

# Klemen Bucar

## List of Publications by Year in descending order

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93  
papers

1,472  
citations

331670

21  
h-index

361022

35  
g-index

95  
all docs

95  
docs citations

95  
times ranked

1593  
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanistic Study of Magnesium-Sulfur Batteries. Chemistry of Materials, 2017, 29, 9555-9564.	6.7	101
2	Properties of Hollow Molecules Probed by Single-Photon Double Ionization. Physical Review Letters, 2011, 106, 063003.	7.8	97
3	Electronic Structure of Sulfur Studied by X-ray Absorption and Emission Spectroscopy. Analytical Chemistry, 2009, 81, 6516-6525.	6.5	93
4	Observation of Triplet Doubly Excited States in Single Photon Excitation from Ground State Helium. Physical Review Letters, 2001, 86, 2758-2761.	7.8	67
5	Design and performance of a versatile curved-crystal spectrometer for high-resolution spectroscopy in the tender x-ray range. Review of Scientific Instruments, 2012, 83, 033113.	1.3	63
6	Sulfur-Metal Orbital Hybridization in Sulfur-Bearing Compounds Studied by X-ray Emission Spectroscopy. Inorganic Chemistry, 2010, 49, 6468-6473.	4.0	56
7	Fluorescence of low-lying doubly photoexcited states in helium. Physical Review A, 2002, 65, .	2.5	43
8	Electronic State Interferences in Resonant X-Ray Emission after K-Shell Excitation in HCl. Physical Review Letters, 2010, 105, 113004.	7.8	41
9	Single photon simultaneous K-shell ionization and K-shell excitation. I. Theoretical model applied to the interpretation of experimental results on H <sub>2</sub> O. Journal of Chemical Physics, 2015, 142, 014307.	3.0	37
10	Operando Resonant Inelastic X-ray Scattering: An Appropriate Tool to Characterize Sulfur in Li-S Batteries. Journal of Physical Chemistry C, 2016, 120, 24568-24576.	3.1	35
11	The effects of <sup>60</sup> Co-radiation on model vitreous wasteforms intended for the disposal of intermediate and high level radioactive wastes in the United Kingdom. Journal of Nuclear Materials, 2012, 429, 353-367.	2.7	34
12	Separation of Two-Electron Photoexcited Atomic Processes near the Inner-Shell Threshold. Physical Review Letters, 2009, 102, 143001.	7.8	32
13	High Resolution Multiphoton Spectroscopy by a Tunable Free-Electron-Laser Light. Physical Review Letters, 2014, 113, 193201.	7.8	31
14	Development of mass spectrometry by high energy focused heavy ion beam: MeV SIMS with 8 MeV Cl <sup>7+</sup> beam. Nuclear Instruments & Methods in Physics Research B, 2014, 332, 22-27.	1.4	31
15	Resonant inelastic x-ray scattering at the limit of subfemtosecond natural lifetime. Journal of Chemical Physics, 2011, 134, 144308.	3.0	30
16	Two-to-one Auger decay of a double $L$ -vacancy in argon. Physical Review A, 2016, 93, .	2.5	30
17	Experimental Determination of the Lifetime for the 2p3d(P01) Helium Doubly Excited State. Physical Review Letters, 2003, 90, 153004.	7.8	28
18	Exercise-induced effects on a gym atmosphere. Indoor Air, 2016, 26, 468-477.	4.3	27

