Mihaela Gheorghiu

International Centre of Biodynamics, 1B, Intrarea Portocalelor, 060101 Bucharest, Romania

08.11.1970
Married (previous name Mehedintu),

Education

2018	University of Bucharest, Faculty of Biology	Biology	Habilitation
1998-2003	University of Bucharest, Faculty of Biology	Biology	PhD in Biology
1994-1995	University of Bucharest, Faculty of Physics	Biophysics	MSc Biophysics
1989-1994	University of Bucharest, Faculty of Physics	Physics/Biotechnology	Physicist Eng.

Professional Experience

2019-present – Doctoral School Biology, University of Bucharest

2010-present – Coordinator of the Analysis Department within ICB comprising SPR analyses, Optical analyses (fluorescence microscopy), and between 2010-2014 of the Water analysis laboratory Accredited.

2001-present Scientific Researcher International Centre of Biodynamics, Bucharest, Romania *(since 2004* Senior Researcher 1st degree*)*

Sept 2005 – Visiting Scientist National University of Singapore, Singapore

2002-2003 – PostDoctoral Researcher, Catholic University of Leuven, Belgium, Physiology

1997 – 2000 Biophysicist (since 1998 Senior Researcher*)* R&D National Institute of Biotechnology (NIBT) – UNESCO Centre for Biodynamics, Bucharest

July 1996–Nov 1996 Research Associate, Institute for Molecular Biotechnology, Jena, Germany

1994-1997 Biophysicist, R&D National Institute of Biotechnology, Bucharest, Romania

Research Interests: Surface Plasmon Resonance (with applications in monitoring bio-affinity reactions); TIRFM (visualization of processes at cellular and subcellular levels, and fluorescence quantitative evaluation of model-systems e.g., model cells, liposomes and fluorescent nanobeads); Combination of SPR, TIRFM and impedance by development of surfaces with controlled design and study of their interactions with biological cells for detection and imaging; Analysis of cell adhesion to functionalized substrates; Set-up development for SPR and impedance assessment of cellular platforms.

Synergistic Activities

■ Expert Evaluator Horizon 2020: FETProact Biotechnology 2016; People, Chemistry, Life Sciences panel 2020, 2019, 2018, 2017, 2016, 2015, 2014

■ Expert Evaluator FP7 People, Chemistry panel 2013, Life sciences panel 2009

■ Member of the Organizing team of International Conferences and Workshops: IInd EURYIAS 2008 International symposium on Self-Organization and Selection in Evolution of Matter, Molecules and Life Bucharest, 2008- Biodynamics: ways and means to appraise the impact of gentle stimuli on selected biological/cellular system; International Conference Biosensing and Biodynamics: From Basics to Applications 18-21 May 2006 ICBB 2006- "Biodynsensing, Sensing through dynamics of (bio)interfaces & cellular platforms;

■ Member of the Program Committee ESOF2008 (Barcelona)

■ Chair of 1E Stream 31th World Congress on Biosensors, 26-29 July 2021 Online and On-demand

■ Reviewer for Biosensors & Bioelectronics, Plasmonics, Sensors, Archives of Medical Research, Talanta, Lab Chip, J Mat Chem B, Plasmonics, Chem Comm, Anal Chim Acta, Materials

■ Guest editor special issue Materials (2020)

■ Review Editor Frontiers in Bioengineering and Biotechnology – Nanobiotechnology (2021)

■ **Teaching Accomplishments:**

- Course "Actual Methods for assessment of biosurfaces" (2007-2008) within the Master of Biodynamics from the Faculty of Biology, University of Bucharest
- Course (2019, 2020 – Biodinamica pentru Aplicatii Biomedicale) within Master "Tehnologii moderne pentru Ingineria Medicală" Polytechnic University, Bucharest.
- Supervisor of R. Munteanu PhD student within ICB (2020)
- Technical supervision of 5 PhD students within ICB: S. David, C. Polonschii, A. Olaru, M. Axinie, L.Stanica and 2 Master students Loredana Antonescu, Calin Mircea Rusu

