

# Associa€prof Elena E Ferapontova

## List of Publications by Year in descending order

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108  
papers

4,245  
citations

109264

35  
h-index

123376

61  
g-index

110  
all docs

110  
docs citations

110  
times ranked

4373  
citing authors

#	ARTICLE	IF	CITATIONS
1	An RNA Aptamer-Based Electrochemical Biosensor for Detection of Theophylline in Serum. <i>Journal of the American Chemical Society</i> , 2008, 130, 4256-4258.	6.6	330
2	RNA Aptamer-Based Electrochemical Biosensor for Selective and Label-Free Analysis of Dopamine. <i>Analytical Chemistry</i> , 2013, 85, 121-128.	3.2	184
3	Visible Light Driven Photoelectrochemical Water Oxidation by Zn- and Ti-Doped Hematite Nanostructures. <i>ACS Catalysis</i> , 2014, 4, 2006-2015.	5.5	173
4	Mediatorless biosensor for H <sub>2</sub> O <sub>2</sub> based on recombinant forms of horseradish peroxidase directly adsorbed on polycrystalline gold. <i>Biosensors and Bioelectronics</i> , 2001, 16, 147-157.	5.3	164
5	Electrochemical Hairpin-DNA-Based Genosensor for Cancer Diagnostics. <i>Analytical Chemistry</i> , 2011, 83, 1594-1602.	3.2	160
6	DNA Electrochemistry and Electrochemical Sensors for Nucleic Acids. <i>Annual Review of Analytical Chemistry</i> , 2018, 11, 197-218.	2.8	135
7	Direct Electron Transfer of Heme- and Molybdopterin Cofactor-Containing Chicken Liver Sulfite Oxidase on Alkanethiol-Modified Gold Electrodes. <i>Analytical Chemistry</i> , 2003, 75, 4841-4850.	3.2	121
8	DNA interactions with a Methylene Blue redox indicator depend on the DNA length and are sequence specific. <i>Analyst</i> , 2010, 135, 1443.	1.7	112
9	Unmediated by DNA Electron Transfer in Redox-Labeled DNA Duplexes End-Tethered to Gold Electrodes. <i>Journal of the American Chemical Society</i> , 2012, 134, 14499-14507.	6.6	99
10	Electrochemical Label-Free Aptasensor for Specific Analysis of Dopamine in Serum in the Presence of Structurally Related Neurotransmitters. <i>Analytical Chemistry</i> , 2016, 88, 3608-3616.	3.2	89
11	Electrical wiring of viable <i>Gluconobacter oxydans</i> cells with a flexible osmium-redox polyelectrolyte. <i>Electrochemistry Communications</i> , 2004, 6, 621-626.	2.3	88
12	Electrochemical Analysis of Dopamine: Perspectives of Specific In Vivo Detection. <i>Electrochimica Acta</i> , 2017, 245, 664-671.	2.6	85
13	Electrochemical Switching with 3D DNA Tetrahedral Nanostructures Self-Assembled at Gold Electrodes. <i>ACS Applied Materials &amp; Interfaces</i> , 2014, 6, 8928-8931.	4.0	77
14	Effect of cysteine mutations on direct electron transfer of horseradish peroxidase on gold. <i>Biosensors and Bioelectronics</i> , 2002, 17, 953-963.	5.3	75
15	Electrochemistry of guanine and 8-oxoguanine at gold electrodes. <i>Electrochimica Acta</i> , 2004, 49, 1751-1759.	2.6	71
16	Effect of Serum on an RNA Aptamer-Based Electrochemical Sensor for Theophylline. <i>Langmuir</i> , 2009, 25, 4279-4283.	1.6	71
17	Direct Electron Transfer Kinetics in Horseradish Peroxidase Electrocatalysis. <i>Journal of Physical Chemistry B</i> , 2007, 111, 469-477.	1.2	69
18	Electrochemical Indicators for DNA Electroanalysis. <i>Current Analytical Chemistry</i> , 2011, 7, 51-62.	0.6	67

