Andrei A Kolmakov

List of Publications by Year in Descending Order

127 papers	8,875 citations	41 h-index	93 g-index
137 ext. papers	9,491 ext. citations	6.4 avg, IF	5.99 L-index

#	Paper	IF	Citations
127	Addressable graphene encapsulation of wet specimens on a chip for optical, electron, infrared and X-ray based spectromicroscopy studies. *Lab on A Chip*, **2021**, 21, 4618-4628	7.2	1
126	Electron Beam Printed Hydrogels as a Hydration Source for Graphene Encapsulated Specimens. *Microscopy and Microanalysis*, **2021**, 27, 2240-2241	0.5	
125	Comparative XPS and SEM Spatiotemporal Potential Mapping of Ionic Liquid Polarization in a Coplanar Electrochemical Device. *Analytical Chemistry*, **2021**, 93, 13268-13273	7.8	2
124	Graphene Membrane Encapsulation Platform for Multi-technique Spectromicroscopy of Wet Objects. *Microscopy and Microanalysis*, **2020**, 26, 2228-2229	0.5	
123	Operando Scanning Electron and Microwave Microscopies in Plasmas: A Comparative Analysis. *Microscopy and Microanalysis*, **2020**, 26, 2498-2499	0.5	
122	Extraordinary performance of semiconducting metal oxide gas sensors using dielectric excitation. *Nature Electronics*, **2020**, 3, 280-289	28.4	38
121	Bio-inspired gas sensing: boosting performance with sensor optimization guided by "machine learning". *Faraday Discussions*, **2020**, 223, 161-182	3.6	3
120	Nanoscale Mapping of the Double Layer Potential at the Graphene-Electrolyte Interface. *Nano Letters*, **2020**, 20, 1336-1344	11.5	14
119	Radiation damage of liquid electrolyte during focused X-ray beam photoelectron spectroscopy. *Surface Science*, **2020**, 697, 121608	1.8	5
118	Electron and X-ray Focused Beam-Induced Cross-Linking in Liquids: Toward Rapid Continuous 3D Nanoprinting and Interfacing using Soft Materials. *ACS Nano*, **2020**, 14, 12982-12992	16.7	9
117	Probing Electrified Liquid-Solid Interfaces with Scanning Electron Microscopy. *ACS Applied Materials & Interfaces*, **2020**, 12, 56650-56657	9.5	3
116	Radiation Damage on Liquid Electrolyte during Spatially Resolved Soft X-ray Photoemission Measurements. *Microscopy and Microanalysis*, **2019**, 25, 730-731	0.5	
115	Operando photoelectron emission spectroscopy and microscopy at Elettra soft X-ray beamlines: From model to real functional systems. *Journal of Electron Spectroscopy and Related Phenomena*, **2019**, 146902	1.7	3
114	From Microparticles to Nanowires and Back: Radical Transformations in Plated Li Metal Morphology Revealed via in Situ Scanning Electron Microscopy. *Nano Letters*, **2018**, 18, 1644-1650	11.5	40
113	Low-temperature thermal reduction of graphene oxide: In situ correlative structural, thermal desorption, and electrical transport measurements. *Applied Physics Letters*, **2018**, 112, 053103	3.4	30
112	Graphene windows enable photoelectron microscopies of liquid samples.. *Microscopy and Microanalysis*, **2018**, 24, 68-71	0.5	1
111	Polarization of the Graphene-Liquid Electrolyte Interface Probed by SEM. *Microscopy and Microanalysis*, **2018**, 24, 354-355	0.5	

