

Scientific Publications Dr. Christian David past 10 years

Last updated: December 2019

2019:

1. M. Makita, I. Vartiainen, I. Mohacsi, C. Coleman, A. Diaz, O. Jonsson, P. Juranic, N. Medvedev, A. Meents, A. Mozzanica, N. Opara, C. Padeste, V. Panneels, V. Saxena, M. Sikorski, S. Song, L. Vera, P. Willmott, P. Beaud, C. Milne, B. Ziaja-Motyka, and C. David
X-ray induced non-thermal melting of Bismuth at femto-second time scales
Scientific Reports **9** (2018) p. 602, <https://doi.org/10.1038/s41598-018-36216-3>
2. S. Gottlieb, B. Rösner, L. Evangelio, M. Fernández-Regúlez, A. Nogales, M.C. García-Gutiérrez, T.F. Keller, J. Fraxedas, T.A. Ezquerro, C. David, F. Perez-Murano
Self-Assembly Morphology of Block Copolymers in Sub-10 nm Topographical Guiding Patterns
Molecular Systems Design and Engineering (2019) DOI: 10.1039/c8me00046h
3. C. Svetina, R. Mankowsky, G. Knopp, F. Koch, G. Seniutinas, B. Rösner, A. Kubec, M. Lebugle, I. Mochi, M. Beck, C. Cirelli, J. Krempasky, C. Pradervand, J. Rouxel, G.F. Mancini, S. Zerdane, B. Pedrini, V. Esposito, G. Ingold, U. Wagner, U. Flechsig, R. Follath, M. Chergui, C. Milne, H.T. Lemke, C. David, and P. Beaud
Toward X-ray Transient Grating Spectroscopy
Optics Letters **44** (2019) p. 574 – 577
4. J. Crha, J. Vila-Comamala, E. Lehmann, C. David, P. Trtik
Light Yield Enhancement of the 157-Gadolinium Oxysulfide Scintillator Screen for the High-Resolution Neutron Imaging
MethodsX **6** (2019) p. 107 – 114, DOI: 10.1016/j.mex.2018.12.005
5. B. Rösner, P. Dudin, J. Bosgra, M. Hösch and C. David
Zone plates for angle-resolved photoelectron spectroscopy providing sub-micrometre resolution in the extreme ultraviolet regime
Journal of Synchrotron Radiation **26** (2019) p. 467 – 472, DOI: 10.1107/S1600577519000869
6. M. Lyubomirskiy, F. Koch, K.A. Abrashitova, V.O. Bessonov, N. Kokareva, A. Petrov, F. Seiboth, F. Wittwer, M. Kahnt, M. Seyrich, A.A. Fedyanin, C. David, and C.G. Schroer
Ptychographic characterisation of polymer compound refractive lenses manufactured by additive technology
Optics Express **27** (2019) p. 8639-8650, DOI: 10.1364/OE.27.008639
7. E. Jal, M. Makita, B. Rösner, C. David, F. Nolting, J. Raabe, T. Savchenko, A. Kleibert, F. Capotondi, E. Pedersoli, X. Liu, A. el dine Merhe, N. Jaouen, G. Malinowski, M. Hehn, B. Vodungbo, and J. Lüning,
Single shot time resolved magnetic absorption at Free Electron Laser
Physical Review B **99** (2019) p. 144305-9, DOI: 10.1103/PhysRevB.99.144305
8. G. Brenner, S. Dziarzhyski, P. Miedema, B. Rösner, C. David, and M. Beye
Towards single-shot X-ray absorption spectroscopy
Optics Letters **44** (2019) p. 2157 – 2160, DOI: 10.1364/OL.44.002157
9. M. Odstreil, M. Lebugle, M. Guizar-Sicairos, C. David, M. Holler
Towards optimized illumination for high-resolution ptychography
Optics Express **27** (2019) p. 14981 – 14997, DOI: 10.1364/OE.27.014981
10. M. Seaberg, R. Cojocar, S. Berujon, E. Ziegler, A. Jaggi, J. Krempasky, F. Seiboth, A. Aquila, Y. Liu, A. Sakdinawat, H.J. Lee, U. Flechsig, L. Patthey, T. Koyama, F. Koch, C. David, D. Zhu, L. Mikeš, A. Mancuso, H. Chapman and P. Vagovic
Wavefront Sensing at X-Ray Free Electron Lasers
Journal of Synchrotron Radiation **26** (2019) p. 1115 – 1126, DOI: 10.1107/S1600577519005721
11. S. Gliga, G. Seniutinas, A. Weber, C. David
Architectural structures open new dimensions in magnetism
Materials Today **26** (2019) p. 100 – 101, DOI: 10.1016/j.mattod.2019.05.001
12. N. Kujala, J. Grünert, J. Liu, M. Makita, A. Zozulya, M. Sprung and C. David
Characterizing transmissive diamond gratings as beam splitter for hard X-ray single-shot spectrometer of European XFEL
Journal of Synchrotron Radiation **26** (2019) p. 708 – 713, DOI: 10.1107/S1600577519003382
13. F. Döring, M. Risch, B. Rösner, M. Beye, P. Busse, K. Kubicek, L. Glaser, P. Miedema, J. Soltau, D. Raiser, V.A. Guzenko, L. Szabadics, L. Kochannek, M. Baumung, J. Buck, C. Jooss, S. Techert and C. David
A zone plate based two-color X-ray absorption spectrometer for fast and undistorted measurements with high resolution
Journal of Synchrotron Radiation **26** (2018) p. 1266 – 1271, DOI: 10.1107/S1600577519003898