■ **Collaborations**: Prof. Thorsten Wohland, (NUS, Singapore) Prof. Dr. Patrik Wagner (Limburgs Universitair Centrum, Belgium); Prof. Dr. Paul Steels (Faculty of Medicine, Limburgs Universitair Centrum, Belgium); Prof. J.-L. Marty (University of Perpignan, France); Prof. Dr. Charles Ghommidh, (Montpellier University, France); Dr. Eberhard Gersing (Georg August University, Germany), Assist Prof. Silvana Andreescu (Clarkson University, USA)

Fellowships:

2005 *Eastern Europe Research Scientists* & *Students Exchange* & *Collaboration Programme* National University Singapore

2002, 2003 Postdoctoral stages Dept. of cell physiology, Catholic University Leuven, Belgium

1996 Boehringer Ingelheim, Research stage at Institute for Molecular Biotechnology, Jena, Germany

Prizes and Awards:

•2007 –Turner Luminometer 20/20n Grant.

•Nov 2004 – Silver medal "Method to pinpoint the presence of some analytes in liquid solutions" World Exhibition of Innovation, Research and Technology, EUREKA, Bruxelles;

•June 2003 – Second Prize for postdoc presentation EURESCO (European Research Conference "Biological Surfaces and Interfaces" - Castelvecchio Pascoli, Italy).

•Oct 2000 - Second prize for poster presentation from Single Cell Research Foundation (EMBO Lecture Course Molecular and Cellular Biology from Plant to Human Cells September-October 2000-, Debrecen, Hungary).

Granted patent(s)

[**1**] RO patent no. 117877/30.09.2004: "Method for detecting target analytes in liquid media"; [**2**] RO patent no. 117986/30.09.2004: "Fast, high accurate method to measure impedances in ac sinusoidal current"; [**3**] RO patent no. 120867/30.08.2007: "Quantitative assessment of (bio)sensors by analysis of nonlinear frequency response"; [**4**] RO patent no. 120790/30.08.2007: „Method for determining analytes by analyzing the polarization impedance of the transducer/ sample interface".

Patent applications

1. US Patent Application BDN1901/2019, Systems and Methods for measuring cellular response to target analytes by controlled application of an oscillating stimulus, Authors: E. Gheorghiu, M. S.David, M. Gheorghiu
2. US Patent Application BDN1902/2019, Systems and methods for detecting bioactive compunds using sensors with pre-stimulated cells, Authors: M. Gheorghiu, E. Gheorghiu
3. Ro Patent Application Ro A/00224/2019, Method to measure the phase difference and the intensity introduced by the sample on beams with controlled polarization in a common-path geometry, Authors: E. Gheorghiu, M. S. David, M. Gheorghiu, C. Polonschii
4. Ro Patent Application A/00420/2018, Method and system for detection of bioactive compounds e.g. cytotoxic, using sensors with stimulated cells, Authors: M. Gheorghiu, E. Gheorghiu
5. Ro Patent Application A/00421/2018, Method for detection and quantitation of target analytes as well as for monitoring and increasing the yield of analyte capturing using a periodic stimulus, Authors: E. Gheorghiu, M. S. David, M. Gheorghiu
6. Ro Patent Application A/00422/2018, Method for assessing the viability of biological cells and for testing their susceptibility when exposed to a compound (e.g. antibiotic), Authors: E. Gheorghiu, M. S. David, M. Gheorghiu
7. Ro Patent Application A/00423/2018, Method and system for high precision measurement of the periodic variations of the electrical impedance of a sample, Authors: E. Gheorghiu, M. S. David, D. Bratu, M. Gheorghiu, C. Polonschii
8. Ro Patent Application A0031/2018: Portable device to measure optical waveguides including their resonances, Authors: E. Gheorghiu, M. S. David, M. Gheorghiu, C. Polonschii
9. Ro Patent Application A00651/2017: Method for measuring the distributions of electric fields and of refractive indices with high spatial and temporal resolution, Authors: E. Gheorghiu, M. S. David, C. Polonschii, M. Gheorghiu
10. Ro Patent Application A00502/2016: Method and system for illumination and reception for total internal reflection microscopy applications, Authors: E. Gheorghiu, R. Dabu, D. Ursu, M. Gheorghiu, M. S. David, C. Polonschii, D. Bratu