110	Near-Field Probe Microscopy of Plasma Processing.. *Applied Physics Letters*, **2018**, 113,	3.4	6
109	In Aqua Electrochemistry Probed by XPEEM: Experimental Setup, Examples, and Challenges. *Topics in Catalysis*, **2018**, 61, 2195-2206	2.3	13
108	3-Dimensional Hydrogel Printing via Electron Crosslinking. *Microscopy and Microanalysis*, **2018**, 24, 348-349	0.5	1
107	Enabling Photoemission Electron Microscopy in Liquids via Graphene-Capped Microchannel Arrays. *Nano Letters*, **2017**, 17, 1034-1041	11.5	43
106	Graphene Microcapsule Arrays for Combinatorial Electron Microscopy and Spectroscopy in Liquids. *ACS Applied Materials & Interfaces*, **2017**, 9, 26492-26502	9.5	24
105	Imaging and Analysis of Encapsulated Objects through Self-Assembled Electron and Optically Transparent Graphene Oxide Membranes. *Advanced Materials Interfaces*, **2017**, 4, 1600734	4.6	6
104	SEM and Auger Electron Spectroscopy of Liquid Water through Graphene Membrane. *Microscopy and Microanalysis*, **2017**, 23, 880-881	0.5	
103	Multi-environment Nanocalorimeter with Electrical Contacts for Use in the Scanning Electron Microscope. *Materials Horizons*, **2017**, 4, 1128-1134	14.4	12
102	Combinatorial Microscopy in Liquids with Low Energy Electrons. *Microscopy and Microanalysis*, **2017** , 23, 186-187	0.5	
101	Interfacial Electrochemistry in Liquids Probed with Photoemission Electron Microscopy. *Journal of the American Chemical Society*, **2017**, 139, 18138-18141	16.4	27
100	Stateful characterization of resistive switching TiO with electron beam induced currents. *Nature Communications*, **2017**, 8, 1972	17.4	20
99	Toward Clean Suspended CVD Graphene. *RSC Advances*, **2016**, 6, 83954-83962	3.7	14
98	Fabrication, Testing, and Simulation of All-Solid-State Three-Dimensional Li-Ion Batteries. *ACS Applied Materials & Interfaces*, **2016**, 8, 32385-32391	9.5	76
97	Recent approaches for bridging the pressure gap in photoelectron microspectroscopy. *Topics in Catalysis*, **2016**, 59, 448-468	2.3	38
96	Seeing through Walls at the Nanoscale: Microwave Microscopy of Enclosed Objects and Processes in Liquids. *ACS Nano*, **2016**, 10, 3562-70	16.7	39
95	Local coexistence of VO2 phases revealed by deep data analysis. *Scientific Reports*, **2016**, 6, 29216	4.9	6
94	Design and Application of Variable Temperature Setup for Scanning Electron Microscopy in Gases and Liquids at Ambient Conditions. *Microscopy and Microanalysis*, **2015**, 21, 765-70	0.5	7
93	Ultrathin Gas Permeable Oxide Membranes for Chemical Sensing: Nanoporous TaO Test Study. *Materials*, **2015**, 8, 6677-6684	3.5	7

92	In situ SEM study of lithium intercalation in individual V2O5 nanowires. *Nanoscale*, **2015**, 7, 3022-7	7.7	35
91	Intrinsic device-to-device variation in graphene field-effect transistors on a Si/SiO2 substrate as a platform for discriminative gas sensing. *Applied Physics Letters*, **2014**, 104, 013114	3.4	24
90	Photoelectron spectroscopy of wet and gaseous samples through graphene membranes. *Nanoscale* , **2014**, 6, 14394-403	7.7	68
89	Insights into capacity loss mechanisms of all-solid-state Li-ion batteries with Al anodes. *Journal of Materials Chemistry A*, **2014**, 2, 20552-20559	13	32
88	In situ X-ray microdiffraction studies inside individual VO2 microcrystals. *Acta Materialia*, **2013**, 61, 2751-2762	4	26
87	Multisensor Micro-Arrays Based on Metal Oxide Nanowires for Electronic Nose Applications **2013**, 465-502		3
86	Phytotoxicity, accumulation and transport of silver nanoparticles by Arabidopsis thaliana. *Nanotoxicology*, **2013**, 7, 323-37	5.3	204
85	Highly selective gas sensor arrays based on thermally reduced graphene oxide. *Nanoscale*, **2013**, 5, 5426-34	7.7	219
84	Heat dissipation from suspended self-heated nanowires: gas sensor prospective. *Nanotechnology*, **2013**, 24, 444009	3.4	13
83	Scanning Near-Field Microwave Microscopy of VO2 and Chemical Vapor Deposition Graphene. *Advanced Functional Materials*, **2013**, 23, 2635-2645	15.6	20
82	Electron transparent graphene windows for environmental scanning electron microscopy in liquids and dense gases. *Nanotechnology*, **2012**, 23, 505704	3.4	43
81	Doping-based stabilization of the M2 phase in free-standing VO2 nanostructures at room temperature. *Nano Letters*, **2012**, 12, 6198-205	11.5	120
80	In situ monitoring of the growth, intermediate phase transformations and templating of single crystal VO2 nanowires and nanoplatelets. *ACS Nano*, **2011**, 5, 3373-84	16.7	67
79	Graphene oxide windows for in situ environmental cell photoelectron spectroscopy. *Nature Nanotechnology*, **2011**, 6, 651-7	28.7	177
78	Drop-casted self-assembling graphene oxide membranes for scanning electron microscopy on wet and dense gaseous samples. *ACS Nano*, **2011**, 5, 10047-54	16.7	95
77	Polarized Raman Scattering from a Single, Segmented SnO2 Wire. *Journal of Physical Chemistry C*, **2011**, 115, 17270-17277	3.8	9
76	The electrical characterization of a multi-electrode odor detection sensor array based on the single SnO2 nanowire. *Thin Solid Films*, **2011**, 520, 898-903	2.2	21
75	Electromechanical actuation and current-induced metastable states in suspended single-crystalline VO2 nanoplatelets. *Nano Letters*, **2011**, 11, 3065-73	11.5	47