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19	Effect of the DNA End of Tethering to Electrodes on Electron Transfer in Methylene Blue-Labeled DNA Duplexes. <i>Langmuir</i> , 2012, 28, 16218-16226.	1.6	60
20	Direct Detection of DNA Conformation in Hybridization Processes. <i>Analytical Chemistry</i> , 2012, 84, 1854-1861.	3.2	58
21	Direct electron transfer in the system gold electrode/recombinant horseradish peroxidases. <i>Journal of Electroanalytical Chemistry</i> , 2001, 509, 19-26.	1.9	56
22	Direct electrochemistry of heme multifactor-containing enzymes on alkanethiol-modified gold electrodes. <i>Bioelectrochemistry</i> , 2005, 66, 55-63.	2.4	55
23	Hybridization Biosensors Relying on Electrical Properties of Nucleic Acids. <i>Electroanalysis</i> , 2017, 29, 6-13.	1.5	51
24	Direct Electrochemistry of Proteins and Enzymes. <i>Perspectives in Bioanalysis</i> , 2005, , 517-598.	0.3	50
25	Bioelectrocatalytic detection of theophylline at theophylline oxidase electrodes. <i>Biosensors and Bioelectronics</i> , 2007, 22, 2508-2515.	5.3	49
26	Effect of proton donors on direct electron transfer in the system gold electrode/horseradish peroxidase. <i>Electrochemistry Communications</i> , 2001, 3, 767-774.	2.3	42
27	DNA-Mediated Electron Transfer in DNA Duplexes Tethered to Gold Electrodes via Phosphorothioated dA Tags. <i>Langmuir</i> , 2014, 30, 11853-11857.	1.6	42
28	Direct electrochemical and AFM detection of amyloid- $\beta^2$ peptide aggregation on basal plane HOPG. <i>Nanoscale</i> , 2014, 6, 7853-7857.	2.8	41
29	Synthesis and Application of a Triazene-Ferrocene Modifier for Immobilization and Characterization of Oligonucleotides at Electrodes. <i>Journal of Organic Chemistry</i> , 2010, 75, 2474-2481.	1.7	39
30	Electrochemistry of weakly adsorbed species: Voltammetric analysis of electron transfer between gold electrodes and Ru hexaamine electrostatically interacting with DNA duplexes. <i>Electrochimica Acta</i> , 2014, 126, 151-157.	2.6	39
31	Surface state of the dopamine RNA aptamer affects specific recognition and binding of dopamine by the aptamer-modified electrodes. <i>Analyst</i> , 2015, 140, 4089-4096.	1.7	39
32	Dopamine Binding and Analysis in Undiluted Human Serum and Blood by the RNA-Aptamer Electrode. <i>ACS Chemical Neuroscience</i> , 2019, 10, 1706-1715.	1.7	38
33	Basic concepts and recent advances in electrochemical analysis of nucleic acids. <i>Current Opinion in Electrochemistry</i> , 2017, 5, 218-225.	2.5	37
34	Long-range electron transfer in recombinant peroxidases anisotropically orientated on gold electrodes. <i>Physical Chemistry Chemical Physics</i> , 2010, 12, 10098.	1.3	36
35	Specific Picomolar Detection of a Breast Cancer Biomarker HER2/neu Protein in Serum: Electrocatalytically Amplified Electroanalysis by the Aptamer/PEG-Modified Electrode. <i>ChemElectroChem</i> , 2017, 4, 872-879.	1.7	36
36	Design Strategies for Electrochemical Aptasensors for Cancer Diagnostic Devices. <i>Sensors</i> , 2021, 21, 736.	2.1	36

