Nick Lavrik

List of Publications by Year in descending order

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		71061	66879
155	6,613	41	78
papers	citations	h-index	g-index
156	156	156	8097
130	130	130	8077
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Cantilever transducers as a platform for chemical and biological sensors. Review of Scientific Instruments, 2004, 75, 2229-2253.	0.6	1,047
2	Femtogram mass detection using photothermally actuated nanomechanical resonators. Applied Physics Letters, 2003, 82, 2697-2699.	1.5	294
3	Large scale atmospheric pressure chemical vapor deposition of graphene. Carbon, 2013, 54, 58-67.	5.4	241
4	The effect of intrinsic crumpling on the mechanics of free-standing graphene. Nature Communications, 2015, 6, 8789.	5.8	219
5	Evolutionary selection growth of two-dimensional materials on polycrystalline substrates. Nature Materials, 2018, 17, 318-322.	13.3	204
6	Graphene Nucleation Density on Copper: Fundamental Role of Background Pressure. Journal of Physical Chemistry C, 2013, 117, 18919-18926.	1.5	179
7	Bimaterial Microcantilevers as a Hybrid Sensing Platform. Advanced Materials, 2008, 20, 653-680.	11.1	172
8	Peer Reviewed: Microcantilever Transducers: A new Approach in Sensor Technology. Analytical Chemistry, 2002, 74, 568 A-575 A.	3.2	169
9	Direct molecular force measurements of multiple adhesive interactions between cadherin ectodomains. Proceedings of the National Academy of Sciences of the United States of America, 1999, 96, 11820-11824.	3.3	160
10	Performance of uncooled microcantilever thermal detectors. Review of Scientific Instruments, 2004, 75, 1134-1148.	0.6	157
11	Electrical and thermal conductivity of low temperature CVD graphene: the effect of disorder. Nanotechnology, 2011, 22, 275716.	1.3	132
12	High-Performance Field-Effect Transistors Based on Polystyrene- <i>b</i> -Poly(3-hexylthiophene) Diblock Copolymers. ACS Nano, 2011, 5, 3559-3567.	7.3	122
13	Bi-material terahertz sensors using metamaterial structures. Optics Express, 2013, 21, 13256.	1.7	109
14	Quantifying Morphology of Sands Using 3D Imaging. Journal of Materials in Civil Engineering, 2015, 27,	1.3	107
15	Voltage-Gated Hydrophobic Nanopores. ACS Nano, 2011, 5, 7453-7461.	7.3	105
16	Gold Nano-Structures for Transduction of Biomolecular Interactions into Micrometer Scale Movements. Biomedical Microdevices, 2001, 3, 35-44.	1.4	95
17	Self-propelled sweeping removal of dropwise condensate. Applied Physics Letters, 2015, 106, .	1.5	95
18	3Dâ€Printed Carbon Electrodes for Neurotransmitter Detection. Angewandte Chemie - International Edition, 2018, 57, 14255-14259.	7.2	94

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19	Enantioselective Sensors Based on Antibody-Mediated Nanomechanics. Analytical Chemistry, 2003, 75, 2342-2348.	3.2	89
20	Nanofabrication of Densely Packed Metalâ€"Polymer Arrays for Surface-Enhanced Raman Spectrometry. Applied Spectroscopy, 2005, 59, 1501-1508.	1.2	85
21	Sensors for low-weight organic molecules based on molecular imprinting technique. Sensors and Actuators B: Chemical, 1994, 19, 629-631.	4.0	77
22	Silicon Nanopillars for Field-Enhanced Surface Spectroscopy. ACS Nano, 2012, 6, 2948-2959.	7.3	75
23	Polyaniline label-based conductometric sensor for IgG detection. Sensors and Actuators B: Chemical, 1996, 34, 283-288.	4.0	72
24	Asymmetric Wettability of Nanostructures Directs Leidenfrost Droplets. ACS Nano, 2014, 8, 860-867.	7.3	72
25	Enhanced chemi-mechanical transduction at nanostructured interfaces. Chemical Physics Letters, 2001, 336, 371-376.	1.2	70
