p. 172–174
171. J. M. Rodenburg, A.C. Hurst, A.G. Cullis, B.R. Dobson, F. Pfeiffer, O. Bunk, C. David, K. Jefimovs, I. Johnson
Hard X-ray lensless imaging of extended objects
Physical Review Letters **98** (2007) p. 034801–4
172. C. Kottler, C. David, F. Pfeiffer and O. Bunk
A two-directional approach for grating based differential phase contrast imaging using hard x-rays
Optics Express **15** (2007) p. 1175–1181
173. O. Bunk, A. Diaz, F. Pfeiffer, C. David, C. Padeste, H. Keymeulen, P.R. Willmott, B.D. Patterson, B. Schmitt, D.K. Satapathy, J.F. van der Veen, H. Guo and G.H. Wegdam
Confinement induced liquid ordering investigated by x-ray phase retrieval
Physical Review E **75** (2007) p. 021501–6
174. F. Pfeiffer, C. Kottler, O. Bunk, C. David
Hard X-ray Phase Tomography with Low-Brilliance Sources
Physical Review Letters **98** (2007) p. 108105–4
175. A. Jarre, J. Seeger, C. Ollinger, C. Fuhse, C. David, T. Salditt,
X-ray Waveguide Nanostructures - Design, Fabrication and Characterization
Journal of Applied Physics **101** (2007) p. 054306–6
176. C. Kottler, F. Pfeiffer, O. Bunk, C. Grünzweig, and C. David
Grating interferometer based scanning setup for hard x-ray phase contrast imaging
Review of Scientific Instruments **78** (2007) p. 043710–4
177. C. David, J. Bruder, T. Rohbeck, C. Kottler, C. Grünzweig, A. Diaz, O. Bunk, F. Pfeiffer
Fabrication of diffraction gratings for hard x-ray phase contrast imaging
Microelectronic Engineering **84** (2007) p. 1172–1177
178. G. Kopitkovas, T. Lippert, J. Venturini, C. David and A. Wokaun
Laser Induced Backside Wet Etching: Mechanisms and Fabrication of Micro-Optical Elements
Journal of Physics: Conference Series **59** (2007) p. 526–532

- 179.C. Grünzweig, G. Frei, E. Lehmann, G. Kühne, F. Pfeiffer, and C. David
Highly absorbing Gadolinium test device to characterize the performance of neutron imaging detector systems
Review of Scientific Instruments **78** (2007) p. 053708–4
- 180.K. Jefimovs, O. Bunk, F. Pfeiffer, D. Grolimund, J. F. van der Veen, C. David
Fabrication of Fresnel zone plates for hard x-rays
Microelectronic Engineering **84** (2007) p. 1467–1470
- 181.M. Engelhardt, J. Baumann, M. Schuster, C. Kottler, F. Pfeiffer, O. Bunk, and C. David,
High-resolution differential phase contrast imaging using a magnifying projection geometry with a microfocus X-ray source
Applied Physics Letters **90** (2007) p. 224101–3
- 182.O. Bunk, A. Diaz, F. Pfeiffer, C. David, D.K. Satapathy, J.F. van der Veen
Retrieving one-dimensional concentration profiles across microfluidic channels
Acta Crystallographica **A63** (2007) p. 306–314
- 183.C. Kottler, F. Pfeiffer, O. Bunk, C. Grünzweig, J. Bruder, R. Kaufmann, L. Tlustos, H. Walt, I. Briod, and C. David
Phase contrast x-ray imaging of large samples using an incoherent laboratory source
Physica Status Solidi A **204** (2007) p. 2728–2733
- 184.H. Keymeulen, A. Diaz, H.H. Solak, C. David, F. Pfeiffer, B.D. Patterson, J.F. van der Veen, M.P. Stoykovich, P.F. Nealey
Measurement of the X-Ray Dose-Dependent Glass Transition Temperature of Structured Polymer Films by X-Ray Diffraction
