



Centrul International de Biodinamica

infiintat prin HG 1378/2000
Intrarea Portocalelor, 1B, Bucuresti 6, 060101 Romania

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Raport de autoevaluare 2004-2007

Atestare

1. *Date de autentificare ale unitatii de cercetare*

- 1.1. Denumirea: CENTRUL INTERNATIONAL DE BIODINAMICA
- 1.2. Statutul juridic: Fundatie de interes general si utilitate publica
- 1.3. Actul de infiintare: HG 1378/2000
- 1.4. Nr.inreg.in Registrul potentialilor contractori:
- 1.5. Director: CS I Dr. Eugen Gheorghiu
- 1.6. Adresa: "Bucuresti, Intrarea Portocalelor 1B, sector 6"
- 1.7. Telefon, fax, pagina web, e-mail:"
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2. *Domeniul de specialitate*

2.1. Conform clasificarii UNESCO:

2202;2203;2210;2211;2212;2299;2301;2302;2304;2401;
2403;2406;2407;2412;2414;2415;3105;3207;3208;3209;
3214;3302;3307;3309;3311;3312;

2.2. Conform clasificarii CAEN: 7310; 7430; 8042; 7487; 9133

3. *Starea unității de cercetare-dezvoltare*

3.1. Misiunea unității de cercetare-dezvoltare, direcțiile de cercetare, dezvoltare, inovare: (maximum 1.000 de caractere):

Centrul International de Biodinamica deruleaza proiecte de cercetare, dezvoltare tehnologica si programe de formare la nivel national si international in domeniul Biodinamicii, pentru analiza, monitorizarea si controlul biosistemelor si biointerfetelor.

Dezvoltarea componentei umane, înalt calificată este orchestrată în sinergie cu modernizarea și largirea infrastructurii de cercetare și asamblarea unei rețele de colaborare regională și internațională. Aplicațiile avute în vedere sunt: detectia analitelor aferente controlului calității apei și alimentelor, precum și analiza platformelor celulare pentru aplicații biomedicale.

Electrozii miniaturizați sunt combinați cu elemente biologice de recunoaștere (enzime, alte proteine, celule vii, etc.). Această combinație bio / non-bio este exploatată atât cu scopul de a obține noi (bio)senzori cât și pentru a obține detalii suplimentare despre funcționarea elementului biologic respectiv, utilizând tehnici specifice de electrofiziologie, electrochimie și optica (SPR, microscopie de fluorescență și TIRF) și platforme combinate (ex. platforme electro-optice).

3.2. Modul de valorificare a rezultatelor de cercetare, dezvoltare, inovare și gradul de recunoaștere a acestora (maximum 1.000 de caractere):

Rezultatele sunt în primul rând valorificate sub forma de articole publicate în reviste de specialitate (factor de impact ISI între 1.4 și 5.64). O măsură a gradului de recunoaștere al impactului și calității cercetărilor derulate în CIB îl constituie și participarea în inițiative internaționale: 1 proiect FP5, 2 proiecte FP6, 5 proiecte bilaterale cu Belgia, Singapore și Franța și 3 propuneri FP7 a căror punctaj s-a situat peste barem. Rezultatele au fost prezentate la conferințe internaționale de prestigiu (vezi Congresul de Biosenzori organizat bianual unde s-a participat la 3 ediții cu lucrări ce prezintă metode originale dezvoltate în cadrul CIB), CIB fiind și organizatorul unor manifestări cu largă participare internațională în 2004, 2006 și 2007.

Pe plan intern, CIB derulează ca și contractor unic sau în consorții interdisciplinare, un număr de 12 proiecte de cercetare aplicativă.

Metodele și dispozitivele dezvoltate au la bază brevete ale CIB. Acreditarea unor laboratoare de analize prevăzută pentru finalul lui 2007 este o altă modalitate de valorificare a metodelor și dispozitivelor dezvoltate în cadrul CIB.