26	Uncooled infrared imaging using bimaterial microcantilever arrays. Applied Physics Letters, 2006, 89, 073118.	1.5	69
27	Strong terahertz absorption using SiO2/Al based metamaterial structures. Applied Physics Letters, 2012, 100, .	1.5	69
28	Hidden Area and Mechanical Nonlinearities in Freestanding Graphene. Physical Review Letters, 2017, 118, 266101.	2.9	67
29	Nanostructured Microcantilevers with Functionalized Cyclodextrin Receptor Phases:Â Self-Assembled Monolayers and Vapor-Deposited Films. Analytical Chemistry, 2002, 74, 3118-3126.	3.2	64
30	IR imaging using uncooled microcantilever detectors. Ultramicroscopy, 2003, 97, 451-458.	0.8	64
31	Chemical detection based on adsorption-induced and photoinduced stresses in microelectromechanical systems devices. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2001, 19, 1173.	1.6	59
32	"Self-leveling―uncooled microcantilever thermal detector. Applied Physics Letters, 2002, 81, 1306-1308.	1.5	57
33	Nanotechnology and chip level systems for pressure driven liquid chromatography and emerging analytical separation techniques: A review. Analytica Chimica Acta, 2011, 694, 6-20.	2.6	56
34	Photomechanical chemical microsensors. Sensors and Actuators B: Chemical, 2001, 76, 393-402.	4.0	51
35	Near-field microwave scanning probe imaging of conductivity inhomogeneities in CVD graphene. Nanotechnology, 2012, 23, 385706.	1.3	51
36	Enhancing chemi-mechanical transduction in microcantilever chemical sensing by surface modification. Ultramicroscopy, 2003, 97, 417-424.	0.8	49

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37	Graphene Bimetallic-like Cantilevers: Probing Graphene/Substrate Interactions. Nano Letters, 2011, 11, 4748-4752.	4.5	49
38	Hydrogen peroxide – sensitive enzyme sensor based on phthalocyanine thin film. Analytica Chimica Acta, 1999, 391, 289-297.	2.6	48
39	Detection and differentiation of biological species using microcalorimetric spectroscopy. Ultramicroscopy, 2003, 97, 459-465.	0.8	46
40	3D-Printed Carbon Nanoelectrodes for In Vivo Neurotransmitter Sensing. Nano Letters, 2020, 20, 6831-6836.	4. 5	45
41	Complexing properties of calix[4]resorcinolarene LB films. Thin Solid Films, 1995, 259, 244-247.	0.8	44
42	Carbon nanospikes have better electrochemical properties than carbon nanotubes due to greater surface roughness and defect sites. Carbon, 2019, 155, 250-257.	5.4	44
43	Composite polyaniline/calixarene Langmuir - Blodgett films for gas sensing. Nanotechnology, 1996, 7, 315-319.	1.3	42
44	Detection of Explosive Compounds with the Use of Microcantilevers with Nanoporous Coatings. Sensor Letters, 2003, 1, 25-32.	0.4	42
45	High-Aspect-Ratio, Silicon Oxide-Enclosed Pillar Structures in Microfluidic Liquid Chromatography. Analytical Chemistry, 2010, 82, 9549-9556.	3.2	39
46	Superhydrophobic Analyte Concentration Utilizing Colloid-Pillar Array SERS Substrates. Analytical Chemistry, 2014, 86, 11819-11825.	3.2	39
47	Arrays of SiO2 substrate-free micromechanical uncooled infrared and terahertz detectors. Journal of Applied Physics, 2008, 104, 054508.	1.1	37
48	Length scale of Leidenfrost ratchet switches droplet directionality. Nanoscale, 2014, 6, 9293-9299.	2.8	35
49	Enclosed pillar arrays integrated on a fluidic platform for on-chip separations and analysis. Lab on A Chip, 2010, 10, 1086.	3.1	34
50	Mapping internal structure of coal by confocal micro-Raman spectroscopy and scanning microwave microscopy. Fuel, 2014, 126, 32-37.	3.4	34