Journal of Applied Physics **102** (2007) p. 013528
- 185.C. David, T. Weitkamp, F. Pfeiffer, A. Diaz, J. Bruder, T. Rohbeck, A. Groso, O. Bunk, M. Stampanoni, and P. Cloetens
Hard x-ray phase imaging and tomography using a grating interferometer
Spectrochimica Acta Part B **62** (2007) p. 626–630
- 186.Y. Ekinici, H. H. Solak, C. David, and J.F. Löffler
Plasmonic nanostructures made from aluminum fabricated by EUV interference lithography
Proceedings of the SPIE–The International Society for Optical Engineering. **6717** (2007) 67170P-1
- 187.I.A. Vartanyants, I.K. Robinson, I. McNulty, C. David, P. Wochner, Th. Tschentscher,
Coherent X-ray Scattering and Lensless Imaging at European XFEL Facility
Journal of Synchrotron Radiation **14** (2007) p. 453–470
- 188.M. Engelhardt, J. Baumann, M. Schuster, C. Kottler, F. Pfeiffer, O. Bunk, and C. David,
Inspection of refractive x-ray lenses using high-resolution differential phase contrast imaging with a microfocus x-ray source
Review of Scientific Instruments **78** (2007) p. 093707
- 189.G. Kopitkovas, T. Lippert, N. Murazawa, C. David, A. Wokaun, J. Gobrecht, R. Winfield
Fabrication of Microoptical components in quartz
Applied Surface Science **254** (2007) p. 1073–1078
- 190.F. Pfeiffer, O. Bunk, C. Kottler, C. David
Tomographic reconstruction of three dimensional objects from hard x-ray differential phase contrast projection images
Nuclear Instruments and Methods in Physics Research **A 580** (2007) p. 925–928
- 191.A. Turchanin, M. Schnietz, M. El-Desawy, H.H. Solak, C. David, A. Götzhäuser
Fabrication of molecular nanotemplates in self-assembled monolayers by extreme ultraviolet induced chemical lithography
Small **3** (2007) p. 2114–2119
- 192.K. Jefimovs, J. Vila-Comamala, T. Pilvi, J. Raabe, M. Ritala, and C. David
A zone doubling technique to produce ultra-high resolution x-ray optics
Physical Review Letters **99** (2007) p. 264801
- 193.F. Pfeiffer, O. Bunk, C. Grünzweig, C. David, M. Bech, G. Le Duc, A. Bravin, and P. Cloetens
Grating based x-ray phase tomography for improved contrast in x-ray brain imaging
Physics in Medicine and Biology **52** (2007) p. 6923 - 6930

2006:

- 194.P. Müller-Buschbaum, E. Bauer, S. Pfister, S.V. Roth, M. Burghammer, U. Thiele, C. David, and C. Riekkel
Creation of multi-scale stripe-like patterns in thin polymer blend films
Europhysics Letters **73** (2006) p. 35–41
- 195.G. Kopitkovas, T. Lippert, C. David, A. Wokaun and J. Gobrecht
Fast laser micromachining of micro-optics in quartz and BaF₂
Journal of Laser Micro/Nanoengineering **1** (2006) p. 23–27

- 196.Y. Ekinici, H.H. Solak, C. David, and H. Sigg,
Bilayer Al wire grids as broadband and high-performance polarizers
Optics Express **14** (2006) p. 2323–2333
- 197.F. Pfeiffer, T. Weitkamp, O. Bunk, and C. David
Phase retrieval and differential phase contrast imaging with incoherent x-ray sources
Nature Physics **2** (2006) p. 258–261
- 198.C.A.F. Vaz, M. Kläui, J.A.C. Bland, L.J. Heyderman, C. David, and F. Nolting
Fundamental magnetic states of disk and ring elements
Nuclear Instruments and Methods B **246** (2006) p. 13–19