Publications: 5 book chapters (Springer, ACS, Springer, Elsevier), 36 ISI publications (32 papers: Total IF 116.893 since 2012, 4 abstracts), 7 articles in peer-reviewed journals/books conference proceedings, 15 published in Proceedings of international scientific Conferences, 7 published in proceedings of Romanian scientific events with international participation, 1 book (Romanian), 4 Romanian Patents, 10 patent applications (2 US)

Participation in research projects:

	International Projects (selection from 2008)	Position:
8	Graphtivity-Graphene based optoelectrochemical sensor for the simultaneous monitoring of the electrical and chemical activity of single cells ERA-NET (01.01.2016 - 31.12.2018)	Investigator TIRFM, SPR approaches for Biosensing
7	Cell biosensors for detection of chemical and biological threats Contract: NATO SPS 985042 (12.04.2016-12.04.2019)	Principal Investigator TIRFM, SPR Impedance approaches for Biosensing
6	FP7 EC “DYNANO” "Dynamic interactive nanosystems" Project	Team Leader

	Coordinator: Dr. Mihai BARBOIU, European Membrane Institute -IEM, Montpellier, France. FP7-PEOPLE-2011-ITN - Grant agreement n°: PITN-GA-2011-289033	Advanced modeling and SPR approaches for Biosensing
5	TUMORANALYZER – Contract No. 7/RO-CH/RSRP/01.01.2013, Module III Capacities, Response of in vitro hypoxic tumor models to potentially therapeutic compounds as revealed by an advanced analytical platform	Principal Investigator TIRFM, SPR approaches for Biosensing
4	FP7 Protein Aggregation - a quantitative assessment (PROARGUS) Marie Curie Action: "Reintegration Grants" (FP7-PEOPLE-2009-RG)	Researcher supervisor
3	FP7 EC "NANOMAGMA" NANOstructured active MAGneto-plasmonic MAterials Partnership with Consejo Superior de Investigaciones Cientificas, Spain	Principal Investigator Advanced modeling and SPR approaches for Biosensing
2	FP6 *ROBIOS* - Strengthening Romanian Research Training Capacities in Biosensing Contract- INCO-2004-ACC-RSTP	Team/WP Leader
1	FP6 Charpan CHARPAN Contract - IP 515803	Investigator

	National Projects (selection) from 2008	
12	PN-III-P4-ID-PCE-2020-2432 High resolution multiparametric dynamics at single cell level: virus detection by assessing cellular response to viral exposure -DynaScope	Director
11	PN-III-P2-2.1-PED-2019-5185 Rapid, Quantitative Identification of Microorganisms in a lab-chip assay BactoID	Director
10	PN-III-P2-2.1-PED-2016-1137 Dynamic platform for evaluation of endo-exo genous compounds: case study Amyloid β	Director
9	PN-III-P4-ID-PCE-2016-0762 (Light)Driven Dynamics for cell based sensing: a new twist for optogenetics	Director
8	BioScope - Contract No. 11/2012, ID: PN II-ID-PCCE-2011-2-0075 Electro-Plasmonics for the analysis of the dynamics of cellular processes and biomolecular interactions	Partner coordinator
7	Advanced investigations towards medical applications of nuclear Technologies – PROPETHAD (coordinator Institute of Physics & Nuclear Engineering H. Hulubei)	Researcher - microscopy
6	Development of nucleic acid–based biosensors for environmental assessment of some selected warfare agents (BIOSADN) Partner* (coordinator University of Bucharest)	Researcher Biosensing platform development
5	Controlling the interaction between human and bacterial cells onto nanostructured surfaces: strategies to accomplish "intelligent" biosurfaces (NANOINT)	WP leader Electro-optical and AFM assessment of cellular platforms
4	The diagnostic and prognostic relevance of the endomicroscopic	Responsabil Proiect

