Bryan M Barnes

List of Publications by Year
in descending order

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63	723	11	24
papers	citations	h-index	g-index
		840776	610901

64	64	64	464
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Metrology for the next generation of semiconductor devices. Nature Electronics, 2018, 1, 532-547.	26.0	249
2	Scatterfield microscopy for extending the limits of image-based optical metrology. Applied Optics, 2007, 46, 4248.	2.1	61
3	Fundamental limits of optical critical dimension metrology: a simulation study. , 2007, , .		51
4	Deep subwavelength nanometric image reconstruction using Fourier domain optical normalization. Light: Science and Applications, 2016, 5, e16038-e16038.	16.6	38
5	Three-dimensional deep sub-wavelength defect detection using Î» = 193 nm optical microscopy. Optics Express, 2013, 21, 26219.	3.4	27
6	Improving optical measurement uncertainty with combined multitool metrology using a Bayesian approach. Applied Optics, 2012, 51, 6196.	2.1	26
7	Improving optical measurement accuracy using multi-technique nested uncertainties. , 2009, , .		19
8	Fourier domain optical tool normalization for quantitative parametric image reconstruction. Applied Optics, 2013, 52, 6512.	1.8	19
9	Optical through-focus technique that differentiates small changes in line width, line height, and sidewall angle for CD, overlay, and defect metrology applications. Proceedings of SPIE, 2008, , .	0.8	18
10	Characterizing a scatterfield optical platform for semiconductor metrology. Measurement Science and Technology, 2011, 22, 024003.	2.6	17
11	Angle resolved optical metrology. Proceedings of SPIE, 2008, , .	0.8	15
12	Enhancing 9 nm node dense patterned defect optical inspection using polarization, angle, and focus. Proceedings of SPIE, 2013, , .	0.8	13
13	Scatterfield microscopy of 22-nm node patterned defects using visible and DUV light. Proceedings of SPIE, 2012, , .	0.8	12
14	193 nm angle-resolved scatterfield microscope for semiconductor metrology. Proceedings of SPIE, 2009, , .	0.8	11
15	Optimizing hybrid metrology: rigorous implementation of Bayesian and combined regression. Journal of Micro/ Nanolithography, MEMS, and MOEMS, 2015, 14, 044001.	0.9	9
16	Data-driven approaches to optical patterned defect detection. OSA Continuum, 2019, 2, 2683.	1.8	9
17	Zero-order imaging of device-sized overlay targets using scatterfield microscopy. , 2007, , .		8
18	Design of angle-resolved illumination optics using nonimaging bi-telecentricity for 193â€‰nm scatterfield microscopy. Optik, 2018, 156, 635-645.	2.9	8

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19	Comparison of magnetic- and chemical-boundary roughness in magnetic films and multilayers. Journal of Applied Physics, 2002, 91, 9978.	2.5	7
20	The limits and extensibility of optical patterned defect inspection. Proceedings of SPIE, 2010, , .	0.8	7
21	Phase sensitive parametric optical metrology: exploring the limits of three-dimensional optical metrology. Proceedings of SPIE, 2012, , .	0.8	7
22	Effects of wafer noise on the detection of 20-nm defects using optical volumetric inspection. Journal of Micro/ Nanolithography, MEMS, and MOEMS, 2015, 14, 014001.	0.9	7
23	Assessing Form-Dependent Optical Scattering at Vacuum- and Extreme-Ultraviolet Wavelengths of Nanostructures with Two-Dimensional Periodicity. Physical Review Applied, 2019, 11, .	3.8	7
24	Optimizing hybrid metrology through a consistent multi-tool parameter set and uncertainty model. Proceedings of SPIE, 2014, , .	0.8	6
25	Combining model-based measurement results of critical dimensions from multiple tools. Measurement Science and Technology, 2017, 28, 065002.	2.6	6
26	Scaling of single ionization cross sections of molecules with the charge of fast projectiles. Journal of Physics B: Atomic, Molecular and Optical Physics, 1994, 27, L489-L495.	1.5	5
27	The limits of image-based optical metrology. , 2006, 6152, 336.		5
28	Nested uncertainties and hybrid metrology to improve measurement accuracy. , 2011, , .		5
29	Optical illumination optimization for patterned defect inspection. Proceedings of SPIE, 2011, , .	0.8	4
30	Optimizing hybrid metrology: rigorous implementation of Bayesian and combined regression. Proceedings of SPIE, 2015, , .	0.8	4
31	Development of large aperture projection scatterometry for catalyst loading evaluation in proton exchange membrane fuel cells. Journal of Power Sources, 2017, 364, 130-137.	7.8	4
32	Illumination optimization for optical semiconductor metrology. , 2006, , .		3
33	Scatterfield microscopy using back focal plane imaging with an engineered illumination field. , 2006, 6152, 180.		3
34	Spectroscopic Scatterfield Microscopy. , 2009, , .		2
35	Angle-resolved optical metrology using multi-technique nested uncertainties. Proceedings of SPIE, 2009, , .	0.8	2
36	Sub-50-nm measurements using a 193-nm angle-resolved scatterfield microscope. Proceedings of SPIE, 2010, , .	0.8	2

