

Scientific Publications Dr. Christian David past 10 years

Last updated: January 2019

2019:

1. M. Makita, I. Vartiainen, I. Mohacsi, C. Caleman, 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

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5. 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
6. 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
7. J. Krempasky, F. Koch, A. Jaggi, C. Svetina, U. Flechsig, L. Patthey, S. Marathe, D. Battey, S. Cippicia, 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>
8. 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>
9. 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>
10. 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
11. 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>
12. 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

13. 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
14. 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>
15. 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
16. 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
17. 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
18. A. Cattoni, D. Mailly, O. Dalstein, M. Faustini, G. Seniutinas, B. Rösner, C. David
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Microelectronic Engineering **193** (2018) p. 18–22
19. 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
20. 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
21. 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
22. 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
23. 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
24. 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
25. 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
26. 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

27. M. Scheel, J. Perrin, F. Koch, V. Yurgens, V. Le Roux, J.-L. Giorgetta, K. Desjardins, C. Meneglier, 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
28. 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. Viefhaus, 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
29. B. Rösner, F. Koch, F. Döring, V.A. Guzenko, M. Meyer, J.L. Ornelas, A. Späth, R.H. Fink, S. Stanesco, 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
30. 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
31. A. Bergamaschi, M. Andrä, R. Barten, M. Brückner, S. Chirioti, C. David, R. Dinapoli, E. Fröjd, D. Greiffenberg, M. Lebugle, C. Lopez-Cuenca, D. Mezza, A. Mozzanica, M. Ramilli, S. Redford, C. Ruder, B. Schmitt, X. Shi, D. Thattil, . Tinti, S. Vetter, J. Zhang
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32. M. Lebugle, G. Seniutinas, F. Marschall, V.A. Guzenko, D. Grolimund, and C. David
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33. 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
34. 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
35. P.R. Ribič, 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
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36. M. Lebugle, M. Liebi, K. Wakonig, V. A. Guzenko, M. Holler, A. Menzel, M. Guizar-Sicairos, A. Diaz, and C. David
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37. F. Marschall, D. McNally, V.A. Guzenko, B. Rösner, M. Dantz, X. Lu, L. Nue, V. Strocov, T. Schmitt, and C. David
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38. I. Greving, M. Ogurreck, F. Marschall, A. Last, F. Wilde, T. Dose, H. Burmester, L. Lottermoser, M. Müller, C. David and F. Beckmann,
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39. 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
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40. N. Opara, S. Arnold, T. Braun, H. Stahlberg, M. Makita, C. David, and C. Padeste,
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41. 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
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43. I. Mohacsi, I. Vartiainen, B. Rösner, M. Guizar-Sicairos, V.A. Guzenko, I. McNulty, R. Winarski, M.V. Holt, and C. David
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The hard X-ray Photon Single-Shot Spectrometer of SwissFEL – initial characterization
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47. F. Marschall, J. Vila-Comamala, V.A. Guzenko, C. David
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Microelectronic Engineering **177** (2017) p. 25-29
48. 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
49. 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
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55. J. Vila-Comamala, J. Bosgra, D.S. Eastwood, U. Wagner, A.J. Bodey, M. Garcia-Fernandez, C. David, C. Rau,
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