

# Hans A Bechtel

## List of Publications by Year in descending order

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Version: 2024-02-01

58  
papers

4,713  
citations

257450

24  
h-index

149698

56  
g-index

58  
all docs

58  
docs citations

58  
times ranked

6597  
citing authors

#	ARTICLE	IF	CITATIONS
1	Graphene plasmonics for tunable terahertz metamaterials. <i>Nature Nanotechnology</i> , 2011, 6, 630-634.	31.5	2,566
2	Ultrabroadband infrared nanospectroscopic imaging. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 7191-7196.	7.1	252
3	High-spatial-resolution mapping of catalytic reactions on single particles. <i>Nature</i> , 2017, 541, 511-515.	27.8	183
4	Synchrotron IR Spectromicroscopy: Chemistry of Living Cells. <i>Analytical Chemistry</i> , 2010, 82, 8757-8765.	6.5	116
5	Amplitude- and Phase-Resolved Nanospectral Imaging of Phonon Polaritons in Hexagonal Boron Nitride. <i>ACS Photonics</i> , 2015, 2, 790-796.	6.6	115
6	Nano-Chemical Infrared Imaging of Membrane Proteins in Lipid Bilayers. <i>Journal of the American Chemical Society</i> , 2013, 135, 18292-18295.	13.7	99
7	Field Effect Optoelectronic Modulation of Quantum-Confined Carriers in Black Phosphorus. <i>Nano Letters</i> , 2017, 17, 78-84.	9.1	89
8	Phase transition in bulk single crystals and thin films of $\text{VO}_2$ by nanoscale infrared spectroscopy and imaging. <i>Physical Review B</i> , 2015, 91, .	3.2	88
9	Direct observation of narrow mid-infrared plasmon linewidths of single metal oxide nanocrystals. <i>Nature Communications</i> , 2016, 7, 11583.	12.8	78
10	Nanoscale probing of electron-regulated structural transitions in silk proteins by near-field IR imaging and nano-spectroscopy. <i>Nature Communications</i> , 2016, 7, 13079.	12.8	78
11	Far Infrared Synchrotron Near-Field Nanoimaging and Nanospectroscopy. <i>ACS Photonics</i> , 2018, 5, 2773-2779.	6.6	78
12	THz Near-Field Imaging of Extreme Subwavelength Metal Structures. <i>ACS Photonics</i> , 2020, 7, 687-694.	6.6	58
13	Infrared vibrational nanocrystallography and nanoimaging. <i>Science Advances</i> , 2016, 2, e1601006.	10.3	55
14	Infrared Nanospectroscopy at the Graphene-Electrolyte Interface. <i>Nano Letters</i> , 2019, 19, 5388-5393.	9.1	55
15	Nanoscale infrared spectroscopy as a non-destructive probe of extraterrestrial samples. <i>Nature Communications</i> , 2014, 5, 5445.	12.8	52
16	Nanoimaging and Control of Molecular Vibrations through Electromagnetically Induced Scattering Reaching the Strong Coupling Regime. <i>ACS Photonics</i> , 2018, 5, 3594-3600.	6.6	46
17	Synchrotron infrared nano-spectroscopy and -imaging. <i>Surface Science Reports</i> , 2020, 75, 100493.	7.2	40
18	Tunable intraband optical conductivity and polarization-dependent epsilon-near-zero behavior in black phosphorus. <i>Science Advances</i> , 2021, 7, .	10.3	40

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19	Accessing the Optical Magnetic Near-Field through Babinet's Principle. ACS Photonics, 2014, 1, 894-899.	6.6	39
20	Discovery of davemaoite, CaSiO <sub>3</sub> -perovskite, as a mineral from the lower mantle. Science, 2021, 374, 891-894.	12.6	39
21	Final reports of the Stardust Interstellar Preliminary Examination. Meteoritics and Planetary Science, 2014, 49, 1720-1733.	1.6	29
22	In situ infrared nanospectroscopy of the local processes at the Li/polymer electrolyte interface. Nature Communications, 2022, 13, 1398.	12.8	28
23	Probing Polaritons in 2D Materials with Synchrotron Infrared Nanospectroscopy. Advanced Optical Materials, 2020, 8, 1901091.	7.3	26
24	Sub-diffractive cavity modes of terahertz hyperbolic phonon polaritons in tin oxide. Nature Communications, 2021, 12, 1995.	12.8	26
25	Cross-Scale Molecular Analysis of Chemical Heterogeneity in Shale Rocks. Scientific Reports, 2018, 8, 2552.	3.3	25
26	Stardust Interstellar Preliminary Examination X: Impact speeds and directions of interstellar grains on the Stardust dust collector. Meteoritics and Planetary Science, 2014, 49, 1680-1697.	1.6	24
27	Near-field spectroscopic investigation of dual-band heavy fermion metamaterials. Nature Communications, 2017, 8, 2262.	12.8	24
28	Ultrathin Free-Standing Oxide Membranes for Electron and Photon Spectroscopy Studies of Solid-Gas and Solid-Liquid Interfaces. Nano Letters, 2020, 20, 6364-6371.	9.1	24
29	Hybrid Machine Learning for Scanning Near-Field Optical Spectroscopy. ACS Photonics, 2021, 8, 2987-2996.	6.6	22
30	Ultrahigh-Quality Infrared Polaritonic Resonators Based on Bottom-Up-Synthesized van der Waals Nanoribbons. ACS Nano, 2022, 16, 3027-3035.	14.6	20
31	Stardust Interstellar Preliminary Examination IX: High-speed interstellar dust analog capture in Stardust flight spare aerogel. Meteoritics and Planetary Science, 2014, 49, 1666-1679.	1.6	19
32	Stardust Interstellar Preliminary Examination II: Curating the interstellar dust collector, picrokeystones, and sources of impact tracks. Meteoritics and Planetary Science, 2014, 49, 1522-1547.	1.6	18
33	Stardust Interstellar Preliminary Examination IV: Scanning transmission X-ray microscopy analyses of impact features in the Stardust Interstellar Dust Collector. Meteoritics and Planetary Science, 2014, 49, 1562-1593.	1.6	18
34	Infrared nano-spectroscopy of ferroelastic domain walls in hybrid improper ferroelectric Ca <sub>3</sub> Ti <sub>2</sub> O <sub>7</sub> . Nature Communications, 2019, 10, 5235.	12.8	18
35	Near- and far-field spectroscopic imaging investigation of resonant square-loop infrared metasurfaces. Optics Express, 2013, 21, 17150.	3.4	17
36	Stardust Interstellar Preliminary Examination XI: Identification and elemental analysis of impact craters on Al foils from the Stardust Interstellar Dust Collector. Meteoritics and Planetary Science, 2014, 49, 1698-1719.	1.6	16