3.3. Situația financiară – datorii la bugetul de stat : 0

4. Criterii primare de performanță

4.1. Lucrări științifice/tehnice publicate în reviste de specialitate cotate ISI*4

4.1.1. Număr de lucrări științifice

4.1.2. Punctaj cumulativ ISI

Publicatii in reviste ISI

Nr. Crt.	Lucrarea	Autorii	Punctaj ISI
2004			
1	Membrane Cholesterol Depletion in A6 cells depresses activated sodium transport and elicits a transient chloride secretion during a hypotonic shock/" , J Am Soc Nephrol /15, 2004 (abstract)	P. Steels, D. Jans, W. van Driessche, *C.M. Balut*	(7.24)
2	Modeling of basolateral ATP release induced by hypotonic treatment in A6 cells" 2004. Eur Biophys J.vol 33 No 5, 412-420; (1.76)	M. Gheorghiu, W. Van Driessche	(1.76)
3	"Effects of membrane cholesterol on epithelial sodium channels (ENaC) present in A6 cells and expressed in /Xenopus laevis/ oocytes", /Pfluegers Archives/, 447, 2004 (abstract)	C.M. Balut*, A. Segal, D. Cucu, W. van Driessche, P. Steels	(4.807)
4	"The role of emitter quasi-bound state and scattering on intrinsic bistability in resonant tunneling diodes" , Physica E 22/4, 815, 2004.	T. Sandu W. P. Kirk	(0.95)
5	The transoocyte voltage clamp: a non-invasive technique for electrophysiological experiments with Xenopus laevis oocytes.	Cucu, D., Simaels J., Jans D., Van Driessche,	(4.807)

	Pflügers Arch 447:934-942.		
6	“Visualization of micropatterned complex biosensor sensing chemistries by means of scanning electrochemical microscopy”, Biosens. Bioelectron., 2004, 19(10), 1175-1184.	M. Niculescu, S. Gáspár, A. Schulte, E. Csöregi, W. Schuhmann	(3.463)
7	“Biosensors for life quality: Design, development and applications”, Sensors and Actuators B, 2004, 102(2), 179-194.	J. Castillo, S. Gáspár, S. Leth, M. Niculescu, Mortari, I. Bontidean, V. Soukharev, S. A. Dorneanu, A. D. Ryabov, E. Csöregi	(2.646)
8	Amperometric biosensor-based flow-through microdetector for microdialysis applications, Anal. Chim. Acta, 2004, 525(1), 75-82.	S. Gáspár, X. Wang, H. Suzuki, E. Csöregi	(2.073)
	<i>TOTAL/An</i>		28.783
2005			
9	Generalized band anti-crossing model for highly mismatched semiconductors applied to BeSe_xTe_{1-x}, Phys. Rev. B.72, 073204, 2005; cond-mat/0507189	Titus Sandu W. P. Kirk	(3.185)
10	“Optical matrix elements in tight-binding models with		(3.185)

	overlap”, Phys. Rev. B. 72, 125105, 2005; cond-mat/0507204.	Titus Sandu	
11	“Band bowing in BeSe_xTe_{1-x}”, AIP Conference Proceedings vol. 772, p. 175, 2005.	T. Sandu W. P. Kirk	(2.316)
12	"How membrane cholesterol depletion regulates Na⁺ transport in A6 renal epithelial cells ", /J Am Soc Nephrol /16, 2005 (abstract)	C.M. Balut, D. Jans, W. Van Driessche, P. Steels	(7.24)
13	"Membrane Cholesterol Extraction decreases Na⁺ Reabsorption in A6 Renal Epithelia", /AJP -- Cel, /290 (1), C87-94, 2006, Epub Aug 17, 2005	C.M. Balut*, P. Steels, M. Radu, M. Ameloot, Van Driessche, D. Jans,	(3.942)
14	Opposite effects of Ni²⁺ on Xenopus and rat ENaC expressed in Xenopus oocytes. Am J Physiol Cell 289(4): C946-58	Cucu D, Simaels J, Eggermont J, Van Driessche, Zeiske W	(3.942)
	<i>TOTAL/An</i>		23.81
2006			
15	“Spin tunneling through an indirect barrier”, Phys. Rev. B. 73, 075313, 2006; cond-mat/0601297	Titus Sandu, Athanasios Chantis, Radu Iftimie	(3.185)
16	“Dynamics of a two-level system coupled with a quantum oscillator: The very strong coupling limit”, Phys. Rev. B. 74, 113405 (2006); cond-mat/0608483	Titus Sandu	(3.185)
17	“Electronic and optical properties of beryllium chalcogenides/silicon”, Phys. Rev. B. 73, 235307 (2006); cond-mat/0608514.	Titus Sandu W. P. Kirk	(3.185)
	<i>TOTAL/An</i>		9.555