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19	Single photon simultaneous K-shell ionization and K-shell excitation. II. Specificities of hollow nitrogen molecular ions. <i>Journal of Chemical Physics</i> , 2015, 142, 014308.	3.0	26
20	Double core hole spectroscopy with synchrotron radiation. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2015, 204, 303-312.	1.7	24
21	Chemical State Analysis of Phosphorus Performed by X-ray Emission Spectroscopy. <i>Analytical Chemistry</i> , 2015, 87, 5632-5639.	6.5	22
22	Event by event pile-up compensation in digital timestamped calorimetry. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2009, 607, 581-586.	1.6	21
23	Hard x-ray absorption spectroscopy for pulsed sources. <i>Physical Review B</i> , 2013, 87, .	3.2	21
24	Detailed observations of photo-accessible triplet doubly excited states in helium. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2003, 36, 4339-4350.	1.5	20
25	Inelastic x-ray scattering in the vicinity of xenon L <sub>3</sub> edge. <i>Physical Review A</i> , 2007, 76, .	2.5	20
26	Molecular imaging of cannabis leaf tissue with MeV-SIMS method. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2016, 371, 205-210.	1.4	20
27	Dissociation of chloromethanes upon resonant $\tilde{l}f^*$ excitation studied by x-ray scattering. <i>Journal of Chemical Physics</i> , 2013, 139, 134302.	3.0	19
28	Resonant Inelastic X-ray Scattering of Molybdenum Oxides and Sulfides. <i>Journal of Physical Chemistry C</i> , 2015, 119, 2419-2426.	3.1	18
29	Branching ratios in the radiative decay of helium doubly excited states. <i>Physical Review A</i> , 2005, 72, .	2.5	17
30	Potential Energy Surface Reconstruction and Lifetime Determination of Molecular Double-Core-Hole States in the Hard X-Ray Regime. <i>Physical Review Letters</i> , 2017, 119, 133001.	7.8	17
31	A local chemical environment effect in site-specific Auger spectra of ethyl trifluoroacetate. <i>Journal of Chemical Physics</i> , 2013, 138, 024306.	3.0	16
32	Electron Dynamics in the Core-Excited $CS_2$ Revealed through Resonant Inelastic X-Ray Scattering Spectroscopy. <i>Physical Review X</i> , 2015, 5, .	3.0	15
33	Sulphur $K\beta$ emission spectra reveal protonation states of aqueous sulfuric acid. <i>Scientific Reports</i> , 2016, 6, 21012.	3.3	15
34	Electronic Structure of Third-Row Elements in Different Local Symmetries Studied by Valence-to-Core X-ray Emission Spectroscopy. <i>Inorganic Chemistry</i> , 2016, 55, 5328-5336.	4.0	15
35	Angular distribution of the fluorescence of helium doubly photo-excited states converging on the $He^+(N=2)$ ionization threshold. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2003, 36, 4351-4359.	1.5	13
36	Multi-electron coincidence spectroscopy: Triple Auger decay of Ar 2p and 2s holes. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2017, 220, 125-132.	1.7	13

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37	Application of wavelength dispersive X-ray spectroscopy to improve detection limits in X-ray analysis. X-Ray Spectrometry, 2011, 40, 2-6.	1.4	12
38	Role of ultrafast dissociation in the fragmentation of chlorinated methanes. Journal of Chemical Physics, 2018, 148, 174301.	3.0	12
39	Time-resolved measurements of aerosol elemental concentrations in indoor working environments. Atmospheric Environment, 2010, 44, 4954-4963.	4.1	11
40	4d -inner-shell ionization of Xe <sup>+</sup> ions and subsequent Auger decay. Physical Review A, 2017, 96, .	2.5	11
41	Double-core ionization photoelectron spectroscopy of C <sub>6</sub> H <sub>6</sub> : Breakdown of the "intuitive" ortho-meta-para binding energy ordering of K <sup>n</sup> 1K <sup>n</sup> 1 states. Journal of Chemical Physics, 2019, 151, 214303.	3.0	11
42	Dissociation dynamics of simple chlorine containing molecules upon resonant Cl K- $\beta^*$ excitation. Journal of Chemical Physics, 2014, 140, 164304.	3.0	10
43	Influence of the thorium decay series on the background of high-resolution gamma-ray spectrometers. Applied Radiation and Isotopes, 2012, 70, 1005-1009.	1.5	9
44	Structural and dynamical properties of chlorinated hydrocarbons studied with resonant inelastic x-ray scattering. Journal of Chemical Physics, 2016, 144, 134309.	3.0	9
45	Effect of electric fields on the decay branching ratio of Pe1 doubly excited states in helium measured by time-resolved fluorescence. Physical Review A, 2006, 74, .	2.5	8
46	X-ray resonant Raman scattering from noble gas atoms and beyond. Nuclear Instruments & Methods in Physics Research B, 2009, 267, 221-225.	1.4	8
47	Synchrotron-radiation-based determination of XeL-subshell Coster-Kronig yields: A reexamination via high-resolution x-ray spectroscopy. Physical Review A, 2010, 81, .	2.5	8
48	Resonant inelastic X-ray spectroscopy of atoms and simple molecules: Satellite features and dependence on energy detuning and photon polarization. Journal of Electron Spectroscopy and Related Phenomena, 2015, 204, 356-364.	1.7	8
49	Effect of Ag Doping on Electronic Structure of Cluster Compounds Ag <sub>x</sub> Mo <sub>9</sub> Se <sub>11</sub> ( $x = 3.4, 3.9$ ). ACS Applied Energy Materials, 2018, 1, 4032-4039.	5.1	8
50	Fingerprinting Mean Composition of Lithium Polysulfide Standard Solutions by Applying High-Energy Resolution Fluorescence Detected X-ray Absorption Spectroscopy. Journal of Physical Chemistry Letters, 2020, 11, 5446-5450.	4.6	8
51	Partial photoionization of helium into the 2s2S and 2p2P ion states in the 3lnl <sup>2</sup> doubly-excited states region. Journal of Physics B: Atomic, Molecular and Optical Physics, 2005, 38, L153-L160.	1.5	7
52	Element-selective three-dimensional imaging of microparticles with a confocal micro-PIXE arrangement. X-Ray Spectrometry, 2009, 38, 526-539.	1.4	7
53	L-subshell Coster-Kronig yields of palladium determined via synchrotron-radiation-based high-resolution x-ray spectroscopy. Physical Review A, 2009, 80, .	2.5	7
54	Experimental confirmation of photon-induced spin-flip transitions in helium via triplet metastable yield spectra. Physical Review A, 2010, 81, .	2.5	7