14. M. Holler, M. Odstrcil, M. Guizar-Sicairos, M. Lebugle, E. Müller, S. Finizio, G. Tinti, C. David, J. Zusman, W. Unglaub, O. Bunk, J. Raabe, A.F.J. Levi, G. Aepli
3D imaging of integrated circuits with zoom from whole die to device scales
Nature Electronics **2** (2019) p. 464 – 470, DOI: 10.1038/s41928-019-0309-z
15. S. Marathe, M. Storm, V.S.C. Kuppilli, R. Harrison, G. Das, S.L.M. Schroeder, S. Cipiccia, F. Döring, C. David, and C. Rau
Development of synchrotron pink beam x-ray grating interferometer at the Diamond Light source I13-2 beamline
Proceedings of the SPIE **11113** (2019) p. 1111319-7 DOI 10.1117/12.2530698
16. A. Schropp, D. Brückner, J. Bulda, G. Falkenberg, J. Garrevoet, J. Hagemann, F. Seiboth, K. Spiers, F. Koch, C. David, M. Gambino, M. Veselý, F. Meirer, and C.G. Schroer
Full-field hard X-ray microscopy based on aberration-corrected Be CRLs
Proceedings of the SPIE **11112** (2019) p. 1111208-7, DOI: 10.1117/12.2528422

2018:

