

# Kris Zacny

## List of Publications by Year in descending order

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Version: 2024-02-01

92  
papers

764  
citations

759233

12  
h-index

713466

21  
g-index

95  
all docs

95  
docs citations

95  
times ranked

693  
citing authors

#	ARTICLE	IF	CITATIONS
1	Mission Architecture Using the SpaceX Starship Vehicle to Enable a Sustained Human Presence on Mars. <i>New Space</i> , 2022, 10, 259-273.	0.8	14
2	European Molecular Indicators of Life Investigation (EMILI) for a Future Europa Lander Mission. <i>Frontiers in Space Technologies</i> , 2022, 2, .	1.4	7
3	Design, Development, and Successful Testing of the World's First Autonomous Downhole Robot for Live Production Logging and Intervention Operations. , 2022, , .		0
4	RedWater: Water Mining System for Mars. <i>New Space</i> , 2022, 10, 166-186.	0.8	5
5	Unlocking the Climate Record Stored within Mars's Polar Layered Deposits. , 2021, 53, .		0
6	Mars Reconnaissance: Civil Engineering Advances for Human Exploration. , 2021, 53, .		0
7	CheMinX: A Next Generation XRD/XRF for Quantitative Mineralogy and Geochemistry on Mars. , 2021, 53, .		2
8	Deep Trek: Science of Subsurface Habitability & Life on Mars. , 2021, 53, .		3
9	Dive, Dive, Dive: Accessing the Subsurface of Ocean Worlds. , 2021, 53, .		3
10	Micro computed tomography for in situ analysis of subsurface structure. , 2021, , .		1
11	Mission to Characterize Volatiles in Old, Cold, Permanently Shadowed Regions on the Moon. , 2021, 53, .		0
12	Deep Trek: Mission Concepts for Exploring Subsurface Habitability & Life on Mars – A Window into Subsurface Life in the Solar System. , 2021, 53, .		0
13	The scientific rationale for deployment of a long-lived geophysical network on the Moon. , 2021, 53, .		4
14	BIOMARS: A Foundational High-Resolution Environmental Sensor Array. , 2021, 53, .		0
15	In situ microCT for planetary exploration. , 2021, 53, .		1
16	GANGOTRI mission concept on the glacial key to the Amazonian climate of Mars. , 2021, 53, .		1
17	In-Situ Mineralogical Analysis of the Venus Surface using X-ray Diffraction. , 2021, 53, .		3
18	SPRING Mission: Exploring the past and enabling the future of Mars. , 2021, 53, .		0

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19	Sampling Ocean Materials, Traces of Life or Biosignatures in Plume Deposits on Enceladus's Surface. , 2021, 53, .		1
20	Exploring Solar System Organic Chemistry Evolution through the Surfaces of Ceres and Large Asteroids. , 2021, 53, .		0
21	Long-Term Commitment to Explore and Sustain our Earth-Moon Environment. , 2021, 53, .		0
22	Robotics Technology for In Situ Mobility and Sampling. , 2021, 53, .		3
23	Instant Landing Pads for Lunar Missions. , 2021, , .		6
24	Practical and Economic Rocket Mining of Lunar Ice. , 2021, , .		0
25	Science Goals and Objectives for the Dragonfly Titan Rotorcraft Relocatable Lander. Planetary Science Journal, 2021, 2, 130.	3.6	80
26	Laser Desorption Mass Spectrometry at Saturn's moon Titan. International Journal of Mass Spectrometry, 2021, 470, 116707.	1.5	22
27	Identifying and Quantifying Volatile Content and Geotechnical Properties in the lunar PSRs. , 2021, , .		0
28	Pneumatic Sampler (P-Sampler) for the Martian Moons Exploration (MMX). , 2021, , .		0
29	Melting Ice under Martian and other Environmental Conditions for ISRU. , 2021, , .		1
30	GaLORE (Gaseous Lunar Oxygen from Regolith Electrolysis): Technology Advances for a Cold-Walled Molten Regolith Electrolysis Reactor. , 2021, , .		0
31	RedWater: Extraction of Water from Mars's Ice Deposits. , 2021, , .		1
32	Thermal Extraction of Volatiles from Lunar and Asteroid Regolith in Axisymmetric Crank-Nicolson Modeling. Journal of Aerospace Engineering, 2020, 33, .	1.4	10
33	Subsurface <i>In Situ</i> Detection of Microbes and Diverse Organic Matter Hotspots in the Greenland Ice Sheet. Astrobiology, 2020, 20, 1185-1211.	3.0	6
34	Big Steps for Mankind: Extraterrestrial Sampling and Exploration 50 Years after Apollo 11. Geo-strata, 2020, 24, 42-48.	0.1	1
35	PlanetVac Xodiac: Lander Foot Pad Integrated Planetary Sampling System. , 2019, , .		1
36	Application of Pneumatics in Delivering Samples to Instruments on Planetary Missions. , 2019, , .		5