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55	3D-reconstruction of an object by means of a confocal micro-PIXE. Journal of Analytical Atomic Spectrometry, 2010, 25, 28-33.	3.0	7
56	New results in high-resolution X-ray fluorescence spectroscopy. Journal of Physics: Conference Series, 2014, 488, 012014.	0.4	7
57	Formation of stable $\text{HCl} + \text{CH}_3$ resonant Auger decay in Collective effects in the radiative decay of the $2p$ state in helium. Physical Review A, 2018, 98, .	2.5	7
58	Collective effects in the radiative decay of the $2p$ state in helium. Physical Review A, 2018, 98, .	2.5	7
59	Resonant Auger decay of 2p hole in argon induced by electron impact. Nuclear Instruments & Methods in Physics Research B, 2009, 267, 260-262.	1.4	6
60	Resonant inelastic x-ray scattering on iso-C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub> around the chlorine K-edge: Structural and dynamical aspects. Journal of Chemical Physics, 2014, 141, 144301.	3.0	5
61	Molecular imaging of alkaloids in khat ( Catha edulis ) leaves with MeV-SIMS. Nuclear Instruments & Methods in Physics Research B, 2017, 404, 140-145.	1.4	5
62	Beer-Lambert law in the time domain. Physical Review A, 2018, 97, .	2.5	5
63	Single photon simultaneous K-shell ionization/excitation in C <sub>6</sub> H <sub>6</sub> : experiment and theory. Journal of Physics B: Atomic, Molecular and Optical Physics, 2020, 53, 244010.	1.5	5
64	Auger electron-ion coincidence spectrometry after electronic excitation of L-shell in argon. Radiation Physics and Chemistry, 2007, 76, 487-491.	2.8	4
65	High-resolution KMM radiative Auger x-ray emission spectra of calcium induced by synchrotron radiation. Physical Review A, 2011, 83, .	2.5	4
66	Resonant inelastic X-ray scattering on atoms and simple molecules in the tender X-ray region. Journal of Electron Spectroscopy and Related Phenomena, 2013, 188, 47-52.	1.7	4
67	Characterization of Electrochemical Processes in Metal-Organic Batteries by X-ray Raman Spectroscopy. Journal of Physical Chemistry C, 2022, 126, 5435-5442.	3.1	4
68	Temperature dependence of the electrical resistivity and electronic structure of amorphous Fe <sub>100-x</sub> Zr <sub>x</sub> films and multilayers. Journal of Physics Condensed Matter, 2012, 24, 495402.	1.8	3
69	Inter- and intrachannel exchange interference in photoinduced Auger decay: The KrM <sub>4,5</sub> N <sub>1N23</sub> and XeN <sub>4,5</sub> O <sub>1O23</sub> cases. Physical Review A, 2013, 87, .	2.5	3
70	Avoided-crossing spectroscopy technique based on detection of atoms in metastable states. Physical Review A, 2014, 89, .	2.5	3
71	Observation of short-lived laser-dressed quantum states in the frequency plane. Physical Review A, 2019, 99, .	2.5	3
72	Electron dynamics in the core-excited CS <sub>2</sub> molecule revealed through resonant inelastic x-ray scattering spectroscopy. Journal of Physics: Conference Series, 2015, 635, 112012.	0.4	2