17. V. Lutz-Bueno, C. Arboleda, L. Leu, M.J. Blunt, A. Busch, A. Georgiadis, P. Bertier, J. Schmatz, Z. Varga, P. Villanueva-Perez, Z. Wang, M. Lebugle, C. David, M. Stampanoni, A. Diaz, M. Guizar-Sicairos and A. Menzel
Model-free classification of X-ray scattering signals applied to image segmentation
Journal of Applied Crystallography **51** (2018) p. 1 – 9
18. N. Opara, I. Mohacsi, M. Makita, D. Castano-Diez, A. Diaz, P. Juranic, M. Marsh, A. Meents, C. Milne, C. Padeste, V. Panneels, M. Sikorski, S. Song, H. Stahlberg, I. Vartiainen, L. Vera, M. Wang, P. Willmott, C. David
Demonstration of femtosecond X-ray pump X-ray probe diffraction on protein crystals
Structural Dynamics **5** (2018) p. 054303-9, DOI: 10.1063/1.5050618
19. J. Krempasky, F. Koch, A. Jaggi, C. Svetina, U. Flechsig, L. Patthey, S. Marathe, D. Battey, S. Cippiccia, C. Rau, F. Seiboth, M. Seaberg, P. Vagovic, C. David, and U.H. Wagner,
Inspecting adaptive optics with at-wavelength wavefront metrology
Proceedings of the SPIE **10761** (2018) p. 107610D-1, <https://doi.org/10.1117/12.2320532>
20. A. Do, M. Briat, A. Challeig, C. Rubbelynck, M. Lebugle, C. David, P. Troussel
Fabrication and resolution measurements of a double Fresnel zone plate optics
Review of Scientific Instruments **89** (2018) p. 10G122, <https://doi.org/10.1063/1.5039326>
21. M. Lebugle, F. Dworkowski, A. Pauluhn, V.A. Guzenko, N. Meier, D. Ferreira Sanchez, D. Grolimund, M. Wang, C. David
A high-intensity X-ray microbeam for macromolecular crystallography using silicon kinoform diffractive lenses
Applied Optics **57** (2018) p. 9032 - 9039, <https://doi.org/10.1364/AO.57.009032>
22. P. Villanueva-Perez, B. Pedrini, R. Mokso, P. Vagovic, V.A. Guzenko, S.J. Leake, P.R. Willmott, P. Oberta, C. David, H.N. Chapman, M. Stampanoni
Coherent hard X-ray multi-projection imaging for single-shot approaches
Optica **5** (2018) p. 1521 – 1524
23. M. Kagias, Z. Wang, V.A. Guzenko, C. David, M. Stampanoni, K. Jefimovs
Fabrication of Au gratings by seedless electroplating for X-ray grating interferometry
Materials Science in Semiconductor Processing **92** (2018) p. 73 – 79, <https://doi.org/10.1016/j.mssp.2018.04.015>
24. G. Seniutinas, E. Brasselet, A. Balčytis, C. David, S. Juodkazis
Diamond: A gem for micro-optics - Micro-optical elements for a variety of applications
Materials Today **21** (2018) p. 798 – 799, doi: 10.1016/j.mattod.2018.08.001
25. S. Borrelli, G.L. Orlandi, M. Bednarzik, C. David, E. Ferrari, V.A. Guzenko, C. Ozkan-Loch, E. Prat, and R. Ischebeck
Generation and measurement of sub-micrometer relativistic electron beams
Nature Communications Physics **1** (2018) p. 52 – 8, DOI: 10.1038/s42005-018-0048-x
26. E. Ferrari, R. Ischebeck, M. Bednarzik, S. Bettoni, S. Borrelli, H.-H. Braun, M. Calvi, C. David, M. Dehler, F. Frei, T. Garvey, V.A. Guzenko, N. Hiller, P. Hommelhoff, J. McNeur, C. Ozkan-Loch, E. Prat, S. Reiche, A. Romann, B. Sarafinov, V. Schlott, L. Rivkin
The ACHIP experimental chambers at the Paul Scherrer Institut
Nuclear Instruments and Methods in Physics Research A **907** (2018) p. 244 – 247, <https://doi.org/10.1016/j.nima.2018.02.112>
27. P. Juranić, J. Rehanek, C. Pradervand, R. Ischebeck, C. Erny, P. Heimgartner, I. Gorgisyan, G. Seniutinas, C. David, C. Hauri and L. Patthey
SwissFEL Aramis Beamline Photon Diagnostics
Journal of Synchrotron Radiation **25** (2018) p. 238–1248