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37	Linear Ion Trap Mass Spectrometer (LITMS) for in situ Astrobiology. , 2019, , .		3
38	Subsurface Microbial Habitats in an Extreme Desert Mars-Analog Environment. <i>Frontiers in Microbiology</i> , 2019, 10, 69.	3.5	44
39	Gypsum and other evaporites as a potential source for water extraction on Mars: experimental update. , 2018, , .		2
40	Development of a Deep Drill System with Integrated Deep UV/Raman Spectrometer for Mars and Europa. , 2018, , .		2
41	SLUSH: Europa hybrid deep drill. , 2018, , .		6
42	Full-scale dynamic touch-and-go validation of the BiBlade comet surface sample chain. , 2018, , .		3
43	BiBlade sampling tool validation for comet surface environments. , 2017, , .		7
44	Development of Venus drill. , 2017, , .		4
45	Red Dragon drill missions to Mars. <i>Acta Astronautica</i> , 2017, 141, 79-88.	3.2	6
46	Development and characteristics of Mechanical Porous Ambient Comet Simulants as comet surface analogs. <i>Planetary and Space Science</i> , 2017, 147, 6-13.	1.7	11
47	Obtaining Vibration Data for Autonomous Health Monitoring of Interplanetary Drills. , 2016, , .		1
48	Resource prospector drill performance during the integrated payload tests. , 2016, , .		4
49	The World is Not Enough (WINE): Harvesting Local Resources for Eternal Exploration of Space. , 2016, , .		12
50	Vision-Aided Navigation for a Free-Flying Unmanned Robotic System to Support Interplanetary Bodies Prospecting and Characterization Missions. , 2016, , .		3
51	Control Laws Development for a Free-Flying Unmanned Robotic System to Support Interplanetary Bodies Prospecting and Characterization Missions. , 2016, , .		5
52	Deposition, accumulation, and alteration of $\text{Cl}^-$ , $\text{NO}_3^-$ , $\text{ClO}_4^-$ and $\text{ClO}_3^-$ salts in a hyper-arid polar environment: Mass balance and isotopic constraints. <i>Geochimica Et Cosmochimica Acta</i> , 2016, 182, 197-215.	3.9	42
53	Pyramid Comet Sampler (PyCoS). , 2015, , .		5
54	Impact of Drilling Operations on Lunar Volatiles Capture: Thermal Vacuum Tests. , 2015, , .		4