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37	Synthesis and electrochemical studies of an anthraquinone-conjugated nucleoside and derived oligonucleotides. <i>Organic and Biomolecular Chemistry</i> , 2009, 7, 905.	1.5	35
38	Electrochemical DNA sandwich assay with a lipase label for attomole detection of DNA. <i>Chemical Communications</i> , 2010, 46, 1836-1838.	2.2	35
39	Electroanalysis of pM-levels of urokinase plasminogen activator in serum by phosphorothioated RNA aptamer. <i>Analyst</i> , 2015, 140, 3794-3802.	1.7	35
40	Activation of laccase bioelectrocatalysis of O <sub>2</sub> reduction to H <sub>2</sub> O by carbon nanoparticles. <i>Journal of Electroanalytical Chemistry</i> , 2012, 667, 11-18.	1.9	34
41	Effect of cation adsorption on the kinetics of anion electroreduction. <i>Journal of Electroanalytical Chemistry</i> , 1999, 476, 26-36.	1.9	33
42	Recent Advances in Electrochemical Aptamer-Based Sensors. <i>Current Organic Chemistry</i> , 2011, 15, 498-505.	0.9	33
43	A 1.76V hybrid Zn-O <sub>2</sub> biofuel cell with a fungal laccase-carbon cloth biocathode. <i>Electrochimica Acta</i> , 2012, 62, 218-226.	2.6	33
44	Electroanalysis of single-nucleotide polymorphism by hairpin DNA architectures. <i>Analytical and Bioanalytical Chemistry</i> , 2013, 405, 3693-3703.	1.9	32
45	Effect of a Dual Charge on the DNA-Conjugated Redox Probe on DNA Sensing by Short Hairpin Beacons Tethered to Gold Electrodes. <i>Analytical Chemistry</i> , 2016, 88, 7984-7990.	3.2	32
46	Electrochemical sandwich assay for attomole analysis of DNA and RNA from beer spoilage bacteria <i>Lactobacillus brevis</i> . <i>Biosensors and Bioelectronics</i> , 2012, 37, 99-106.	5.3	31
47	A DNA sequence obtained by replacement of the dopamine RNA aptamer bases is not an aptamer. <i>Biochemical and Biophysical Research Communications</i> , 2017, 489, 381-385.	1.0	31
48	Femtomolar electroanalysis of a breast cancer biomarker HER-2/neu protein in human serum by the cellulase-linked sandwich assay on magnetic beads. <i>Analytica Chimica Acta</i> , 2019, 1077, 140-149.	2.6	31
49	Direct electrochemistry and Os-polymer-mediated bioelectrocatalysis of NADH oxidation by <i>Escherichia coli</i> flavohemoglobin at graphite electrodes. <i>Biosensors and Bioelectronics</i> , 2013, 42, 219-224.	5.3	30
50	Peroxidase biocathodes for a biofuel cell development. <i>Journal of Renewable and Sustainable Energy</i> , 2010, 2, .	0.8	29
51	Electrochemical analysis of the fibrillation of Parkinson's disease $\alpha$ -synuclein. <i>Analyst</i> , 2014, 139, 749-756.	1.7	29
52	Direct electrochemistry of recombinant tobacco peroxidase on gold. <i>Electrochemistry Communications</i> , 2005, 7, 1291-1297.	2.3	28
53	Direct Bioelectrocatalysis of O <sub>2</sub> Reduction by <i>Streptomyces coelicolor</i> Laccase Orientated at Promoter-Modified Graphite Electrodes. <i>ChemPhysChem</i> , 2013, 14, 2112-2124.	1.0	27
54	Submolecular Structure and Orientation of Oligonucleotide Duplexes Tethered to Gold Electrodes Probed by Infrared Reflection Absorption Spectroscopy: Effect of the Electrode Potentials. <i>Journal of Physical Chemistry B</i> , 2017, 121, 1552-1565.	1.2	27