28. G. Seniutinas, A. Weber, C. Padeste, I. Sakellari, M. Farsari, and C. David
Beyond 100 nm Resolution in 3D Laser Lithography – Post Processing Solutions
Microelectronic Engineering **191** (2018) p. 25-31
29. B. Rösner, F. Koch, F. Döring, J. Bosgra, V.A. Guzenko, E. Kirk, M. Meyer, J.L. Ornelas, R.H. Fink, S. Swaraj, R. Belkhou, B. Watts, J. Raabe, C. David
Exploiting Atomic Layer Deposition for Fabricating Sub-10 nm X-ray Lenses
Microelectronic Engineering **191** (2018) p. 91–96
30. A. Cattoni, D. Mailly, O. Dalstein, M. Faustini, G. Seniutinas, B. Rösner, C. David
Sub-10 nm Electron and Helium Ion Beam Lithography Using a Recently Developed Alumina Resist
Microelectronic Engineering **193** (2018) p. 18–22
31. M. Graczyk, A. Cattoni, B. Rösner, G. Seniutinas, A. Kvennefors, A. Löfstrand, D. Mailly, C. David, I. Maximov
Nanoimprint Stamps with Ultra-High Resolution: Optimal Fabrication Techniques
Microelectronic Engineering **190** (2018) p. 73–78
32. M.P. Olbinado, J. Grenzer, A. Pelka, P. Pradel, T. De Resseguier, P. Vagovic, M.-C. Zdora, V.G. Guzenko, C. David, and A. Rack
Indirect detector systems for various single-bunch, full-field, hard X-ray imaging at beamline ID19 of the European Synchrotron
Journal of Instrumentation **13** (2018) p. C04004, DOI: 10.1088/1748-0221/13/04/C04004
33. P. Villanueva-Perez, B. Pedrini, R. Mokso, P. Vagovic, V.A. Guzenko, S. Leake, P.R. Willmott, C. David, H.N. Chapman, and M. Stampanoni,
Coherent Hard X-ray Multiprojection Imaging
Microscopy and Microanalysis **24** (2018) p. 50 – 51, doi:10.1017/S1431927618012680
34. S. Flenner, E. Larsson, K. Furlan, D. Laipple, M. Storm, F. Wilde, R. Blick, G.A. Schneider, R. Zierold, R. Janssen, C. David, F. Beckmann, M. Müller and I. Greving
Nanotomography of Inverse Photonic Crystals Using Zernike Phase Contrast
Microscopy and Microanalysis **24** (2018) p. 146 – 147, doi:10.1017/S1431927618013120
35. F. Döring, F. Marschall, Z. Yin, B. Rösner, M. Beye, P. Miedema, K. Kubiček, L. Glaser, D. Raiser, J. Soltau, V.A. Guzenko, J. Viehhaus, J. Buck, M. Risch, S. Techert and C. David
1D-Full Field Microscopy of Elastic and Inelastic Scattering with Transmission off-axis Fresnel Zone Plates
Microscopy and Microanalysis **24** (2018) p. 182 – 183, doi:10.1017/S1431927618013260
36. A. Schropp, D. Brückner, J. Bulda, G. Falkenberg, J. Garrevoet, F. Seiboth, F. Wittwer, F. Koch, C. David, and C.G. Schroer
Scanning Hard X-Ray Microscopy Based on Be CRLs
Microscopy and Microanalysis **24** (2018) p. 186 – 187, doi:10.1017/S1431927618013284
37. M. Storm, S. Cipiccia, S. Marathe, V.S.C. Kuppili, F. Döring, C. David and C. Rau
The Diamond I13-2 Transmission X-ray Microscope: Current Status and Future Developments
Microscopy and Microanalysis **24** (2018) p. 216 – 218, doi:10.1017/S1431927618013430
38. I. Greving, S. Flenner, E. Larsson, M. Storm, F. Wilde, E. Lilleodden, T. Dose, H. Burmester, L. Lottermoser, C. David and F. Beckmann
Full-Field Hard X-Ray Microscope Designed for Materials Science Applications
Microscopy and Microanalysis **24** (2018) p. 226 – 227, doi:10.1017/S143192761801348X
39. M. Scheel, J. Perrin, F. Koch, V. Yurgens, V. Le Roux, J.-L. Giorgetta, K. Desjardins, C. Menneglier, S. Zhang, C. Engblom, Y.-M. Abiven, G. Cauchon, C. Bourgoïn, A. Lestrade, T. Moreno, F. Polack, C. David and T. Weitkamp
Toward Hard X-ray Transmission Microscopy at the ANATOMIX Beamline of Synchrotron SOLEIL
Microscopy and Microanalysis **24** (2018) p. 246 – 247, doi:10.1017/S1431927618013582
40. C. David, B. Rösner, F. Döring, V.A. Guzenko, F. Koch, M. Lebugle, F. Marschall, G. Seniutinas, J. Raabe, B. Watts, D. Grolimund, Z. Yin, M. Beye, S. Techert, J. Viehhaus, G. Falkenberg, C. Schroer
Diffraction X-ray Optics for Synchrotrons and Free-Electron Lasers
Microscopy and Microanalysis **24** (2018) p. 264 – 267, doi:10.1017/S1431927618013673
41. B. Rösner, F. Koch, F. Döring, V.A. Guzenko, M. Meyer, J.L. Ornelas, A. Späth, R.H. Fink, S. Stanescu, S. Swaraj, R. Belkhou, B. Watts, J. Raabe, C. David
7 nm Spatial Resolution in Soft X-ray Microscopy
Microscopy and Microanalysis **24** (2018) p. 270 – 271, doi: 10.1017/S1431927618013697
42. P. R. Ribič, B. Rösner, D. Gauthier, F. Döring, C. Masciovecchio, E. Principi, C. David, G. De Ninno
Extreme-Ultraviolet Vortices at a Free-Electron Laser
Microscopy and Microanalysis **24** (2018) p. 292 – 293, doi: 10.1017/S1431927618013806