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37	Nanoimaging of Electronic Heterogeneity in Bi <sub>2</sub> Se <sub>3</sub> and Sb <sub>2</sub> Te <sub>3</sub> Nanocrystals. <i>Advanced Electronic Materials</i> , 2018, 4, 1700377.	5.1	16
38	Symmetry crossover in layered $M_{PS}M$ complexes via near-field infrared spectroscopy of monolayer $MnPS_3$ . <i>Physical Review B</i> , 2020, 102, .	3.2	16
39	Near-field infrared spectroscopy of monolayer $MnPS_3$ . <i>Physical Review B</i> , 2019, 100, .	3.2	15
40	Stardust Interstellar Preliminary Examination <sc>VII</sc>: Synchrotron X-ray fluorescence analysis of six Stardust interstellar candidates measured with the Advanced Photon Source 2-Å microprobe. <i>Meteoritics and Planetary Science</i> , 2014, 49, 1626-1644.	1.6	13
41	Controlling phase separation in vanadium dioxide thin films via substrate engineering. <i>Physical Review B</i> , 2017, 96, .	3.2	13
42	Ultrabroadband Nanocavity of Hyperbolic Phonon Polaritons in 1D-Like $\hat{\epsilon}_{\pm}$ -MoO <sub>3</sub> . <i>ACS Photonics</i> , 0, , .	6.6	13
43	Stardust Interstellar Preliminary Examination VIII: Identification of crystalline material in two interstellar candidates. <i>Meteoritics and Planetary Science</i> , 2014, 49, 1645-1665.	1.6	12
44	Stardust Interstellar Preliminary Examination <sc>VI</sc>: Quantitative elemental analysis by synchrotron X-ray fluorescence nanoimaging of eight impact features in aerogel. <i>Meteoritics and Planetary Science</i> , 2014, 49, 1612-1625.	1.6	12
45	Stardust Interstellar Preliminary Examination V: <sc>XRF</sc> analyses of interstellar dust candidates at <sc>ESRF ID</sc> 13. <i>Meteoritics and Planetary Science</i> , 2014, 49, 1594-1611.	1.6	12
46	Stardust Interstellar Preliminary Examination <sc>III</sc>: Infrared spectroscopic analysis of interstellar dust candidates. <i>Meteoritics and Planetary Science</i> , 2014, 49, 1548-1561.	1.6	12
47	Vibrational exciton nanoimaging of phases and domains in porphyrin nanocrystals. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 7030-7037.	7.1	11
48	Exploring few and single layer CrPS <sub>4</sub> with near-field infrared spectroscopy. <i>2D Materials</i> , 2021, 8, 035020.	4.4	10
49	Probing subwavelength in-plane anisotropy with antenna-assisted infrared nano-spectroscopy. <i>Nature Communications</i> , 2021, 12, 2649.	12.8	9
50	Hybridized Radial and Edge Coupled 3D Plasmon Modes in Self-Assembled Graphene Nanocylinders. <i>Small</i> , 2021, 17, e2100079.	10.0	8
51	Ultrastructural and SINS analysis of the cell wall integrity response of <i>Aspergillus nidulans</i> to the absence of galactofuranose. <i>Analyst</i> , The, 2019, 144, 928-934.	3.5	7
52	Effect of sample anisotropy on scanning near-field optical microscope images. <i>Journal of Applied Physics</i> , 2021, 129, .	2.5	3
53	Probing nanoparticle substrate interactions with synchrotron infrared nanospectroscopy: Coupling gold nanorod Fabry-Pérot resonances with $SiO_2$ and $BN$ phonons. <i>Physical Review B</i> , 2021, 104, .	3.2	3
54	Ultrabroadband infrared near-field spectroscopy and imaging of local resonators in percolative gold films. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2019, 36, 3315.	2.1	3

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55	Plasmonic nanoarcs: a versatile platform with tunable localized surface plasmon resonances in octave intervals. Optics Express, 2020, 28, 30889.	3.4	2
56	Nano-FTIR Investigation of the CM Chondrite Allan Hills 83100. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	2
57	Surface modifications of comet-exposed aerogel from the Stardust cometary collector. Meteoritics and Planetary Science, 2012, 47, 1336-1346.	1.6	1
58	Nanospectroscopic imaging of vibrational excitons as a molecular ruler. , 2019, , .		0