2007			
18	“Sensing at nanoscale via structured interfaces” Eur Biophys J. (2007) 36 S157	M. Gheorghiu, S. David, C. Polonschii, E. Gheorghiu	(1.811)
19	High temporal resolution monitoring of fermentations using an on-line amperometric flow-through microdetector, Electroanalysis, 2007, 19(1), 43-48.	K. Zor, S. Gaspar, M. Hashimoto, H. Suzuki, E. Csoregi,	(2.189)
20	Ultramicrobiosensor for the selective detection of glutamate, Electroanalysis, 2007, 19(1), 71-78.	O.M. Schuvailo, S. Gaspar, A.P. Soldatkin, E. Csoregi	(2.189)
21	High temporal resolution monitoring of fermentations using an on-line amperometric flow-through microdetector, Electroanalysis, 2007, 19(1), 43-48.	K. Zór, S. Gáspár, M. Hashimoto, H. Suzuki, E. Csöregi	(2.189)
22	Miniaturized on-line digestion system for the sequential identification and characterization of protein analytes, J. Chromatography A, 2007, 1146(1), 17-22.	M. Hedstrom, C.E. Grey, S. Gaspar, B. Mattiasson	(3.096)
23	“Comments on Spin-dependent tunneling through a symmetric semiconductor barrier: The Dresselhaus effect” to be published into Phys Rev. B.(2007)	Titus Sandu	(3.185)
6	TOTAL/An		14.659
23	TOTAL		(76.807)

Publicatii in reviste ISI
Citari in reviste de specialitate ale personalului CIB

Nr. Crt.	Lucrarea	Autorii	Nr. citari	Citari In reviste de specialitate
2004				
1	“Experimental determination of blood permittivity and conductivity in simple shear flow”, Clinical Hemorheology and Microcirculation , Vol. 30, Nr. 3-4, 359 – 364, 2004	C. Balan, C.M. Balut, L. Gheorghe, C. Gheorghe, E. Gheorghiu, G. Ursu	1	Studies of electrorheological properties of blood Antonova, N., Riha, P. Clinical Hemorheology and Microcirculation 35 (1-2), pp. 19-29
2	Measuring living cells using dielectric spectroscopy Bioelectrochemistry and Bioenergetics, 1996	E.Gheorghiu	4	Cellular dielectric spectroscopy: A powerful new approach to label-free cellular analysis Ciambrone, G.J., Liu, V.F., Lin, D.C., McGuinness, R.P., Leung, G.K., Pitchford, S. Journal of Biomolecular Screening 9 (6), pp. 467-480
				Time domain dielectric spectroscopy measurements of HL-60 cell suspensions after microsecond and nanosecond electrical pulses Garner, A.L., Chen, N., Yang, J., Kolb, J., Swanson, R.J., Loftin, K.C., Beebe, S.J., (...), Schoenbach, K.H. IEEE Transactions on Plasma Science 32 (5 II), pp. 2073-2084
				Experimental determination of blood permittivity and conductivity in simple shear flow Clinical Hemorheology and Microcirculation 30 (3-4), pp. 359-364
				Analysis in Ultrasmall Volumes: Microdispensing of Picoliter Droplets and Analysis without Protection from Evaporation Neugebauer, S., Evans, S.R.,