51	Detection of anthrax simulants with microcalorimetric spectroscopy: Bacillus subtilis and Bacillus cereus spores. Applied Optics, 2003, 42, 1757.	2.1	31
52	Independent component analysis of nanomechanical responses of cantilever arrays. Analytica Chimica Acta, 2007, 584, 101-105.	2.6	31
53	Influence of Geometry on Thin Layer and Diffusion Processes at Carbon Electrodes. Langmuir, 2021, 37, 2667-2676.	1,6	31
54	Studies of the Optical Properties of Metal-Pliable Polymer Composite Materials. Applied Spectroscopy, 2003, 57, 1346-1352.	1,2	30

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55	Development of MEMS based pyroelectric thermal energy harvesters. Proceedings of SPIE, 2011, , .	0.8	29
56	Silicon Nanopillars As a Platform for Enhanced Fluorescence Analysis. Analytical Chemistry, 2013, 85, 9031-9038.	3.2	29
57	Quantitative 3D-KPFM imaging with simultaneous electrostatic force and force gradient detection. Nanotechnology, 2015, 26, 175707.	1.3	29
58	Ionic Conductance through Graphene: Assessing Its Applicability as a Proton Selective Membrane. ACS Nano, 2019, 13, 12109-12119.	7.3	28
59	Design and characterization of terahertz-absorbing nano-laminates of dielectric and metal thin films. Optics Express, 2010, 18, 14488.	1.7	27
60	Enhanced Interfacial Adhesion and Osteogenesis for Rapid "Bone-like―Biomineralization by PECVD-Based Silicon Oxynitride Overlays. ACS Applied Materials & 2015, 7, 15368-15379.	4.0	27
61	Review of pyroelectric thermal energy harvesting and new MEMs-based resonant energy conversion techniques. Proceedings of SPIE, 2012, , .	0.8	26
62	An approach to conductometric immunosensor based on phthalocyanine thin film. Biosensors and Bioelectronics, 1998, 13, 359-369.	5.3	25
63	Characterization of the strain-rate–dependent mechanical response of single cell–cell junctions. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	25
64	Protonation and charge transfer in polyaniline: an optical absorption study of the mixed solutions. Synthetic Metals, 1997, 90, 1-4.	2.1	24
65	Scanning Nearâ€Field Microwave Microscopy of VO ₂ and Chemical Vapor Deposition Graphene. Advanced Functional Materials, 2013, 23, 2635-2645.	7.8	24
66	Growth and Electrochemical Characterization of Carbon Nanospike Thin Film Electrodes. Journal of the Electrochemical Society, 2014, 161, H558-H563.	1.3	24
67	Optical and Direct Force Measurements of the Interactions between Monolayers of Aromatic Macrocycles on Surfactant Monolayers. Langmuir, 2000, 16, 1842-1851.	1.6	23
68	Cryogenic Etching of Silicon: An Alternative Method for Fabrication of Vertical Microcantilever Master Molds. Journal of Microelectromechanical Systems, 2010, 19, 64-74.	1.7	22
69	Lithography-free approach to highly efficient, scalable SERS substrates based on disordered clusters of disc-on-pillar structures. Nanotechnology, 2013, 24, 505302.	1.3	22
70	Structure and electronic properties of Langmuir-Blodgett films of calixarene/fullerene composites. Supramolecular Science, 1997, 4, 341-347.	0.7	21
71	Surface-enhanced resonance Raman scattering of adsorbates under liquid nitrogen. Chemical Physics Letters, 2001, 339, 167-173.	1.2	21
72	Surface enhanced Raman spectroscopy for microfluidic pillar arrayed separation chips. Analyst, The, 2012, 137, 1005-1012.	1.7	21

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73	Highly Ordered Silicon Pillar Arrays As Platforms for Planar Chromatography. Analytical Chemistry, 2013, 85, 11802-11808.	3.2	21
74	Surface-Enhanced Raman Scattering as an Emerging Characterization and Detection Technique. Journal of Nanotechnology, 2012, 2012, 1-15.	1.5	20