	aspect of microvasculature in upper digestive premalign or malign lesions -DIAPROGENDO (project coordinator Fundeni Clinic Institute)	microscopy
3	On the role of membrane dynamics and composition in modulating the treatment resistance of tumor cells	Principal investigator microscopy
2	Modelling the intracellular calcium oscillations induced by the pathogenic bacteria E. Coli in renal cells	Principal investigator microscopy
1	The role of membrane lipids in modulating the response of tumour cells to anti-cancerous treatment" - LIPTUM	Principal investigator microscopy

Participation to international conferences and international advanced schools

Invited talks

[**1**] "Biosensing meets optogenetics: harnessing light driven dynamic processes for cell based bio-sensing" BIOS2018_0748, 28th World Congress on Biosensors, 12-15 June (**2018**), Miami, Florida, USA

[2]. "Electro-Optical flow-through system to appraise cell dynamics", Open Problems in Systems Chemistry January 23- 24, (**2012**), Montpellier, France

[3]. "Advanced electro-optical and SPM approaches in probing and development of cellular platforms for sensing"– International Workshop on Cell Physiology and Biosensors, Hasselt, Belgium, December, 11-12, (**2008**)

[4]. "New avenues, "hot topics" in Biodynsensing", Montpellier (**2006**);

[5]. "On the electrode related problems in bioimpedance measurements", NUS (**2005**)

[6]. "Anti-angiogenesis effect of Somatostatin/analogues: case study – hepatocellular carcinoma" Novartis Young Investigators' Meeting, Barcelona, Spain, Jan. 28-30, (**2005**);

[7]. "Revealing alteration of membrane structures During Ischemia Using Impedance Spectroscopy", Regional Symposium on Membrane Science and Technology, Songkhla, Thailand, (**2003**)

Oral Presentations (selected)

[1]. "High resolution Electro-Optical imaging for cell-based (bio)sensing" 31th World Congress on Biosensors, 26-29 July (**2021**) Online and On-demand

[2]. "Novel bioanalytical perspectives of plasmonic interfaces" Molecular Plasmonics (**2017),** May 18-20, IPHT Jena, Germany

[**3**]. "A New Twist for Optogenetics: Light Driven Dynamics for Cell Based Sensing" IC-ANMBES, (**2016**), 29 June-1 July Brasov, Romania

[**4**]. "Advanced electro-optical analytical platform for dynamic evaluation of cell-surface and cell-cell interactions" at Biosensors Congress (**2014**), 27-30 May, 2014, Melbourne, Australia;

[**5**]. "Dynamic assessment of Amyloid oligomers – cell membrane interaction by advanced impedance spectroscopy" XVth Intl Conference on Electrical Bio-impedance & XIVth Conference on Electrical Impedance Tomography, 22-25 April Heilbad Heiligenstadt, Germany (**2013**)

[**6**]. "Quantitative insights into the complex interaction process between antimicrobial peptides and membranes", XXth International Symposium on Bioelectrochemistry and Bioenergetics, May (**2009**) Sibiu, Romania;

[**7**]. The 10th World Congress on Biosensors May 14 - 16, Shanghai, China**, (2008)**

[8]. "Biological characterisation of nano-patterned bio-surfaces using time based impedance spectroscopy" ESF – EMBO Symposium Probing interactions between nanoparticles/biomaterials and biological systems – alternative approaches to bio-toxicity Sant Feliu de Guixols, Spain, November (**2007**);
[9]. "SPR Assays with Magnetic Actuation for the Immuno-Affinity Detection of Target Cells" ESF-EMBO Symposium Biomagnetism and Magnetic Biosystems Based on Molecular Recognition Processes Sant Feliu de Guixols, Spain, September (**2007**);
[10]. "Biosensing via structured interfaces at nanoscale" Molecular Plasmonics International Symposium Jena (Germany) 10-12 May (**2007**);