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55	Bioelectrocatalytic properties of lignin peroxidase from <i>Phanerochaete chrysosporium</i> in reactions with phenols, catechols and lignin-model compounds. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2006, 1760, 1343-1354.	1.1	25
56	Reconstitution of peroxidase onto hemin-terminated alkanethiol self-assembled monolayers on gold. <i>Journal of Electroanalytical Chemistry</i> , 2014, 728, 18-25.	1.9	23
57	Electron Transfer in Spacer-Free DNA Duplexes Tethered to Gold via dA <sub>10</sub> Tags. <i>Langmuir</i> , 2018, 34, 8472-8479.	1.6	23
58	Directional Preference of DNA-Mediated Electron Transfer in Gold-Tethered DNA Duplexes: Is DNA a Molecular Rectifier?. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 3048-3052.	7.2	23
59	Femtomolar Detection of Thrombin in Serum and Cerebrospinal Fluid via Direct Electrocatalysis of Oxygen Reduction by the Covalent G4-Hemin-Aptamer Complex. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 37979-37988.	4.0	23
60	Quantifying Protein Adsorption and Function at Nanostructured Materials: Enzymatic Activity of Glucose Oxidase at GLAD Structured Electrodes. <i>Langmuir</i> , 2012, 28, 11106-11114.	1.6	21
61	Chronopotentiometric sensing of specific interactions between lysozyme and the DNA aptamer. <i>Bioelectrochemistry</i> , 2017, 114, 42-47.	2.4	21
62	Sequence-Specific Electron Transfer Mediated by DNA Duplexes Attached to Gold through the Alkanethiol Linker. <i>Journal of Physical Chemistry B</i> , 2018, 122, 10077-10085.	1.2	21
63	Electrochemical deposition of Zn on TiN microelectrode arrays for microanodes. <i>Electrochemistry Communications</i> , 2007, 9, 303-309.	2.3	20
64	Recombinant horseradish peroxidase - and cytochrome c-based two-electrode system for detection of superoxide radicals. <i>Bioelectrochemistry</i> , 2004, 63, 277-280.	2.4	19
65	Biocatalysis of theophylline oxidation by microbial theophylline oxidase in the presence of non-physiological electron acceptors. <i>Biocatalysis and Biotransformation</i> , 2008, 26, 455-465.	1.1	19
66	Electrochemical assays for microbial analysis: how far they are from solving microbiota and microbiome challenges. <i>Current Opinion in Electrochemistry</i> , 2020, 19, 153-161.	2.5	19
67	Cellulase-Linked Immunomagnetic Microbial Assay on Electrodes: Specific and Sensitive Detection of a Single Bacterial Cell. <i>Analytical Chemistry</i> , 2020, 92, 12451-12459.	3.2	19
68	Electrochemical Assay for a Total Cellulase Activity with Improved Sensitivity. <i>Analytical Chemistry</i> , 2017, 89, 3959-3965.	3.2	18
69	Spectroelectrochemical study of heme- and molybdopterin cofactor-containing chicken liver sulphite oxidase. <i>Bioelectrochemistry</i> , 2004, 63, 49-53.	2.4	17
70	Enhanced electron transfer between gold nanoparticles and horseradish peroxidase reconstituted onto alkanethiol-modified hemin. <i>Electrochemistry Communications</i> , 2016, 70, 39-42.	2.3	17
71	Spraying Enzymes in Microemulsions of AOT in Nonpolar Organic Solvents for Fabrication of Enzyme Electrodes. <i>Analytical Chemistry</i> , 2005, 77, 7074-7079.	3.2	16
72	Electron transfer reactions, cyanide and O <sub>2</sub> binding of truncated hemoglobin from <i>Bacillus subtilis</i> . <i>Electrochimica Acta</i> , 2013, 110, 86-93.	2.6	16