75	Local Field Enhancement of Pillar Nanosurfaces for SERS. Journal of Physical Chemistry C, 2010, 114, 18096-18102.	1.5	19
76	Efficient disc on pillar substrates for surface enhanced Raman spectroscopy. Chemical Communications, 2011, 47, 3814.	2.2	19
77	Wicking Nanopillar Arrays with Dual Roughness for Selective Transport and Fluorescence Measurements. ACS Applied Materials & https://www.accept.com/applied/particles/2014.com/applied/2016.	4.0	18
78	Multi-mode humidity sensing with water-soluble copper phthalocyanine for increased sensitivity and dynamic range. Scientific Reports, 2017, 7, 9921.	1.6	17
79	Response Signatures for Nanostructured, Optically-Probed, Functionalized Microcantilever Sensing Arrays. Sensor Letters, 2004, 2, 238-245.	0.4	17
80	Length Scale Selects Directionality of Droplets on Vibrating Pillar Ratchet. Advanced Materials Interfaces, 2014, 1, 1400337.	1.9	16
81	Template sensors for low weight organic molecules based on SiO2 surfaces. Sensors and Actuators B: Chemical, 1993, 14, 708-710.	4.0	14
82	Nitrogen oxide gas sensor based on tetra-tertbutyl copper phthalocyanine Langmuir-Blodgett filmsâ€. International Journal of Electronics, 1995, 78, 129-133.	0.9	14
83	Uncooled MEMS IR imagers with optical readout and image processing. , 2007, , .		14
84	Retention in Porous Layer Pillar Array Planar Separation Platforms. Analytical Chemistry, 2016, 88, 8741-8748.	3.2	14
85	Characterization of volatile, hydrophobic cyclodextrin derivatives as thin films for sensor applications. Sensors and Actuators B: Chemical, 2003, 92, 171-180.	4.0	13
86	Electrical conductivity of insulating polymer nanoscale layers: environmental effects. Physical Chemistry Chemical Physics, 2014, 16, 1977-1986.	1.3	13
87	3Dâ€Printed Carbon Electrodes for Neurotransmitter Detection. Angewandte Chemie, 2018, 130, 14451-14455.	1.6	13
88	Towards the D1 Protein Application for the Development of Sensors Specific for Herbicides. Analytical Letters, 1998, 31, 2577-2589.	1.0	12
89	Effect of the Microenvironment on the Recognition of Immobilized Cytochromes by Soluble Redox Proteins. Langmuir, 2000, 16, 3414-3421.	1.6	12
90	Singleâ€Pore Membranes Gated by Microelectromagnetic Traps. Advanced Materials, 2010, 22, 2759-2763.	11.1	12

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91	Nanotransfer Printing Using Plasma Etched Silicon Stamps and Mediated by in Situ Deposited Fluoropolymer. Journal of the American Chemical Society, 2011, 133, 7722-7724.	6.6	12
92	Infrared imaging using arrays of SiO_2micromechanical detectors. Optics Letters, 2012, 37, 3966.	1.7	12
93	Light-Activated Hybrid Nanocomposite Film for Water and Oxygen Sensing. ACS Applied Materials & Interfaces, 2018, 10, 31745-31754.	4.0	12
94	Cavitation on Deterministically Nanostructured Surfaces in Contact with an Aqueous Phase: A Small-Angle Neutron Scattering Study. Langmuir, 2014, 30, 9985-9990.	1.6	10
95	Pyroelectric Energy Scavenging Techniques for Self-Powered Nuclear Reactor Wireless Sensor Networks. Nuclear Technology, 2014, 188, 172-184.	0.7	10
96	Dispersion Characteristics in Disk-on-Pillar Array Nanostructures for Surface-Enhanced Raman Spectroscopy. Journal of Physical Chemistry C, 2011, 115, 13624-13629.	1.5	9
97	Magnetically gated microelectrodes. Chemical Communications, 2012, 48, 1009-1011.	2.2	9
98	Nanoscale pillar arrays for separations. Analyst, The, 2015, 140, 3347-3351.	1.7	9