(selected) Poster Presentations

31th World Congress on Biosensors, 26-29 July 2021 Online and On-demand
28th World Congress on Biosensors, 12-15 June 2018, Miami, Florida, USA (2018)
First International Summer Institute on Network Physiology (ISINP) *Lake Como School of Advanced Studies – 28 July – 2 August*, (2017);
FEBS EMBO 2014 Conference, Paris, France, 30 August - 4 September 2014;
Gordon Research Conference, Bionterface Science (2008);
SPM in Biology, Berlin (2008);
World Biosensors Congress; Shanghai, (2008);
European Biophysics Congress, (2007);
Integration Workshop Physics of Sensors and Detection Systems ISPRA, (2006);
World Biosensors Congress Granada, (2004)

Date
10.11.2021

Signature

(Selected) Publications List

Book Chapters top international publishing houses

1. M. Gheorghiu, A. Vasilescu *Surface Plasmon Resonance modified graphene oxide surfaces for whole cell based sensing, in Graphene Bioelectronics, chapter 7, A. Tiwari Ed., Elsevier, ISBN 978-0-12-813349-1* **(2017):** 151-171
2. S. David, C. Polonschii, M. Gheorghiu, D. Bratu, E. Gheorghiu, *Biosensing Based on Magneto-Optical Surface Plasmon Resonance, in MiMB series, Biosensors and Biodetection: Methods and Protocols, IInd Ed., A. Rasooly & B. Prickril Eds., Springer, (**2017**) ISBN: 978-1-4939-6846-6*
3. M. Gheorghiu, C. Polonschii, S. David, A. Olaru, E. Gheorghiu, *SPR Bioanalytical platform to appraise the interaction between antimicrobial peptides and lipid membranes, In Optical Nano- and Microsystems for Bioanalytics, Series Chemo- and Biosensors 10 (Series Editor Gerald Urban), Springer (**2012**) pp 183-210*
4. S. Andreescu, M. Gheorghiu, R. E. Ozel, K. Wallace *Methodologies for Toxicity Monitoring and Nanotechnology Risk Assessment, chapter 7 in ACS books series "Biotechnology and Nanotechnology Risk Assessment: Minding and Managing the Potential Threats around Us" Editor(s) Steven Ripp and Theodore B. Henry, Vol 1079 Publication Date (Web) October 18, (**2011**) DOI: 10.1021/bk-2011-1079*
5. E. Gheorghiu, M. Gheorghiu, S. David, C. Polonschii, *"Biodynsensing: sensing through dynamics of hybrid affinity / cellular platforms; towards appraisal of Environmental and Biological Risks of Nanobiotechnology" in Silicon Versus Carbon Fundamental Nanoprocesses, Nanobiotechnology and Risks Assessment, Series: NATO Science for Peace and Security Series, Magarshak, Y.; Kozyrev, S.; Vaseashta, A. K. (Eds.) (**2009**)*

ISI papers

6. C. Polonschii, M. Gheorghiu, S. David, S. Gáspár, S. Melinte, H. Majeed, M. E. Kandel, G. Popescu, E. Gheorghiu High-resolution impedance mapping using electrically activated quantitative phase imaging, *Light Sci Appl* 10, (**2021**) 20 doi.org/10.1038/s41377-020-00461-x IF 17.78
7. M. Gheorghiu, C. Polonschii, O. Popescu, E. Gheorghiu Advanced Optogenetic-Based Biosensing and Related Biomaterials, *Materials* (**2021**), 14, 4151 doi.org/10.3390/ma14154151 IF 3.623
8. Gheorghiu, M.; Stanica, L; Polonschii, C; David, S; Ruckenstein, A; Popescu, O.; Badea, T.; Gheorghiu, E., "Modulation of cellular reactivity for enhanced cell-based biosensing", *Anal. Chem*, (**2020**), 92, 1, 806-814; DOI: 10.1021/acs.analchem.9b03217 IF 6.350
9. Gheorghiu, M.; Stanica L; Ghinia Tegla, M.G; Polonschii, C; Bratu, D; Popescu, O.; Badea, T.; Gheorghiu, E., "Cellular sensing platform with enhanced sensitivity based on optogenetic modulation of cell homeostasis", *Biosensors Bioelectronics*, (**2019)**, DOI: 10.1016/j.bios.2019.112003 IF 9.518
10. Munteanu R.E., Ye R., Polonschii C., Ruff A, Gheorghiu M, Gheorghiu E, Boukherroub R, Schuhmann W, Melinte S, Gaspar S., "High spatial resolution electrochemical biosensing using reflected light microscopy", *Scientific Reports* (**2019**), 9:15196 IF 4.011