43. A. Bergamaschi, M. Andrä, R. Barten, M. Brückner, S. Chirioti, C. David, R. Dinapoli, E. Fröjdth, D. Greiffenberg, M. Lebugle, C. Lopez-Cuenca, D. Mezza, A. Mozzanica, M. Ramilli, S. Redford, C. Ruder, B. Schmitt, X. Shi, D. Thattil, G. Tinti, S. Vetter, J. Zhang
Hybrid Detectors for High Resolution Imaging
Microscopy and Microanalysis **24** (2018) p. 316 – 318, doi:10.1017/S1431927618013910

2017:

44. M. Lebugle, G. Seniutinas, F. Marschall, V.A. Guzenko, D. Grolimund, and C. David
A tunable kinoform X ray beamsplitter
Optics Letters **42** (2017) p. 4327-4330
45. B. Rösner, F. Döring, P.R. Riberič, D. Gauthier, E. Principi, C. Masciovecchio, M. Zangrando, J. Vila-Comamala, G. De Ninno, and C. David
High Resolution Beam Profiling of X-ray Free Electron Laser Radiation by Polymer Imprint Development
Optics Express **25** (2017) p. 30686-30695
46. F. Marschall, Z. Yin, J. Rehanek, M. Beye, F. Döring, K. Kubicek, D. Raiser, S. Thekku Veedu, J. Buck, A. Rothkirch, B. Rösner, V.A. Guzenko, J. Viefhaus, C. David, and S. Techert
Transmission zone plates as analyzers for efficient RIXS-mapping
Scientific Reports **7** (2017) p. 8849-7, DOI: 10.1038/s41598-017-09052-0
47. P.R. Riberič, B. Rösner, D. Gauthier, E. Allaria, F. Döring, L. Foglia, L. Giannessi, N. Mahne, M. Manfredda, C. Masciovecchio, R. Mincigrucci, N. Mirian, E. Principi, E. Roussel, A. Simoncig, S. Spampinati, C. David, G. De Ninno
Extreme Ultraviolet Vortices from a Free Electron Laser
Physical Review X **7** (2017) p. 031036 - 9
48. M. Lebugle, M. Liebi, K. Wakonig, V. A. Guzenko, M. Holler, A. Menzel, M. Guizar-Sicairos, A. Diaz, and C. David
High-acceptance versatile microfocus module based on elliptical Fresnel zone plates for small angle X ray scattering
Optics Express **25** (2017) p. 21145-21158
49. F. Marschall, D. McNally, V.A. Guzenko, B. Rösner, M. Dantz, X. Lu, L. Nue, V. Strocov, T. Schmitt, and C. David
Zone plates as imaging analyzers for resonant inelastic x-ray scattering
Optics Express **25** (2017) p. 15624-9, DOI: 10.1364/OE.25.015624
50. I. Greving, M. Ogurreck, F. Marschall, A. Last, F. Wilde, T. Dose, H. Burmester, L. Lottermoser, M. Müller, C. David and F. Beckmann,
Nanotomography endstation at the P05 beamline: Status and perspectives
IOP Conf. Series: Journal of Physics: Conf. Series **849** (2017) p. 012056
51. M. Buzzi, M. Makita, L. Howald, A. Kleibert, B. Vodungbo, P. Maldonado, J. Raabe, N. Jaouen, H. Redlin, K. Tiedtke, P.M. Oppeneer, C. David, F. Nolting, J. Lüning
Single-shot Monitoring of Ultrafast Processes via X-ray Streaking at a Free Electron Laser
Scientific Reports **7** (2017) p. 7253, DOI: 10.1038/s41598-017-07069-z