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73	Auger decay of the 2p vacancy in chlorine. Physical Review A, 2019, 100, .	2.5	2
74	Amplification of fluorescence from the $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle a \langle \text{mml:mi} \rangle \langle \text{mml:mpace} \text{width="0.16em"} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mi} \rangle P \langle \text{mml:mi} \rangle \langle \text{mml:none} \rangle \langle \text{mml:mi} \rangle o \langle \text{mml:mi} \rangle \langle \text{mml:mprescripts} \rangle \langle \text{mml:none} \rangle \langle \text{mml:mn} \rangle 1 \langle \text{mml:mn} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ doubly excited state in helium. Physical Review A, 2019, 99, .	2.5	2
75	Statistics of a Sharp GP2Y Low-Cost Aerosol PM Sensor Output Signals. Sensors, 2020, 20, 6707.	3.8	2
76	Core-hole spectator Auger decay. Physical Review A, 2020, 101, .	2.5	2
77	Molecular imaging of human hair with MeV-SIMS: A case study of cocaine detection and distribution in the hair of a cocaine user. PLoS ONE, 2022, 17, e0263338.	2.5	2
78	Fluorescence of Helium Doubly Excited States. AIP Conference Proceedings, 2003, , .	0.4	1
79	Quenching of the $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle p \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle n \langle \text{mml:mi} \rangle \langle \text{mml:mpace} \text{width="0.16em"} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msup} \rangle \langle \text{mml:mi} \rangle P \langle \text{mml:mi} \rangle \langle \text{mml:none} \rangle \langle \text{mml:mn} \rangle 1 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mmultiscripts} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ doubly excited states of helium by a dc electric field. Physical Review A, 2014, 90, .	2.5	1
80	Single photon core ionization with core excitation: a new spectroscopic tool. Journal of Physics: Conference Series, 2015, 635, 112093.	0.4	1
81	Self-induced splitting of x-ray emission lines. Physical Review A, 2020, 102, .	2.5	1
82	Time resolved fluorescence of Stark mixed He doubly excited states below He <sup>+</sup> (n = 2). Journal of Physics: Conference Series, 2009, 194, 022014.	0.4	0
83	Multichannel Digital Acquisition FPGA-based System for Photon Detectors Equipped with Resistive and Reset Preamplifiers. , 2010, , .		0
84	High resolution resonant x-ray scattering on diluted targets $\hat{\epsilon}^{\epsilon}$ structure data and relaxation dynamics. Journal of Physics: Conference Series, 2012, 388, 022046.	0.4	0
85	Single-Photon Core Double Ionization in Molecules. Journal of Physics: Conference Series, 2012, 388, 022027.	0.4	0
86	Interference of electron pairs in photoinduced N <sub>4,5</sub> <sup>+</sup> O <sub>1</sub> O <sub>2,3</sub> Auger decay in xenon. Journal of Physics: Conference Series, 2012, 388, 022094.	0.4	0
87	Coherence of L <sub>2,3</sub> M <sub>2,3</sub> Auger decay paths by energy selected photoionization of argon. Journal of Physics: Conference Series, 2012, 388, 022095.	0.4	0
88	Resonant X-ray Scattering of carbonyl sulfide at the sulfur K edge. Journal of Physics: Conference Series, 2015, 635, 112109.	0.4	0
89	Anticrossing spectrometry with synchrotron light. Physical Review A, 2017, 96, .	2.5	0
90	Coupling of autoionizing states by a chirped laser pulse. Journal of Physics: Conference Series, 2020, 1412, 082008.	0.4	0

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91	Magnetic bottle electron spectrometer driven by electron pulses. Review of Scientific Instruments, 2020, 91, 073108.	1.3	0
92	Auger decay of Rubidium atom after 3d-shell ionization. Journal of Physics: Conference Series, 2020, 1412, 152037.	0.4	0
93	Multi-electron/ion coincidence spectroscopy in Xe triple ionization. Journal of Physics: Conference Series, 2020, 1412, 152038.	0.4	0