11. R.-E. Munteanu, L. Stanica, M. Gheorghiu, S. Gaspar Measurement of the extracellular pH of adherently growing mammalian cells with high spatial resolution using a voltammetric pH microsensor *Anal. Chem.* 90, 11, (**2018**) 6899-6905 IF 6.350
12. R.-E. Munteanu, L. Stanica, M. Gheorghiu, S. Gaspar Water electrolysis carried out on microelectrodes as way to obtain new insights into the regulation of cytosolic pH *ChemElectroChem* (**2019**) DOI: 10.1002/celc.201801558R2 IF 4.446
13. V. Dinca, D. Zaharie-Butucel, L. Stanica, S. Brajnicov, V. Marascu, A. Bonciu, A. Cristocea, L. Gaman, M. Gheorghiu, A. Vasilescu Functional Micrococcus lysodeikticus layers deposited by laser technique for the optical sensing of lysozyme, *Colloids and Surfaces B: Biointerfaces,* 168 (**2017**) 10.1016/j.colsurfb.2017.11.058 IF 3.89
14. L. Stanica*, M. Gheorghiu*, M. Stan, C. Polonschii, S. David, D. Bratu, A. Dinischiotu, C. T. Supuran, E. Gheorghiu Quantitative assessment of specific carbonic anhydrase inhibitors effect on hypoxic cells using electrical impedance assays *J. Enzyme Inhib Med Chem.* Vol 32, Iss1 (**2017**): 1079-1090 IF 4.29
15. L. Stanica[*], M. Rosu-Hamzescu[*], M. Gheorghiu, M. Stan, L. Antonescu, C. Polonschii, E. Gheorghiu, Electric cell-substrate impedance sensing of cellular effects under hypoxic conditions and carbonic anhydrase inhibition, *Journal of Sensors* **(2017)** Art No: 9290478 DOI: 10.1155/2017/9290478 IF 1.704
16. A.Vasilescu*, M. Gheorghiu*, S. Peteu Nanomaterial-based electrochemical sensors and optical probes for detection and imaging of peroxynitrite, *Microchim Acta* (2017) DOI: 10.1007/S00604-017-2093-7 IF 4.831 review
17. A. Vasilescu, S. Gáspár, M. Gheorghiu, S. David, V. Dinca, S. Peteu, Q. Wang, M. Li, R. Boukherroub, S. Szunerits, Surface Plasmon Resonance based sensing of lysozyme in serum on Micrococcus lysodeikticus-modified graphene oxide surfaces *Biosens. Bioelectron.* **(2017)** 89 (Pt 1):525-531. IF 7.703
18. A. Vasilescu, C. Purcarea, E. Popa, M. Zamfir, I. Mihai, S. Litescu, S. David, S. Gaspar, M. Gheorghiu, J-L. Marty, Versatile SPR aptasensor for detection of lysozyme dimer in oligomeric and aggregated mixtures, *Biosens. Bioelectron.* (**2016)**, 83, 353-360 IF 7.603
19. A. Bondarenko, F. Cortes-Salazar, M. Gheorghiu, S. Gaspar, D. Momotenko, L. Stanica, A. Lesch, E. Gheorghiu, H. H. Girault, Electrochemical push-pull probe: from scanning electrochemical microscopy to multimodal altering of cell microenvironment, *Anal. Chem.*, (**2015**) vol.87, p.4479–4486, IF 5.886
20. S. David, C. Polonschii, C. Luculescu, M. Gheorghiu, S. Gaspar, E. Gheorghiu, Magneto-Plasmonic Biosensor with Enhanced Analytical Response and Stability, *Biosens. Bioelectron.* **(2015),** 63, 525–532 IF 5.602
21. C. Polonschii, S. David, S. Gaspar, M. Gheorghiu, M. Rosu-Hamzescu, E. Gheorghiu, Complementarity of EIS and SPR to Reveal Specific and Nonspecific Binding When Interrogating a Model Bioaffinity Sensor; Perspective Offered by Plasmonic Based EIS, *Anal. Chem.*, (**2014**), 86 (17), 8553–8562, IF 5.83
22. M. Gheorghiu, S. David, C. Polonschii, A. Olaru, S. Gaspar, O. Bajenaru, B. O. Popescu, E. Gheorghiu, Label free sensing platform for amyloid fibrils effect on living cells, *Biosens.Bioelectron* 52, (**2014**) 89–97, IF 5.602