74	Lattice-Symmetry-Driven Phase Competition in Vanadium Dioxide. *Materials Research Society Symposia Proceedings*, **2011**, 1292, 67		1
73	Single-nanobelt electronic nose: engineering and tests of the simplest analytical element. *ACS Nano*, **2010**, 4, 4487-94	16.7	52
72	Scanning Electron Microscopy for in Situ Monitoring of Semiconductor−Liquid Interfacial Processes: Electron Assisted Reduction of Ag Ions from Aqueous Solution on the Surface of TiO2 Rutile Nanowire. *Journal of Physical Chemistry C*, **2010**, 114, 17233-17237	3.8	21
71	Mesoscopic metal-insulator transition at ferroelastic domain walls in VO2. *ACS Nano*, **2010**, 4, 4412-9	16.7	63
70	Interplay between ferroelastic and metal-insulator phase transitions in strained quasi-two-dimensional VO2 nanoplatelets. *Nano Letters*, **2010**, 10, 2003-11	11.5	91
69	Symmetry relationship and strain-induced transitions between insulating M1 and M2 and metallic R phases of vanadium dioxide. *Nano Letters*, **2010**, 10, 4409-16	11.5	125
68	Contactless monitoring of the diameter-dependent conductivity of GaAs nanowires. *Nano Research*, **2010**, 3, 706-713	10	22
67	Interactions between engineered nanoparticles (ENPs) and plants: phytotoxicity, uptake and accumulation. *Science of the Total Environment*, **2010**, 408, 3053-61	10.2	777
66	A novel model for (percolating) nanonet chemical sensors for microarray-based E-nose applications **2009**,		3
65	Self-heated Nanowire Sensors: Opportunities, Optimization and Limitations **2009**,		5
64	Percolating SnO2 nanowire network as a stable gas sensor: Direct comparison of long-term performance versus SnO2 nanoparticle films. *Sensors and Actuators B: Chemical*, **2009**, 139, 699-703	8.5	122
63	Gas sensor based on metal-insulator transition in VO2 nanowire thermistor. *Nano Letters*, **2009**, 9, 2322-6	11.5	347
62	Spectromicroscopy for addressing the surface and electron transport properties of individual 1-d nanostructures and their networks. *ACS Nano*, **2008**, 2, 1993-2000	16.7	79
61	Some recent trends in the fabrication, functionalisation and characterisation of metal oxide nanowire gas sensors. *International Journal of Nanotechnology*, **2008**, 5, 450	1.5	33
60	Evidence of the self-heating effect on surface reactivity and gas sensing of metal−oxide nanowire chemiresistors. *Nanotechnology*, **2008**, 19, 355502	3.4	72
59	Copper phthalocyanine quasi-1D nanostructures: growth morphologies and gas sensing properties. *Journal of Nanoscience and Nanotechnology*, **2008**, 8, 212-21	1.3	9
58	Functionalizing nanowires with catalytic nanoparticles for gas sensing application. *Journal of Nanoscience and Nanotechnology*, **2008**, 8, 111-21	1.3	59
57	Characterization of individual SnO2 nanobelts with STM. *Surface Science*, **2008**, 602, L112-L114	1.8	6