3	<p>A method for the design and study of enzyme microstructures formed by means of a flow-through microdispenser Anal. Chem, 2001</p>	<p>Gáspár, S., Mosbach, M., Wallman, L., Laurell, T., Csőregi, E., Schuhmann, W.</p>	<p>9</p> <p>Aguilar, Z.P., Mosbach, M., Fritsch, I., Schuhmann, W. Analytical Chemistry 76 (2), pp. 458-463</p> <p>Simultaneous covalent immobilization of glucose oxidase and catalase onto chemically modified acrylonitrile copolymer membranes Godjevargova, T., Dayal, R., Marinov, I. Journal of Applied Polymer Science 91 (6), pp. 4057-4063</p> <p>Visualization of micropatterned complex biosensor sensing chemistries by means of scanning electrochemical microscopy Niculescu, M., Gáspár, S., Schulte, A., Csőregi, E., Schuhmann, W. Biosensors and Bioelectronics 19 (10), pp. 1175-1184</p> <p>Chemical imaging of biological systems with the scanning electrochemical microscope Gyurcsányi, R.E., Jágerszki, G., Kiss, G., Tóth, K. Bioelectrochemistry 63 (1-2), pp. 207-215</p> <p>Label-free electrochemical recognition of DNA hybridization by means of modulation of the feedback current in SECM Turcu, F., Schulte, A., Hartwich, G., Schuhmann, W. Angewandte Chemie - International Edition 43 (26), pp. 3482-3485</p> <p>An advanced biological scanning electrochemical microscope (Bio-SECM) for studying individual living cell Bauermann, L.P., Schuhmann, W., Schulte, A. Physical Chemistry Chemical Physics 6 (15), pp. 4003-4008</p> <p>An SECM detection scheme with improved sensitivity and lateral resolution: Detection of galactosidase activity with signal amplification by glucose</p>
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				<p>dehydrogenase Zhao, C., Wittstock, G. Angewandte Chemie - International Edition 43 (32), pp. 4170-4172</p>
				<p>Immobilization of glucose oxidase on cellulose/cellulose acetate membrane and its detection by scanning electrochemical microscope (SECM) Zhao, J.S., Yang, Z.Y., Zhang, Y.H., Yang, Z.Y. Chinese Chemical Letters 15 (11), pp. 1361-1364</p>
				<p>Optimization of "wired" enzyme O₂-electroreduction catalyst compositions by scanning electrochemical microscopy Fernández, J.L., Mano, N., Heller, A., Bard, A.J. Angewandte Chemie - International Edition 43 (46), pp. 6355-6357</p>
4	<p>Hydrogen peroxide biosensors based on direct electron transfer from plant peroxidases immobilized on self- assembled thiol- monolayer modified gold electrodes</p> <p>Electroanalysis, 2001, 13 (4), 284-288</p>	<p>Gaspar, S., Zimmermann, H., Gazaryan, I., Csöregi, E., Schuhmann, W.</p>	6	<p>Flow injection amperometric detection at enzyme-modified gold nanoelectrodes Delvaux, M., Demoustier- Champagne, S., Walcarius, A. Electroanalysis 16 (3), pp. 190-198</p> <p>Thick-film electrodes for measurement of superoxide and hydrogen peroxide based on direct protein-electrode contacts Krylov, A.V., Beissenhirtz, M., Adamzig, H., Scheller, F.W., Lisdaf, F. Analytical and Bioanalytical Chemistry 378 (5), pp. 1327- 1330</p>
				<p>Preparation of biosensors based in a siloxane homopolymer with interacting ferrocenes for the amperometric detection of peroxides García Armada, M.P., Losada, J., Cuadrado, I., Alonso, B., González, B., Casado, C.M., Zhang, J. Sensors and Actuators, B: Chemical 101 (1-2), pp. 143-149</p>
				<p>Bioelectrocatalysis of oxygen reduction reaction by laccase on</p>

				<p>gold electrodes Gupta, G., Rajendran, V., Atanassov, P. Electroanalysis 16 (13-14), pp. 1182-1185</p> <p>Disposable biosensor based on a hemoglobin colloidal gold- modified screen-printed electrode for determination of hydrogen peroxide Xu, X., Liu, S., Ju, H. IEEE Sensors Journal 4 (4), pp. 390-394</p> <p>Direct voltammetry and catalysis of hemoenzymes in methyl cellulose film Li, Y.-M., Chen, X.-T., Li, J., Liu, H.-H. Electrochimica Acta 49 (19), pp. 3195-3200</p>
5	<p>Hydrogen peroxide sensitive biosensor based on plant peroxidases entrapped in Os-modified polypyrrole films</p> <p>Sensors and Actuators B, 2001, 72 (1). 63-68.</p>	<p>Gaspar, S., Habermüller, K., Csöregi, E., Schuhmann, W.</p>	3	<p>Preparation of biosensors based in a siloxane homopolymer with interacting ferrocenes for the amperometric detection of peroxides Sensors and Actuators, B: Chemical 101 (1-2), pp. 143-149</p> <p>A new strategy for determining optimum pH of isozymes Bulletin of the Korean Chemical Society 25 (7), pp. 997-1002</p> <p>XPS and FT-IR spectroscopy study of albumin adsorption on the surface of a π-conjugated polymer film Surface and Interface Analysis 36 (8), pp. 724-728</p>
6	<p>On the limits of ellipsoidal models when analyzing dielectric behavior of living cells. Emphasis on red blood cells</p> <p>Annals of The New York Academy of Sciences 1999</p>	<p>E.Gheorghiu</p>	2	<p>Dielectrophoretic forces on the nanoscale Schaldach, C.M., Bourcier, W.L., Paul, P.H., Wilson, W.D. Langmuir 20 (24), pp. 10744- 10750</p> <p>Electrical admittance method for estimating fluid removal during artificial dialysis Sakamoto, K., Kanai, H., Furuya, N. Medical and Biological Engineering and Computing 42 (3), pp. 356-365</p>