23. Stanica, L.; Gheorghiu M. Evaluation of cellular dynamics of optogenetically modified cells by electro-optical methods *FEBS J.* (**2014**) Vol: 281 SI 526
24. M. Gheorghiu*, A-M Enciu*, B.O. Popescu, E. Gheorghiu, Functional and molecular characterization of $A\beta_{42}$ effect on barrier properties, *J Alzheimers Dis.* (**2014**); 38(4):787-98. IF 3.61
25. S. David, C. Polonschii, M. Gheorghiu, D. Bratu, A. Dobre, E. Gheorghiu, Assessment of pathogenic bacteria using periodic actuation, *Lab Chip*, (**2013**), Aug 21;13(16):3192-8 IF 5.748 – front cover
26. A. Olaru, M. Gheorghiu, S. David, C. Polonschii, E. Gheorghiu, Quality assessment of SPR sensor chips; case study on L1 chips, *Biosens.Bioelectron* 45 (**2013**) 77-81 IF 5.602
27. S. Gáspár, S. David, C. Polonschii, I. Marcu, M. Gheorghiu, E. Gheorghiu, Simultaneous impedimetric and amperometric interrogation of renal cells exposed to a calculus-forming salt, *Anal Chim Acta*. (**2012**) Feb 3; 713:115-20. IF 4.517
28. C. Polonschii, S. Tombelli, S. David, M. Mascini, M. Gheorghiu, A novel low-cost and easy to develop functionalization platform. Case study: aptamer based detection of thrombin by surface plasmon resonance, *Talanta* 80 (**2010**) 2157–2164 IF 3.511
29. A.Olaru, M. Gheorghiu, S. David, T. Wohland, E. Gheorghiu, Assessment of the multiphase interaction between a membrane disrupting peptide and a lipid membrane, *J. Phys Chem* B (**2009**)**,** *113*, 14369–14380.
30. M. Gheorghiu, A. Olaru, A. Tar, C. Polonschii, E. Gheorghiu, Sensing based on assessment of non-monotonous effect determined by target analyte: case study on pore forming compounds, *Biosens. Bioelectron.* 24 (**2009**) *3517–3523*
31. M. Gheorghiu, W. Van Driessche, Modeling of basolateral ATP release induced by hypotonic treatment in A6 cells, *Eur Biophys J.* (**2004**) vol 33 No 5, 412-420;
32. Sadik, H. Wu, E. Gheorghiu, D. Andreescu, C.M. Balut, M. Gheorghiu, D. Bratu, Differential Impedance Spectroscopy for Monitoring Protein Immobilization and Antibody−Antigen Reactions, Analytical Chemistry, 74 (**2002**), 3142-3150. IF 5.094
33. E. Gheorghiu, C.Balut, M. Gheorghiu, Dielectric behaviour of Gap Junction Connected cells: a Microscopic Approach, *Phys Med. Biol.*, 47 No 2 (**2002**) 341-348. IF 2.342
34. M. Gheorghiu, E. Gersing, E. Gheorghiu, Quantitative analysis of impedance spectra of organs during ischemia, Ann.New York Academy Sci. 873, (**1999**) 65-71.
35. M. Mehedintu, H. Berg, Proliferation response of yeast Saccharomyces cerevisiae on electromagnetic field parameters, Bioelectrochem.Bioener, 43, 67-70,(**1997**);
36. M. Mihai, M. Mehedintu, E. Gheorghiu, The derivation of cellular properties from dielectric spectroscopy data, Bioelectrochem.Bioener, vol. 40, 187-192 (**1996**).
37. M. Mehedintu, C. M. Mihai, E. Gheorghiu, Fast, in flux, procedure to measure and preserve the growth medium parameters, Bioelectrochem. Bioener, vol. 40, 181-185 (**1996**).