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73	Electronically addressable nanomechanical switching of i-motif DNA origami assembled on basal plane HOPG. <i>Chemical Communications</i> , 2015, 51, 14111-14114.	2.2	15
74	Electrocatalysis of ferricyanide reduction mediated by electron transfer through the DNA duplex: Kinetic analysis by thin layer voltammetry. <i>Electrochimica Acta</i> , 2019, 318, 703-710.	2.6	15
75	Electrochemical control of a DNA Holliday Junction nanoswitch by Mg <sup>2+</sup> ions. <i>Biosensors and Bioelectronics</i> , 2008, 24, 422-428.	5.3	14
76	Electrocatalytic interconversion of NADH and NAD <sup>+</sup> by <i>Escherichia coli</i> flavohemoglobin. <i>Chemical Communications</i> , 2015, 51, 16096-16098.	2.2	13
77	Wiring of Glucose Oxidizing Flavin Adenine Dinucleotide-Dependent Enzymes by Methylene Blue-Modified Third Generation Poly(amidoamine) Dendrimers Attached to Spectroscopic Graphite Electrodes. <i>Electrochimica Acta</i> , 2016, 197, 263-272.	2.6	13
78	Electron Transfer in DNA at Electrified Interfaces. <i>Chemistry - an Asian Journal</i> , 2019, 14, 3773-3781.	1.7	13
79	Electrochemical Immuno- and Aptamer-Based Assays for Bacteria: Pros and Cons over Traditional Detection Schemes. <i>Sensors</i> , 2020, 20, 5561.	2.1	13
80	Direct electrochemistry and environmental sensing of rice hemoglobin immobilized at graphite electrodes. <i>Journal of Electroanalytical Chemistry</i> , 2013, 704, 67-74.	1.9	12
81	Electrocatalytic Discrimination between Dopamine and Norepinephrine at Graphite and Basal Plane HOPG Electrodes. <i>Electroanalysis</i> , 2018, 30, 1082-1090.	1.5	12
82	Electrochemical Enzyme-Linked Sandwich Assay with a Cellulase Label for Ultrasensitive Analysis of Synthetic DNA and Cell-Isolated RNA. <i>ACS Sensors</i> , 2018, 3, 2104-2111.	4.0	12
83	Surface Heterogeneities Matter in Fast Scan Cyclic Voltammetry Investigations of Catecholamines in Brain with Carbon Microelectrodes of High-Aspect Ratio: Dopamine Oxidation at Conical Carbon Microelectrodes. <i>Journal of the Electrochemical Society</i> , 2018, 165, G3057-G3065.	1.3	12
84	<i>Bacillus Licheniformis</i> CotA Laccase Mutant: Electrocatalytic Reduction of O <sub>2</sub> from 0.6 V (SHE) at pH 8 and in Seawater. <i>ChemElectroChem</i> , 2019, 6, 2043-2049.	1.7	12
85	Molecular Recognition with DNA Nanoswitches: Effects of Single Base Mutations on Structure. <i>Journal of Physical Chemistry B</i> , 2008, 112, 2439-2444.	1.2	11
86	Gated electron transfer reactions of truncated hemoglobin from <i>Bacillus subtilis</i> differently orientated on SAM-modified electrodes. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 15365-15374.	1.3	11
87	Negative electrocatalysis-based specific analysis of dopamine at basal plane HOPG in the presence of structurally related catecholamines. <i>Electrochemistry Communications</i> , 2018, 89, 48-51.	2.3	11
88	Picomolar sensitive and SNP-selective Off-On hairpin genosensor based on structure-tunable redox indicator signals. <i>Biosensors and Bioelectronics</i> , 2018, 117, 444-449.	5.3	11
89	Effect of cation adsorption on the kinetics of anion electroreduction. <i>Journal of Electroanalytical Chemistry</i> , 1999, 476, 37-45.	1.9	10
90	P-chip and P-chip bienzyme electrodes based on recombinant forms of horseradish peroxidase immobilized on gold electrodes. <i>Biochemistry (Moscow)</i> , 2001, 66, 832-839.	0.7	10