7	<p>Real-time monitoring of yeast cell division by dielectric spectroscopy Biophys. J 1999</p>	<p>K. Asami, E. Gheorghiu, T. Yonezawa</p>	3	<p>Evaluation of electric impedance spectra for single bio-cells with micro-fluidic devices using combined FEMLAB/HSPICE simulated models Senez, V., Takatoki, T., Poussard, B., Fukuba, T., Capron, J.M., Fujii, T. 2004 NSTI Nanotechnology Conference and Trade Show - NSTI Nanotech 2004 1, pp. 99-102</p> <p>Low-frequency, low-field dielectric spectroscopy of living cell suspensions Prodan, C., Mayo, F., Claycomb, J.R., Miller Jr., J.H., Benedik, M.J. Journal of Applied Physics 95 (7), pp. 3754-3756</p> <p>Developing rapid detection of mycobacteria using microwaves Jing, G., Hollis, G., Polaczyk, A., Eluru, H.B., Kinkle, B., Mast, D., Oerther, D.B., Papautsky, I. Analyst 129 (10), pp. 963-969</p>
8	<p>Dielectric behavior of budding yeast in cell separation BBA 1998</p>	<p>K. Asami, E. Gheorghiu, T. Yonezawa</p>	3	<p>Developing rapid detection of mycobacteria using microwaves Jing, G., Hollis, G., Polaczyk, A., Eluru, H.B., Kinkle, B., Mast, D., Oerther, D.B., Papautsky, I. Analyst 129 (10), pp. 963-969</p> <p>Water-network percolation transitions in hydrated yeast Sokołowska, D., Król-Otwinowska, A., Mościcki, J.K. Physical Review E - Statistical, Nonlinear, and Soft Matter Physics 70 (5 1), art. no. 052901, pp. 052901-1-052901-4</p> <p>Control of cell elution from a dielectrophoresis micro-array using a permittivity gradient Lee, R.S., Arnold, W.M., Pethig, R.</p>

				Annual Report - Conference on Electrical Insulation and Dielectric Phenomena, CEIDP, pp. 352-355
9	Monitoring cell cycle by impedance spectroscopy: Experimental and theoretical aspects Bioelectrochem. Bioenerg 1998	E.Gheorghiu	1	Electrical stimulation of Saccharomyces cerevisiae cultures Araújo, O.Q.F., Coelho, M.A.Z., Margarit, I.C.P., Vaz-Junior, C.A., Rocha-Leão, M.H.M. Brazilian Journal of Microbiology 35 (1-2), pp. 97-103
10	Characterizing cellular systems by means of dielectric spectroscopy Bioelectromagnetics , 1996	E.Gheorghiu	1	Cellular dielectric spectroscopy: A powerful new approach to label-free cellular analysis Ciabrone, G.J., Liu, V.F., Lin, D.C., McGuinness, R.P., Leung, G.K., Pitchford, S. Journal of Biomolecular Screening 9 (6), pp. 467-480
11	Shape effects on the dielectric behaviour of arbitrarily shaped particles with particular reference to biological cells Bioelectrochemistry and Bioenergetics , 1996	E.Gheorghiu	1	Complex permittivity measurement as a new noninvasive tool for monitoring in vitro tissue engineering and cell signature through the detection of cell proliferation, differentiation, and pretissue formation Bagnaninchi, P.-O., Dikeakos, M., Veres, T., Tabrizian, M IEEE Transactions on Nanobioscience 3 (4), pp. 243-250
12	Membrane Cholesterol Depletion in A6 cells depresses activated sodium transport and elicits a transient chloride secretion during a hypotonic shock/"', J Am Soc Nephrol /15, 2004 (abstract)	P. Steels, D. Jans, W. van Driessche, *C.M. Balut*	0	
13	Modeling of basolateral ATP release induced by hypotonic treatment in A6 cells" 2004. Eur Biophys J .vol 33 No 5, 412-420; (1.76)	M. Gheorghiu, W. Van Driessche	1	<u>Kinetics of urothelial ATP release</u> SA Lewis, JR Lewis - American Journal of Physiology- Renal Physiology
	"Effects of membrane cholesterol on epithelial sodium channels	C.M. Balut*		