56	Nanostructures: Sensor and Catalytic Properties. *Nanostructure Science and Technology*, **2008**, 305-344	0.9	3
55	Metal oxide "nanosponges" as chemical sensors: highly sensitive detection of hydrogen with nanosponge titania. *Angewandte Chemie - International Edition*, **2007**, 46, 4298-301	16.4	28
54	Metal Oxide Nanospongesas Chemical Sensors: Highly Sensitive Detection of Hydrogen with Nanosponge Titania. *Angewandte Chemie*, **2007**, 119, 4376-4379	3.6	11
53	Coupling nanowire chemiresistors with MEMS microhotplate gas sensing platforms. *Applied Physics Letters*, **2007**, 91, 063118	3.4	70
52	Chemical Sensors from Lead Metallophthalocyanine Whiskers **2007**,		1
51	Nanoengineered chemiresistors: the interplay between electron transport and chemisorption properties of morphologically encoded SnO2nanowires. *Nanotechnology*, **2007**, 18, 055707	3.4	30
50	A gradient microarray electronic nose based on percolating SnO(2) nanowire sensing elements. *Nano Letters*, **2007**, 7, 3182-8	11.5	244
49	Application of spectromicroscopy tools to explore local origins of sensor activity in quasi-1D oxide nanostructures. *Nanotechnology*, **2006**, 17, 4014-8	3.4	9
48	Highly sensitive gas sensor based on integrated titania nanosponge arrays. *Applied Physics Letters*, **2006**, 88, 102904	3.4	80
47	Toward the nanoscopic "electronic nose": hydrogen vs carbon monoxide discrimination with an array of individual metal oxide nano- and mesowire sensors. *Nano Letters*, **2006**, 6, 1584-8	11.5	221
46	The effect of morphology and surface doping on sensitization of quasi-1D metal oxide nanowire gas sensors **2006**,		9
45	Formation, deposition and examination of size selected metal clusters on semiconductor surfaces: An experimental setup. *International Journal of Mass Spectrometry*, **2006**, 254, 202-209	1.9	29
44	Pinning mass-selected Agn clusters on the TiO2(110)-1x1 surface via deposition at high kinetic energy. *Journal of Chemical Physics*, **2005**, 123, 204701	3.9	26
43	Landing of size-selected Agn+ clusters on single crystal TiO2 (110)-(1x1) surfaces at room temperature. *Journal of Chemical Physics*, **2005**, 122, 81102	3.9	56
42	Encoding morphology in oxide nanostructures during their growth. *Nano Letters*, **2005**, 5, 2019-22	11.5	53
41	Enhanced gas sensing by individual SnO2 nanowires and nanobelts functionalized with Pd catalyst particles. *Nano Letters*, **2005**, 5, 667-73	11.5	1205
40	Electronic control of chemistry and catalysis at the surface of an individual tin oxide nanowire. *Journal of Physical Chemistry B*, **2005**, 109, 1923-9	3.4	151
39	Synthesis of Au nanoclusters supported upon a TiO2 nanotube array. *Journal of Materials Research*, **2005**, 20, 1093-1096	2.5	12

38	The nucleation sites of Ag clusters grown by vapor deposition on a TiO2(110)-1□ surface. *Surface Science*, **2005**, 575, 60-68	1.8	31
37	Electronic transport imaging in a multiwire SnO2 chemical field-effect transistor device. *Journal of Applied Physics*, **2005**, 98, 044503	2.5	58
36	Low Cost Integrated Sensors Utilizing Patterned Nano-Structured Titania Arrays Fabricated Using a Simple Process. *Materials Research Society Symposia Proceedings*, **2004**, 828, 313		
35	Chemical Sensing and Catalysis by One-Dimensional Metal-Oxide Nanostructures. *ChemInform*, **2004**, 35, no		2
34	Control of Catalytic Reactions at the Surface of a Metal Oxide Nanowire by Manipulating Electron Density Inside It. *Nano Letters*, **2004**, 4, 403-407	11.5	214
33	CHEMICAL SENSING AND CATALYSIS BY ONE-DIMENSIONAL METAL-OXIDE NANOSTRUCTURES. *Annual Review of Materials Research*, **2004**, 34, 151-180	12.8	942
32	Growth of Au on TiO2(110) on a Cluster-by-Cluster Basis. *Japanese Journal of Applied Physics*, **2003**, 42, 4795-4798	1.4	16
31	Detection of CO and O2 Using Tin Oxide Nanowire Sensors. *Advanced Materials*, **2003**, 15, 997-1000	24	941
30	Topotactic Thermal Oxidation of Sn Nanowires: Intermediate Suboxides and Core□shell Metastable Structures. *Nano Letters*, **2003**, 3, 1125-1129	11.5	81
29	In situ scanning tunneling microscopy of individual supported metal clusters at reactive gas pressures from 10□ to 104 Pa. *Review of Scientific Instruments*, **2003**, 74, 2444-2450	1.7	41
28	Current rectification in a single GaN nanowire with a well-defined p□ junction. *Applied Physics Letters*, **2003**, 83, 1578-1580	3.4	84
27	In situ scanning tunneling microscopy of oxide-supported metal clusters: nucleation, growth, and thermal evolution of individual particles. *Chemical Record*, **2002**, 2, 446-57	6.6	41
26	Geometric structure of (NaCl)4 clusters studied with XANES at the chlorine L-edge and at the sodium K-edge. *Chemical Physics Letters*, **2002**, 356, 23-28	2.5	12
25	Innershell absorption spectroscopy on CdS: Free clusters and nanocrystals. *Journal of Chemical Physics*, **2001**, 114, 489	3.9	12
24	Na 1s photoabsorption of free and deposited NaCl clusters: Development of bond length with cluster size. *Physical Review B*, **2001**, 64,	3.3	20
23	Photoabsorption of NaCl clusters at the Na K-edge: Development of the bond length with the cluster size. *Journal of Chemical Physics*, **2001**, 115, 1319-1323	3.9	12
22	Scanning tunneling microscopy of gold clusters on TiO2(110): CO oxidation at elevated pressures. *Surface Science*, **2001**, 490, L597-L601	1.8	63
21	Spectromicroscopy study of an Ni+Ag/Si(111) interface. *Surface and Interface Analysis*, **2000**, 30, 479-483	1.5	4