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91	Self-Assembly of Artificial Nucleobase 1 <i>H</i> -Benzimidazole-4,7-dione at the Liquid/Solid Interface. <i>Journal of Physical Chemistry B</i> , 2009, 113, 8675-8681.	1.2	10
92	Electrochemistry and electrocatalysis of covalent hemin-G4 complexes on gold. <i>Journal of Electroanalytical Chemistry</i> , 2018, 812, 174-179.	1.9	10
93	Seawater operating bio-photovoltaic cells coupling semiconductor photoanodes and enzymatic biocathodes. <i>Sustainable Energy and Fuels</i> , 2017, 1, 842-850.	2.5	9
94	Electrochemically induced oxidative damage to double-stranded calf thymus DNA adsorbed on gold electrodes. <i>Biochemistry (Moscow)</i> , 2003, 68, 99-104.	0.7	8
95	Electrocatalysis of Water Oxidation by H <sub>2</sub> O <sub>2</sub> -Capped Iridium Oxide Nanoparticles Electrodeposited on Spectroscopic Graphite. <i>ChemPhysChem</i> , 2014, 15, 2844-2850.	1.0	8
96	Ultrasensitive disposable aptasensor for reagentless electrocatalytic detection of thrombin: An O <sub>2</sub> -Dependent hemin-G4-aptamer assay on gold screen-printed electrodes. <i>Talanta</i> , 2022, 245, 123456.	2.9	8
97	Development of a lipase-based optical assay for detection of DNA. <i>Organic and Biomolecular Chemistry</i> , 2011, 9, 6352.	1.5	7
98	Implications of FAD Electrode Reaction Kinetics for Electrocatalysis of NADH Oxidation and Development of NAD-Dependent Enzyme Electrodes. <i>Electroanalysis</i> , 2014, 26, 1354-1361.	1.5	7
99	Electrochemical analysis of peptide adsorption and aggregation on spectroscopic graphite. <i>Monatshfte für Chemie</i> , 2015, 146, 781-786.	0.9	7
100	Wiring of heme enzymes by methylene-blue labeled dendrimers. <i>Electrochimica Acta</i> , 2017, 249, 206-215.	2.6	7
101	Bioelectrocatalytic oxidation of glucose by hexose oxidase directly wired to graphite. <i>Electrochemistry Communications</i> , 2016, 65, 1-4.	2.3	6
102	Electrochemical Characterization and Bioelectrocatalytic H <sub>2</sub> O <sub>2</sub> Sensing of Non-Symbiotic Hexacoordinated Sugar Beet Hemoglobins. <i>ChemElectroChem</i> , 2020, 7, 2114-2122.	1.7	6
103	Electron Transfer in Methylene-Blue Labeled G3 Dendrimers Tethered to Gold. <i>ChemElectroChem</i> , 2016, 3, 2270-2280.	1.7	5
104	Covalent Hemin/G4 complex-linked sandwich bioassay on magnetic beads for femtomolar HER-2/neu detection in human serum via direct electrocatalytic reduction of oxygen. <i>Analytica Chimica Acta</i> , 2022, 1219, 340049.	2.6	4
105	Activation of Cellobiose Dehydrogenase Bioelectrocatalysis by Carbon Nanoparticles. <i>ChemElectroChem</i> , 2019, 6, 5032-5040.	1.7	2
106	Directional Preference of DNA-Mediated Electron Transfer in Gold-Tethered DNA Duplexes: Is DNA a Molecular Rectifier?. <i>Angewandte Chemie</i> , 2019, 131, 3080-3084.	1.6	2
107	Bioelectrochemical analysis of neurodegeneration: Refocusing efforts. <i>Current Opinion in Electrochemistry</i> , 2022, 32, 100924.	2.5	2
108	Electrocatalytic Oxidation of Water by OH <sup>•</sup> and H <sub>2</sub> O <sub>2</sub> -Capped IrO <sub>x</sub> Nanoparticles Electrophoretically Deposited on Graphite and Basal Plane HOPG: Effect of the Substrate Electrode**. <i>ChemElectroChem</i> , 2021, 8, 1632-1641.	1.7	1