14	(ENaC) present in A6 cells and expressed in /Xenopus laevis/ oocytes", /Pfluegers Archives/, 447, 2004 (abstract)	A. Segal, D. Cucu, W. van Driessche, P. Steels	0	
15	"The role of emitter quasi-bound state and scattering on intrinsic bistability in resonant tunneling diodes", Physica E 22/4, 815, 2004.	T. Sandu and W. P. Kirk	1	NEGF simulation of the RTD bistability Voves, J., Trěbický, T., Jackiv, R. Journal of Computational Electronics 6 (1), pp. 259-262
16	The transoocyte voltage clamp: a non-invasive technique for electrophysiological experiments with Xenopus laevis oocytes. Pflügers Arch 447:934-942.	Cucu, D., Simaels, J., Jans, D., Van Driessche, W.	2	The use of the Xenopus oocyte as a model system to analyze the expression and function of eukaryotic heat shock proteins Biotechnology Advances 25 (4), pp. 385-395 Integrated microsystem for non-invasive electrophysiological measurements on Xenopus oocytes Biosensors and Bioelectronics 22 (12), pp. 3196-3202
17	"Visualization of micropatterned complex biosensor sensing chemistries by means of scanning electrochemical microscopy", Biosens. Bioelectron., 2004, 19(10), 1175-1184.	M. Niculescu, S. Gáspár, A. Schulte, E. Csöregi, W. Schuhmann	9	[1] G. Wittstock, M. Burchardt, S. E. Pust, Y. Shen, C. Zhao, Scanning electrochemical microscopy for direct imaging of reaction rates, Angewandte Chemie-International Edition 2007, 46, 1584. [2] G. Nagy, L. Nagy, Electrochemical sensors developed for gathering microscale chemical information, Analytical Letters 2007, 40, 3. [3] N. R. Wilson, M. Guille, I. Dumitrescu, V. R. Fernandez, N. C. Rudd, C. G. Williams, P. R. Unwin, J. V. Macpherson, Assessment of the electrochemical behavior of two-dimensional networks of single-walled carbon nanotubes, Analytical Chemistry 2006, 78, 7006. [4] E. Fortin, P. Mailley, L. Lacroix, S. Szunerits, Imaging of DNA hybridization on microscopic polypyrrole patterns

				<p>using scanning electrochemical microscopy (SECM): the HRP bio-catalyzed oxidation of 4-chloro-1-naphthol, <i>Analyst</i> 2006, 131, 186.</p> <p>[5] X. F. Yang, Z. D. Zhou, D. Xiao, M. M. F. Choi, A fluorescent glucose biosensor based on immobilized glucose oxidase on bamboo inner shell membrane, <i>Biosensors & Bioelectronics</i> 2006, 21, 1613.</p> <p>[6] C. Wang, Y. Zhang, H. S. Seng, L. L. Ngo, Nanoparticle-assisted micropatterning of active proteins on solid substrate, <i>Biosensors & Bioelectronics</i> 2006, 21, 1638.</p> <p>[7] D. Burshtain, D. Mandler, Studying the binding of Cd²⁺ by omega-mercaptoalkanoic acid self assembled monolayers by cyclic voltammetry and scanning electrochemical microscopy (SECM), <i>Journal of Electroanalytical Chemistry</i> 2005, 581, 310.</p> <p>[8] M. Wu, Z. H. Lin, M. Schaferling, A. Durkop, O. S. Wolfbeis, Fluorescence imaging of the activity of glucose oxidase using a hydrogen-peroxide-sensitive europium probe, <i>Analytical Biochemistry</i> 2005, 340, 66.</p> <p>[9] J. L. Fernandez, N. Mano, A. Heller, A. J. Bard, Optimization of "wired" enzyme O-2-electroreduction catalyst compositions by scanning electrochemical microscopy, <i>Angewandte Chemie-International Edition</i> 2004, 43, 6355.</p>