99	Thermal conductivity of nano- and micro-crystalline diamond films studied by photothermal excitation of cantilever structures. Diamond and Related Materials, 2021, 113, 108279.	1.8	9
100	Uncooled infrared imaging using bimaterial microcantilever arrays., 2006,,.		8
101	Evaluation of Porous Silicon Oxide on Silicon Microcantilevers for Sensitive Detection of Gaseous HF. Analytical Chemistry, 2017, 89, 6272-6276.	3.2	8
102	In Quest of a Ferromagnetic Insulator: Structure-Controlled Magnetism in Mg–Ti–O Thin Films. Journal of Physical Chemistry C, 2019, 123, 19970-19978.	1.5	8
103	Optically read Coriolis vibratory gyroscope based on a silicon tuning fork. Microsystems and Nanoengineering, 2019, 5, 47.	3.4	8
104	Characterization of hydrogen responsive nanoporous palladium films synthesized via a spontaneous galvanic displacement reaction. Nanotechnology, 2012, 23, 465403.	1.3	7
105	Manipulating the inter pillar gap in pillar array ultra-thin layer planar chromatography platforms. Analyst, The, 2016, 141, 1239-1245.	1.7	7
106	Realization of deep 3D metal electrodes in diamond radiation detectors. Applied Physics Letters, 2018, 112, 222101.	1.5	7
107	Noncontact tip-enhanced Raman spectroscopy for nanomaterials and biomedical applications. Nanoscale Advances, 2019, 1, 3392-3399.	2.2	7
108	Roomâ€Temperature Insulating Ferromagnetic (Ni,Co) 1+2 x Ti 1â^' x O 3 Thin Films. Annalen Der Physik, 2019, 531, 1900299.	0.9	7

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109	Performance of uncooled microcantilever thermal detectors., 2005,,.		6
110	Electromagnetic Micropores: Fabrication and Operation. Langmuir, 2010, 26, 19239-19244.	1.6	6
111	Nanopillar Based Enhanced-Fluorescence Detection of Surface-Immobilized Beryllium. Analytical Chemistry, 2015, 87, 6814-6821.	3.2	6
112	Surface Modification of Silicon Pillar Arrays To Enhance Fluorescence Detection of Uranium and DNA. ACS Omega, 2017, 2, 7313-7319.	1.6	6
113	Ultraâ€thin layer chromatography with integrated silver colloidâ€based SERS detection. Electrophoresis, 2017, 38, 361-367.	1.3	6
114	Carbonization of 3D printed polymer structures for CMOS-compatible electrochemical sensors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, 052203.	0.6	6
115	Formation and Optical Absorption of Clusters of the p-tert-butylcalix[8]arene:C60 Complex. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 1999, 35, 85-91.	1.6	5
116	Suppression of conductivity in polyaniline films in presence of pentadecyl-tetracyanoquinodimethane. Synthetic Metals, 1999, 98, 173-175.	2.1	5
117	<title>Sensing and actuating functionality of hybrid MEMS combining enhanced chemi-mechanical transduction with surface-enhanced Raman spectroscopy</title> .,2001,,.		5
118	Grafting density effects, optoelectrical properties and nano-patterning of poly(para-phenylene) brushes. Journal of Materials Chemistry A, 2013, 1, 13426.	5.2	5
119	Infrared microcalorimetric spectroscopy using quantum cascade lasers. Optics Letters, 2013, 38, 507.	1.7	5
120	Magnified Neutron Radiography with Coded Sources. Physics Procedia, 2015, 69, 218-226.	1.2	5
121	Extrapolating Dynamic Leidenfrost Principles to Metallic Nanodroplets on Asymmetrically Textured Surfaces. Scientific Reports, 2015, 5, 11769.	1.6	5
122	Performance Characteristics of Bio-Inspired Metal Nanostructures as Surface-Enhanced Raman Scattered (SERS) Substrates. Applied Spectroscopy, 2016, 70, 1432-1445.	1.2	5
123	Step-free GaN surfaces grown by confined-area metal-organic vapor phase epitaxy. APL Materials, 2017, 5, .	2.2	5
124	Cryo-quenched Fe-Ni-Cr alloy single crystals: A new decorative steel. Journal of Alloys and Compounds, 2017, 691, 666-671.	2.8	4