52. N. Opara, S. Arnold, T. Braun, H. Stahlberg, M. Makita, C. David, and C. Padeste,
Direct protein crystallization on ultrathin membranes for diffraction measurements at X-ray free electron lasers
Journal of Applied Crystallography **50** (2017) p. 909-918, DOI: 10.1107/S1600576717005799
53. P. Roedig, H.M. Ginn, T. Pakendorf, G. Sutton, K. Harlos, T.S. Walter, J. Meyer, P. Fischer, R. Duman, I. Vartiainen, B. Reime, M. Warmer, A. Brewster, I.D. Young, T. Michels-Clark, N. Sauter, M. Sikorsky, S. Nelson, D.S. Damiani, R. Alonso-Mori, J. Ren., E.E. Fry, C. David, D.I. Stuart, A. Wagner, and A. Meents
High-speed fixed-target serial virus crystallography
Nature Methods **14** (2017) p. 805-813, DOI:10.1038/nmeth.4335
54. G. Seniutinas, A. Balcytis, I. Reklaitis, F. Chen, J. Davis, C. David, and S. Juodkazis
Tipping solutions: emerging 3D nano-fabrication/-imaging technologies
Nanophotonics **6** (2017) p. 923–941, DOI: 10.1515/nanoph-2017-0008
55. I. Mohacsi, I. Vartiainen, B. Rösner, M. Guizar-Sicairos, V.A. Guzenko, I. McNulty, R. Winarski, M.V. Holt, and C. David
Interlaced zone plate optics for practical hard X-ray imaging in the 10 nm range
Scientific Reports **7** (2017) p. 43624, DOI: 10.1038/srep43624
56. B. Pedrini, A. Menzel, V.A. Guzenko, C. David, R. Abela, C. Gutt
Model-independent particle species disentanglement by solution X-ray cross-correlation scattering
Scientific Reports **7** (2017) p. 45618, DOI: 10.1038/srep45618

57. J. Rehanek, M. Makita, P. Wiegand, P. Heimgartner, G. Seniutinas, U. Flechsig, V. Thominet, C. Schneider, A. Rodriguez Fernandez, C. David, L. Patthey and P. Juranić
The hard X-ray Photon Single-Shot Spectrometer of SwissFEL – initial characterization
Journal of Instrumentation **12** (2017) P05024, DOI:10.1088/1748-0221/12/05/P05024
58. M.-C. Zdora, J. Vila-Comamala, G. Schulz, A. Khimchenko, A. Hipp, A.C. Cook, D. Dilg, C. David, C. Grünzweig, C. Rau, P. Thibault, and I. Zanette
X-ray phase microtomography with a single grating for high-throughput investigations of biological tissue
Biomedical Optics Express **8** (2017) p. 1257-1270, <https://doi.org/10.1364/BOE.8.001257>
59. F. Marschall, J. Vila-Comamala, V.A. Guzenko, C. David
Systematic efficiency study of line-doubled ultra-high resolution zone plates
Microelectronic Engineering **177** (2017) p. 25-29
60. M. Makita, P. Karvinen, V.A. Guzenko, P. Vagovic, C. David
Diamond diffraction gratings for experiments with intense hard x-rays
Microelectronic Engineering **176** (2017) p. 75-78
61. Y. Kayser, C. David, U. Flechsig, J. Krempasky, V. Schlott and R. Abela
X-ray grating interferometer for in-situ and at-wavelength wavefront metrology
Journal of Synchrotron Radiation **24** (2017) p. 150-162