18	<p>“Biosensors for life quality: Design, development and applications”, Sensors and Actuators B, 2004, 102(2), 179-194.</p>	<p>J. Castillo, S. Gáspár, S. Leth, M. Niculescu, A. Mortari, I. Bontidean, V. Soukharev, S. A. Dorneanu, A. D. Ryabov, E. Csöregi</p>	26	<p>[1] S. Timur, U. Anik, D. Odaci, L. Lo Gorton, Development of a microbial biosensor based on carbon nanotube (CNT) modified electrodes, <i>Electrochemistry Communications</i> 2007, 9, 1810.</p> <p>[2] Q. J. Liu, H. Cai, Y. Xu, L. D. Xiao, M. Yang, P. Wang, Detection of heavy metal toxicity using cardiac cell-based biosensor, <i>Biosensors & Bioelectronics</i> 2007, 22, 3224.</p> <p>[3] P. Vopalensky, T. Ruml, P. Kotrba, Biological components of heavy metal biosensors, <i>Chemické Listy</i> 2007, 101, 468.</p> <p>[4] M. Mijajlovic, M. J. Biggs, On use of the amber potential with the Langevin dipole method, <i>Journal of Physical Chemistry B</i> 2007, 111, 7591.</p> <p>R. Maalouf, H. Chebib, Y. Saikali, O. Vittori, M. Sigaud, F. Garrelie, C. Donnet, N. Jaffrezic-Renault, Characterization of different diamond-like carbon electrodes for biosensor design, <i>Talanta</i> 2007, 72, 310.</p> <p>[6] J. M. Boutin, J. Richer, M. Tremblay, V. Bissonette, N. Voyer, Synthesis and characterization of peptide nanostructures chemisorbed on gold, <i>New Journal of Chemistry</i> 2007, 31, 741.</p> <p>[7] M. M. Barsan, J. Klincar, M. Batic, C. M. A. Brett, Design and application of a flow cell for carbon-film based electrochemical enzyme</p>
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			<p>biosensors, <i>Talanta</i> 2007, 71, 1893.</p>
			<p>[8] K. S. Chang, C. K. Chang, S. F. Chou, H. C. Han, C. Y. Chen, Characterization of a planar L-glutamate amperometric biosensor immobilized with a photo-crosslinkable polymer membrane, <i>Sensors and Actuators B-Chemical</i> 2007, 122, 195.</p>
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60	<p>arbitrarily shaped particles with particular reference to biological cells</p> <p>Bioelectrochemistry and Bioenergetics, 1996</p>	E.Gheorghiu	1	<p>yeast</p> <p>Asami, K., Sekine, K.</p> <p>Journal of Physics D: Applied Physics 40 (4), art. no. 033, pp. 1128-1133</p>
61	<p>Hydrogen peroxide biosensors based on direct electron transfer from plant peroxidases immobilized on self-assembled thiol-monolayer modified gold electrodes</p> <p>Electroanalysis, 2001, 13 (4), 284-288</p>	Gaspar, S., Zimmermann, H., Gazaryan, I., Csöregi, E., Schuhmann, W.	4	<p>Self-assembled layer of thiolated protein G as an immunosensor scaffold</p> <p>Analytical Chemistry 79 (1), pp. 350-354</p> <p>Direct electron transfer of hemoglobin immobilized in multiwalled carbon nanotubes enhanced grafted collagen matrix for electrocatalytic detection of hydrogen peroxide</p> <p>Electroanalysis 19 (7-8), pp. 841-846</p> <p>Investigation of heterogeneous electrochemical processes using multi-stream laminar flow in a microchannel</p> <p>Lab on a Chip - Miniaturisation for Chemistry and Biology 7 (4), pp. 441-447</p> <p>DNA-directed immobilization of horseradish peroxidase-DNA conjugates on microelectrode arrays: Towards electrochemical screening of enzyme libraries</p> <p>Chemistry - A European Journal 13 (18), pp. 5223-5231</p>
62	<p>A method for the design and study of enzyme microstructures formed by means of a flow-through microdispenser</p> <p>Anal. Chem, 2001</p>	Gáspár, S., Mosbach, M., Wallman, L., Laurell, T., Csöregi, E., Schuhmann, W.	5	<p>SECM visualization of spatial variability of enzyme-polymer spots. 1. Discretisation and interference elimination using artificial neural networks</p> <p>Schäfer, D., Maciejewska, M., Schuhmann, W.</p> <p>Biosensors and Bioelectronics 22 (9-10), pp. 1887-1895</p> <p>Scanning electrochemical microscopy for direct imaging of reaction rates</p> <p>Wittstock, G., Burchardt, M., Pust, S.E., Shen, Y., Zhao, C.</p> <p>Angewandte Chemie - International Edition 46 (10), pp. 1584-1617</p>