125	Carbon nanospikes for biosensing applications. , 2017, 2017, 193-196.		4
126	Chemical and Biological Sensors Based on Microcantilevers. , 2004, , 331-379.		4

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127	A new approach for probing matter in periodic nanoconfinements using neutron scattering. Journal of Applied Crystallography, 2014, 47, 1367-1373.	1.9	4
128	Microcantilever sensors with chemically selective coatings of ionic liquids. AICHE Journal, 2007, 53, 2726-2731.	1.8	3
129	Progress with MEMS based UGS (IR/THz). Proceedings of SPIE, 2008, , .	0.8	3
130	Bilayer self-assembly on a hydrophilic, deterministically nanopatterned surface. Nano Research, 2013, 6, 784-794.	5.8	3
131	Magnified neutron radiography with coded sources. Proceedings of SPIE, 2014, , .	0.8	3
132	Carbonized Electrodes for Electrochemical Sensing., 2019,,.		3
133	Micromechanical Sensors. Nanostructure Science and Technology, 2004, , 417-439.	0.1	2
134	Grating-based holographic diffraction methods for X-rays and neutrons: phase object approximation and dynamical theory. Journal of Applied Crystallography, 2018, 51, 68-75.	1.9	2
135	Centrifugalâ€driven, reducedâ€dimension, planar chromatography. Electrophoresis, 2018, 39, 438-444.	1.3	2
136	Surface-Enhanced Raman Scattering (SERS) Studies of Disc-on-Pillar (DOP) Arrays: Contrasting Enhancement Factor with Analytical Performance. Applied Spectroscopy, 2019, 73, 665-677.	1.2	2
137	Uncooled Infrared MEMS Detectors. , 2004, , 381-419.		2
138	<title>Factors affecting nonspecific interaction of BSA with solid surfaces: an SPR study</title> ., 1998, 3199, 197.		1
139	Chemical Sensors Based on Funstionalized Microcantilever Arrays. , 2006, , .		1
140	Using micro-electro-mechanical systems (MEMS) as small antennas. , 2012, , .		1
141	Surface-Enhanced Raman Scattering. Journal of Nanotechnology, 2012, 2012, 1-2.	1.5	1
142	Nonlinear mechanical resonators for ultra-sensitive mass detection. Proceedings of SPIE, 2014, , .	0.8	1
143	Synthetic moth antennae fabricated as preconcentrator for odor collection., 2017,,.		1
144	Carbonized Polymer Nanostructures for Biosensing. , 2019, , .		1

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145	Carbonized Polymer for Joule Heating Processing Towards Biosensor Development., 2021, 2021, 7578-7581.		1
146	Nanomechanics weighs in. Physics World, 2004, 17, 19-20.	0.0	0
147	Mechanical structures feel the chill. Physics World, 2005, 18, 25-26.	0.0	0
148	Nanofabrication of Disc on Pillar Substrates for Surface Enhanced Raman Spectroscopy. , 2010, , .		0
149	Detection of electromagnetic waves using MEMS antennas. , 2011, , .		0
150	Detection of electromagnetic waves using charged cantilevers. Applied Physics Letters, 2012, 100, 103108.	1.5	0
151	Permanently Magnetized Insulating Thinâ€Film Devices by Reduction. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000346.	1.2	0
152	Hybrid Nanostructured Microcantilevers for Enhanced Chemimechanical Transduction and Surface Enhanced Raman Spectrocopy., 2001,, 450-452.		0
153	Sensor Science for National Security. NATO Science for Peace and Security Series C: Environmental Security, 2009, , 461-478.	0.1	0
154	Modeling, Fabrication, and Characterization of Disc on Pillar Structures for Optical Field Enhancement and Extreme Nanofocusing. , $2013, \ldots$		0
155	Probing the Nanoscale Heterogeneity of SEI on Silicon Anode Using Tip Enhanced Raman Spectroscopy (TERS). ECS Meeting Abstracts, 2018, , .	0.0	O