20	Local geometry and electronic structure of free NaCl clusters. *Physics of the Solid State*, **2000**, 42, 1942-1945	0.8	4
19	Argon coated alkali halide clusters: the effect of the coating on the ionization and fragmentation dynamics. *Chemical Physics Letters*, **2000**, 319, 465-471	2.5	7
18	Imaging gold clusters on TiO2(110) at elevated pressures and temperatures. *Catalysis Letters*, **2000**, 70, 93-97	2.8	61
17	Characterization of surface defects on MgO thin films by ultraviolet photoelectron and metastable impact electron spectroscopies. *Journal of Chemical Physics*, **2000**, 113, 7564-7570	3.9	57
16	Innershell photoionisation spectroscopy of NaCl clusters. *Journal of Electron Spectroscopy and Related Phenomena*, **1999**, 101-103, 199-203	1.7	6
15	Observation of small metastable multiply charged CsI clusters embedded inside rare gas clusters. *European Physical Journal D*, **1999**, 9, 273-276	1.3	
14	Aggregation of small CsI clusters inside Ar clusters: ionization and fragmentation under soft X-ray excitation. *European Physical Journal D*, **1999**, 9, 277-281	1.3	3
13	Ag + Au bilayers on Si(111) studied with scanning photoemission microscopy. *Journal of Electron Spectroscopy and Related Phenomena*, **1998**, 88-91, 991-995	1.7	
12	Artefact formation in scanning photoelectron emission microscopy. *Ultramicroscopy*, **1998**, 75, 35-51	3.1	63
11	Effect of a Composition Discontinuity on the Evolution of a Bimetal Interface Studied by Photoemission Microscopy: Au Patch Deposited on a Ag/Si(111) Surface. *Surface Review and Letters*, **1998**, 05, 605-613	1.1	5
10	Ag on Au/Si(111):mInterfacial interactions on a submicrometer scale. *Physical Review B*, **1997**, 55, 4101-4104	3.3	13
9	Au on Ag/Si(111)-(3□)R30□ A spectromicroscopy study of a bimetal-silicon interface. *Physical Review B*, **1997**, 56, 5003-5013	3.3	30
8	Spectromicroscopic evidence of Ge-GaSe chemical reactions: Not a Schottky system. *Physical Review B*, **1997**, 55, R4899-R4902	3.3	8
7	Photoelectron Spectromicroscopic Study of the Spreading Behavior of MoO3 on Titania and Alumina Model Supports□ *Journal of Physical Chemistry B*, **1997**, 101, 10004-10011	3.4	37
6	Interface dynamics and electromigration of the system Au□AgSi(111) using photoelectron emission microscopy. *Surface Science*, **1997**, 377-379, 969-974	1.8	7
5	Spectromicroscopy and thermal evolution of an bimetallic interface. *Surface Science*, **1997**, 389, 241-250	1.8	5
4	Scanning photoelectron microscopy of a interface: Au coadsorbed on. *Surface Science*, **1997**, 377-379, 145-149	1.8	8
3	ESCA Microscopy at ELETTRA: what it is like to perform spectromicroscopy experiments on a third generation synchrotron radiation source. *Journal of Electron Spectroscopy and Related Phenomena*, **1997**, 84, 73-83	1.7	132

2	Membrane-Based Environmental Cells for SEM in Liquids78-105		2
1	Spatially Resolved Potential and Li-Ion Distributions Reveal Performance-Limiting Regions in Solid-State Batteries. *ACS Energy Letters*,3944-3951	20.1	4