Abstracts in ISI journals

38. Stanica, L.; Gheorghiu, M.; Gheorghiu, E. Cellular sensing platform for biomedical applications, *Eur. Biophys J. Biophys Lett.* (2017) Vol 46, S324
39. Stanica, L., Gheorghiu M., Gheorghiu E. Cellular sensing platform design using non-excitable optogenetically modified cells *Eur. Biophys J. Biophys Lett.* (**2015**) Vol: 44, S83
40. M. Gheorghiu, S. David, C. Polonschii, E. Gheorghiu "Sensing at nanoscale via structured interfaces" *Eur Biophys J.* (**2007**) 36 S157
41. M.Gheorghiu, S. David, C. Polonschii, D. Bratu, E. Gheorghiu, Biosensing and controlled interaction with cellular systems via structured interfaces. *Eur Cells Mat.* Vol.14.S.3, (**2007**) 63

Articles in peer-reviewed journals/books conference proceedings

1. M. Gheorghiu A short review on cell-based biosensing: challenges and breakthroughs in biomedical analysis. *The Journal of Biomedical Research*, (**2021)**, 35(4): 255-263. doi: 10.7555/JBR.34.20200128
2. M. Gheorghiu "Carbonic anhydrases: hematologic relevance and a biosensing perspective", *APJBG* (**2020**) DOI：10.46701/BG.2020012019132
3. A. Vasilescu, S. Gaspar, S. David, M. Gheorghiu, R. Boukherroub, S. Szunerits, "Lysozyme detection with graphene oxide–coated plasmonic interfaces: specificity brought by aptamer and cells for biorecognition", in *Series in Micro and Nanoengineering*, vol 26, (**2018**), "Nanotechnologies and nanomaterials for various applications", editors: Maria Zaharescu, Marius Enachescu and Dan Dascalu, editura Academiei Romane, ISBN: 978-973-27-2954-8, p 88-105
4. High Performance Low Cost Impedance Spectrometer for Biosensing, M. Rosu-Hamzescu, S. Oprea, C. Polonschii, E. Gheorghiu, M. Gheorghiu, *CSCS21 Proceedings*, (**2017**) DOI: 10.1109/CSCS.2017.16
5. M. Gheorghiu, S. David, C. Polonschii, D. Bratu, E. Gheorghiu "Dynamic assessment of Amyloid oligomers – cell membrane interaction by advanced impedance spectroscopy" *J. Phys.: Conf. Ser.* 434 (**2013**) 012090
6. M. Gheorghiu, D. Bratu, A. Olaru, C. Polonschii, E. Gheorghiu "Revealing membrane potential by advanced impedance spectroscopy: theoretical and experimental aspects" *J. Phys.: Conf. Ser.* 434 (**2013**) 012087
7. A. Ursu, M. Gheorghiu, S. David, E. Gheorghiu Sensing the cell- substrate interaction towards development of "smart" surfaces (**2007**) IFMBE Proceedings, Ed. Springer, vol 17, pp 106-109
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