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55	Autonomous soil analysis by the Mars Microbeam Raman Spectrometer (MMRS) on-board a rover in the Atacama Desert: a terrestrial test for planetary exploration. <i>Journal of Raman Spectroscopy</i> , 2015, 46, 810-821.	2.5	36
56	Using Distributed Transfer Function Method (DTFM) for Autonomous Health Monitoring of Interplanetary Drills. , 2015, , .		3
57	Investigating Fluidized Granular Flow Behavior in Extraterrestrial Environments for a Pneumatic Regolith Acquisition System. , 2014, , .		1
58	Robotic Asteroid Prospector (RAP) NIAC Phase 1 Results. , 2014, , .		3
59	A Comet Surface Sample Return Probe (CSSRP). , 2014, , .		2
60	Effect of Mars atmospheric pressure on percussive excavation forces. <i>Journal of Terramechanics</i> , 2014, 51, 43-52.	3.1	11
61	Mars2020 sample acquisition and caching technologies and architectures. , 2014, , .		13
62	Robotic Instrument for Grinding Rocks Into Thin Sections (GRITS). <i>Advances in Space Research</i> , 2013, 51, 2181-2193.	2.6	9
63	Development of a thin section device for space exploration: Overview and system performance estimates. <i>Advances in Space Research</i> , 2013, 51, 1659-1673.	2.6	3
64	The Sample Handling System for the Mars Icebreaker Life Mission: From Dirt to Data. <i>Astrobiology</i> , 2013, 13, 354-369.	3.0	25
65	Investigating the Effects of Percussion on Excavation Forces. <i>Journal of Aerospace Engineering</i> , 2013, 26, 87-96.	1.4	17
66	Geochemical profile of a layered outcrop in the Atacama analogue using laser-induced breakdown spectroscopy: Implications for Curiosity investigations in Gale. <i>Geophysical Research Letters</i> , 2013, 40, 1965-1970.	4.0	15
67	Asteroid Mining. , 2013, , .		23
68	Mauna Kea, Hawaii, as an Analog Site for Future Planetary Resource Exploration: Results from the 2010 ILSO-ISRU Field-Testing Campaign. <i>Journal of Aerospace Engineering</i> , 2013, 26, 183-196.	1.4	7
69	Parametric Optimization and Prediction Software for Excavation and Prospecting Tasks. , 2013, , .		1
70	Distribution of depth to ice-cemented soils in the high-elevation Quartermain Mountains, McMurdo Dry Valleys, Antarctica. <i>Antarctic Science</i> , 2013, 25, 575-582.	0.9	30
71	Sample Acquisition and Caching Architectures for the Mars 2020 Rover Mission. , 2013, , .		2
72	Asteroids: Anchoring and Sample Acquisition Approaches in Support of Science, Exploration, and In situ Resource Utilization. , 2013, , 287-343.		20

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73	Mobile In-Situ Water Extractor (MISWE) for Mars, Moon, and Asteroids In Situ Resource Utilization. , 2012, , .		18
74	Lunar Prospecting Rover Utilizing a Lunar Drill, Pneumatic Excavator, and Gas Jet Trencher. , 2012, , .		5
75	Percussive Excavation and Its Nullifying Effect on the Influence of Soil Relative Density. , 2012, , .		3
76	A thermal model for analysis and control of drilling in icy formations on mars. Planetary and Space Science, 2012, 73, 214-220.	1.7	17
77	Mars drill for the Mars sample return mission with a Brushing and Abrading bit, regolith and powder bit, core PreView Bit and a coring bit. , 2012, , .		10
78	SAC architecture for the 2018 Mars Sample Return mission. , 2011, , .		2
79	Prototype rotary percussive drill for the Mars Sample Return mission. , 2011, , .		13
80	Stress and Displacement Wave Propagation in a Percussive Tubular Mechanism in Presence of Geometric Discontinuity. , 2011, , .		0
81	Development of the Brushing, Abrading, Regolith, Core PreView and the Coring Bits for the Mars Sample Return Mission. , 2011, , .		6
82	Testing of a 1 meter Mars IceBreaker Drill in a 3.5 meter Vacuum Chamber and in an Antarctic Mars Analog Site. , 2011, , .		6
83	Real-World Mining Feasibility Studies Applied to Asteroids, the Moon and Mars. , 2011, , .		3
84	Investigating the Efficiency of Pneumatic Transfer of JSC-1a Lunar Regolith Simulant in Vacuum and Lunar Gravity During Parabolic Flights. , 2010, , .		9
85	Feasibility Study of Commercial Markets for New Sample Acquisition Devices. , 2010, , .		1
86	Novel Approaches to Drilling and Excavation on the Moon. , 2009, , .		20
87	Lunar In-Situ Resource Utilization: Regolith Bags Automated Filling Technology. , 2008, , .		3
88	Pneumatic Excavator and Regolith Transport System for Lunar ISRU and Construction. , 2008, , .		22
89	Drilling Results in Ice-Bound Simulated Lunar Regolith. AIP Conference Proceedings, 2007, , .	0.4	15
90	Drill Automation for the Space Environment: Lessons Learned. , 2007, , .		2

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91	Robotic Drill Systems for Planetary Exploration. , 2006, , .		22
92	Auto-Gopher-2 - Wireline Deep Sampler Driven by Percussive Piezoelectric Actuator and Rotary EM Motors. Advances in Science and Technology, 0, , .	0.2	6