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37	A Bayesian statistical model for hybrid metrology to improve measurement accuracy. Proceedings of SPIE, 2011, , .	0.8	2
38	Fundamental Limits of Optical Patterned Defect Metrology. , 2011, , .		2
39	Optimizing the nanoscale quantitative optical imaging of subfield scattering targets. Optics Letters, 2016, 41, 4959.	3.3	2
40	Enabling quantitative optical imaging for in-die-capable critical dimension targets. Proceedings of SPIE, 2016, 9778, .	0.8	2
41	Applications of machine learning at the limits of form-dependent scattering for defect metrology. , 2019, , .		2
42	Optimizing image-based patterned defect inspection through FDTD simulations at multiple ultraviolet wavelengths. Proceedings of SPIE, 2017, , .	0.8	2
43	Optimizing Defect Detectability across Multiple Ultraviolet Wavelengths. , 2018, , .		2
44	Critical dimension measurements using a 193 nm scatterfield microscope. , 2009, , .		1
45	Optical volumetric inspection of sub-20nm patterned defects with wafer noise. , 2014, , .		1
46	Quantitative tool characterization of 193nm scatterfield microscope. , 2015, , .		1
47	Appraising the Extensibility of Optics-Based Metrology for Emerging Materials. ECS Transactions, 2019, 92, 73-84.	0.5	1
48	Assessing the wavelength extensibility of optical patterned defect inspection. Proceedings of SPIE, 2017, , .	0.8	1
49	Extensibility of optics-based metrology for sub-5nm technology (Conference Presentation). , 2018, , .		1
50	Optimizing defect detectability across multiple ultraviolet wavelengths (Conference Presentation). , 2018, , .		1
51	Measurement sensitivity of DUV scatterfield microscopy parameterized with partial coherence for duty ratio-varied periodic nanofeatures. Optics and Lasers in Engineering, 2022, 152, 106953.	3.8	1
52	Surface and interface roughness in magnetic thin films: a comparison using carbon-nanotube atomic force microscopy and soft-x-ray scattering. , 2002, , .		0
53	Zero-Order and Super-Resolved Imaging of Arrayed Nanoscale Lines using Scatterfield Microscopy. AIP Conference Proceedings, 2007, , .	0.4	0
54	Photomask metrology using a 193nm scatterfield microscope. Proceedings of SPIE, 2009, , .	0.8	0

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55	Quantitative microscope characterization for optical measurements with sub-nm parametric uncertainties. , 2013, , .		0
56	The effect of systematic errors on the hybridization of optical critical dimension measurements. Proceedings of SPIE, 2015, , .	0.8	0
57	Optimizing wavelengths for optics-based measurements of advanced electronics. , 2021, , .		0
58	Harnessing 3D Scattered Optical Fields for sub-20 nm Defect Detection. , 2013, , .		0
59	3-D Optical Metrology of Finite sub-20nm Dense Arrays With sub-nanometer Parametric Uncertainties. , 2013, , .		0
60	Evaluating the effects of modeling errors for isolated finite 3D targets. Proceedings of SPIE, 2017, , .	0.8	0
61	Dimensional measurement sensitivity analysis for a MoSi photomask using DUV reflection scatterfield imaging microscopy. , 2017, , .		0
62	Appraising the Extensibility of Optics-Based Metrology for Emerging Materials. ECS Meeting Abstracts, 2019, , .	0.0	0
63	Supplementing rigorous electromagnetic modeling with atomistic simulations for optics-based metrology. , 2019, , .		0