- 199.D. Backes, L.J. Heyderman, C. David, R. Schäublin, M. Kläui, H. Ehrke, U. Rüdiger, C.A.F. Vaz, J.A.C. Bland, T. Kasama, R.E. Dunin-Borokowski
Fabrication of Curved-Line Nanostructures on Membranes for Transmission Electron Microscopy Investigations of Domain Walls
Microelectronic Engineering **83** (2006) p. 1726–1729
- 200.P. Indelicato, E.O. Le Bigot, M. Trassinelli, D. Gotta, M. Hennebach, N. Nelms, C. David and L.M. Simons
Characterisation of a CCD array for Bragg spectroscopy
Review of Scientific Instruments **77** (2006) p. 043107–9
- 201.F. Pfeiffer, C. Grünzweig, O. Bunk, G. Frei, E. Lehmann, and C. David
Neutron Phase Imaging and Tomography
Physical Review Letters **96** (2006) p. 215505–4
- 202.A.C. von Philipsborn, S. Lang, J. Loeschinger, A. Bernard, C. David, D. Lehnert, F. Bonhoeffler, and M. Bastmeyer
Growth cone navigation in substrate-bound ephrin gradients
Development **133** (2006) p. 2487–2495
- 203.F. Pfeiffer, C. David, J. F. van der Veen, C. Bergemann
Nanometer Focusing Properties of Fresnel Zone Plates by Dynamical Diffraction Theory
Physical Review B **73** (2006) p. 245331
- 204.C. David, T. Weitkamp, T. Khan, F. Pfeiffer, O. Bunk, A. Diaz, T. Rohbeck, A. Groso, M. Stampanoni
Quantitative Phase Imaging and Tomography with Polychromatic X Rays
Proc. 8th Int. Conf. X-ray Microscopy XRM2005, IPAP Conf. Series **7** (2006) p. 346–348
- 205.B. Kaulich, D. Bacescu, J. Susini, C. David, E. Di Fabrizio, G.R.Morrison, P. Charalambous, J. Thieme, T. Wilhein, J. Kovac, D. Cocco, M. Salome, O. Dhez, T. Weitkamp, S. Cabrini, D. Cojoc, A. Gianonce
TwinMic - A European Twin X-ray Microscopy Station Commissioned at ELETTRA
Proc. 8th Int. Conf. X-ray Microscopy XRM2005, IPAP Conf. Series **7** (2006) p. 22–25
- 206.T. Weitkamp, C. David, C. Kottler, O. Bunk, F. Pfeiffer
Tomography with grating interferometers at low-brilliance sources
Proceedings of the SPIE - The International Society for Optical Engineering **6318** (2006) p. 6318-28
- 207.C. David and F. Pfeiffer
Phasenkontrastabbildung mit Röntgenstrahlung
Bulletin der Schweizerischen Gesellschaft für Strahlenbiologie und Medizinische Physik Nr. 61 (2006) p. 17–18
- 208.F. Pfeiffer, T. Weitkamp, and C. David
X-ray Phase Contrast Imaging using a Grating Interferometer
Europhysics News **37** (2006) p. 13–15
- 209.A. Groso, R. Abela, C. David, M. Stampanoni
A new method for phase contrast tomography
Proc. of Ninth International Conference on Synchrotron Radiation Instrumentation 2006,
AIP Conference Proceedings **879** (2006) p. 1912–1915
- 210.E. Ziegler, L. Peverini, I.V. Kozhevnikov, T. Weitkamp, C. David
On-Line Mirror Surfacing Monitored by X-ray Shearing Interferometry and X-ray Scattering
Proc. of Ninth International Conference on Synchrotron Radiation Instrumentation 2006,
AIP Conference Proceedings **879** (2006) p. 778–781
- 211.A.C. von Philipsborn, S. Lang, A. Bernard, J. Loeschinger, C. David, D. Lehnert, M. Bastmeyer, F. Bonhoeffler
Microcontact printing of axon guidance molecules for generation of graded patterns
Nature Protocols **1** (2006) p. 1322–1328