2016:

62. J. Szlachetko, J. Hoszowska, J.-Cl. Dousse, M. Nachtegaal, W. Błachucki, Y. Kayser, J. Sà, M. Messerschmidt, S. Boutet, G.J. Williams, C. David, G. Smolentsev, J.A. van Bokhoven, B.D. Patterson, T.J. Penfold, G. Knopp, M. Pajek, R. Abela, C.J. Milne
Establishing nonlinearity thresholds with ultraintense X-ray pulses
Scientific Reports **6** (2016) p. 33292
63. C.-S. Lee, Y.-Y. Lee, K.S.L. Chong, L. Wang, C. Dais, F. Clube, H.H. Solak, I. Mohacsi, C. David and R. Bischofberger
High-resolution, high-aspect-ratio iridium-nickel composite nanoimprint molds
Journal of Vacuum Science and Technology B **34** (2016) p. 061804-5
64. Y. Kayser, C. David, U. Flechsig, J. Krempasky, V. Schlott and R. Abela
X-ray grating interferometer for in-situ and at-wavelength wavefront metrology
Journal of Synchrotron Radiation **24** (2016) p. 1-13 <https://doi.org/10.1107/S1600577516017562>
65. L. Ahad, I. Vartiainen, T. Setälä, A.T. Friberg, C. David, M. Makita, and J. Turunen
On spectral and temporal coherence of X-ray free-electron laser beams
Optics Express **24** (2016) p. 13081-13090
66. P. Roedig, R. Duman, J. Sanchez-Weatherby, I. Vartiainen, A. Burkhardt, M. Warmer, C. David, A. Wagner, and A. Meents
Room-temperature macromolecular crystallography using a micro-patterned silicon chip with minimal background scattering
Journal of Applied Crystallography **49** (2016) p. 968-975
67. J. Vila-Comamala, J. Bosgra, D.S. Eastwood, U. Wagner, A.J. Bodey, M. Garcia-Fernandez, C. David, C. Rau,
Transmission x-ray microscopy at Diamond-Manchester I13 Imaging Branchline
AIP Conference Proceedings **1696** (2016) p. 020036-4
68. 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 SPring-8 Angstrom Compact Free Electron Laser by means of X-ray grating interferometry,
Optics Letters **41** (2016) p. 733-736
69. 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
70. T. Katayama, S. Owada, T. Togashi, K. Ogawa, P. Karvinen, I. Vartiainen, A. Eronen, 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
71. 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

2015:

72. 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** (2015) p. 7644
73. I. Mohacsi, I. Vartiainen, M. Guizar-Sicairos, P. Karvinen, V.A. Guzenko, E. Müller, E. Färm, M. Ritala, C. Kewish, A. Somogyi, and C. David
Double-sided diffractive X-ray optics for hard X-ray microscopy
Optics Express **23** (2015) p. 776-786
74. 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
75. 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
76. 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
77. 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
78. 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
79. S.V. Roth, R. Döhrmann, R. Gehrke, R. Röhlberger, K. Schlage, E. Metwalli, V. Körstgens, M. Burghammer, C. Riekel, 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
80. 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
Physics Procedia **69** (2015) p. 404-412

2014:

81. 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
82. 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
83. J. Szlachetko, C.J. Milne, J. Hozzowska, 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
84. 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
85. 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

86. 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
87. 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
88. 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
89. 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
90. 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
91. 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
92. 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
93. 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
94. 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:

95. 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
96. 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
97. 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
98. E. Lima, A. Diaz, M. Guizar-Sicairos, S. Gorelick, P. Pernot, T. Schleier, A. Menzel,
Cryo-scanning x-ray diffraction microscopy of frozen-hydrated yeast
Journal of Microscopy **249** (2013) p. 1-7
99. 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
100. 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
101. 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

102. 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
103. 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
104. 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
105. 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. Wulschleger
The Materials Science beamline upgrade at the Swiss Light Source
Journal of Synchrotron Radiation **20** (2013) p. 667–682
106. 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
107. 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
108. 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
109. 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
110. 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
111. 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
112. 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
113. 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
114. 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:

115. 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
116. R.N. Wilke, M. Priebe, M. Bartels, K. Giewekemeyer, A. Diaz, P. Karvinen, T. Salditt,
Hard X-ray imaging of bacterial cells: nano-diffraction and ptychographic reconstruction
Optics Express **20** (2012) p. 19232-19254

117. 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
118. 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
119. 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
120. 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
121. 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
122. 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
123. 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
124. 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
125. 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
126. T. Weitkamp, I. Zanette, F. Pfeiffer, C. David
Design aspects of X-ray grating interferometry
AIP Conference Proceedings **1466** (2012) p. 84-89
127. Z. Wang, T. Thüring, 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
128. 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
129. 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. Hozowska, 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
130. 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
131. 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:

132. 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
133. 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
134. 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
135. 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
136. B. Päiväranta, 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
137. 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
138. 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
139. 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
140. 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
141. 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
142. 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
143. E. Kleymenov, J. van Bokhoven, C. David, P. Glatzel, M. Janousch, R. Alonso-Mori, M. Studer, M. Willmann, A. Bergamaschi, B. Henrich, and M. Nachtegaal
Five-element Johann-type X-ray emission spectrometer with a single-photon-counting pixel detector
Review of Scientific Instruments **82** (2011) p. 065107-7
144. M. Stampanoni, Z. Wang, T. Thüring, 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
145. 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
146. T. Thüring, 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

147. 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
148. 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
149. B. Päiväranta, 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
150. 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
151. P. Modregger, B.R. Pinzer, T. Thüring, C. David, and M. Stampanoni
Sensitivity of grating interferometry
Optics Express **19** (2011) p. 18324 - 18338
152. 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
153. 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
154. 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
155. 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
156. 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
157. 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
158. I. Zanette, S. Rutishauser, C. David, and T. Weitkamp
X-ray Interferometry with Two-Dimensional Gratings
AIP Conference Proceedings **1365** (2011) p. 325 - 328
159. 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
160. 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
161. B. Terhalle, A. Langner, B. Päiväranta, V.A. Guzenko, C. David, and Y. Ekinci
Generation of EUV vortex beams using computer generated holograms
Optics Letters **36** (2011) p. 4143 - 4145
162. 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
163. B. Päiväranta, A. Langner, E. Kirk, C. David, Y. Ekinci
Sub-10 nm patterning using EUV interference lithography
Nanotechnology **22** (2011) p. 375302-7

164. 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
165. 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
166. 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
167. 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
168. 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:**
169. 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
170. 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
171. 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
172. 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
173. C.M. Kewish, P. Thibault, M. Dierolf, O. Bunk, A. Menzel, J. Vila-Comamala, K. Jefimovs, F. Pfeiffer,
Ptychographic characterization of the wavefield in the focus of reflective hard X-ray optics
Ultramicroscopy **110** (2010) p. 325-329
174. 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
175. 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
176. 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
177. 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
178. 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
179. 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

180. 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
181. 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
182. 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
183. 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
184. 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
185. 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
186. 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
187. 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
188. 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
189. 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
190. 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
191. 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
192. 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
193. 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