				<p>DNA-directed immobilization of horseradish peroxidase-DNA conjugates on microelectrode arrays: Towards electrochemical screening of enzyme libraries Fruk, L., Müller, J., Weber, G., Narváez, A., Domínguez, E., Niemeyer, C.M.</p> <p>Chemistry - A European Journal 13 (18), pp. 5223-5231</p>
				<p>Review: Recent applications of scanning electrochemical microscopy to the study of charge transfer kinetics Lu, X., Wang, Q., Liu, X.</p> <p>Analytica Chimica Acta 601 (1), pp. 10-25</p>
				<p>Advances in the application of scanning electrochemical microscopy to bioanalytical systems</p> <p>Roberts, W.S., Lonsdale, D.J., Griffiths, J., Higson, S.P.J.</p> <p>Biosensors and Bioelectronics 23 (3), pp. 301-318</p>
63	<p>Hydrogen peroxide sensitive biosensor based on plant peroxidases entrapped in Os-modified polypyrrole films</p> <p>Sensors and Actuators B, 2001, 72 (1). 63-68.</p>	<p>Gaspar, S., Habermüller, K., Csöregi, E., Schuhmann, W.</p>	3	<p>A hydrogen peroxide sensor prepared by electropolymerization of pyrrole based on screen-printed carbon paste electrodes Sensors 7 (3), pp. 239-250</p>
				<p>Rapid determination of phenolic compounds in water samples by alternating-current oscillopolarographic titration Journal of Environmental Sciences 19 (5), pp. 622-627</p>
				<p>Glucose biosensor based on immobilization of glucose oxidase in poly(o-aminophenol) film on polypyrrole-Pt nanocomposite modified glassy carbon electrode Biosensors and Bioelectronics 22 (12), pp. 2898-2905</p>

64	Dielectric behavior of budding yeast in cell separation BBA 1998	K. Asami, E. Gheorghiu, T. Yonezawa	2	Integrated electrochemical sensor array for on-line monitoring of yeast fermentations Krommenhoek, E.E., Gardeniers, J.G.E., Bomer, J.G., Li, X., Ottens, M., Van Dedem, G.W.K., Van Leeuwen, M., (...), Van Den Berg, A. Analytical Chemistry 79 (15), pp. 5567-5573
				Dielectric analysis of chitosan gel beads suspensions: Influence of low crosslinking agent concentration on the dielectric behavior Ni, N., Zhao, K. Journal of Colloid and Interface Science 312 (2), pp. 256-264
65	Biosensors based on novel plant peroxidases: A comparative study Electrochim. Acta, 2000, 46 (2-3), 255-264.	Gaspar, S., Popescu, I.C., Gazaryan, I.G., Gerardo Bautista, A., Sakharov, I.Y., Mattiasson, B., Csöregi, E.	2	Covalent attachment of ferrocene to soybean peroxidase glycans: Electron transfer mediation to redox enzyme Bioconjugate Chemistry 18 (2), pp. 524-529
				Polyclonal antibodies mediated immobilization of a peroxidase from ammonium sulphate fractionated bitter melon (Momordica charantia) proteins Biomolecular Engineering 24 (2), pp. 223-230
66	Quantitative analysis of impedance spectra of organs during ischemia Annals of The New York Academy of Sciences 1999	Gheorghiu, M., Gersing, E., Gheorghiu, E.	3	Hyperthermia, a modality in the wings Szasz, A. Journal of Cancer Research and Therapeutics 3 (1), pp. 56-66
				Improvement of lock-in electrical bio-impedance analyzer for implantable medical devices Min, M., Parve, T. IEEE Transactions on Instrumentation and Measurement 56 (3), pp. 968-974
				Dielectric properties of biological tissues in which cells are connected by communicating junctions Asami, K. Journal of Physics D: Applied Physics 40 (12), art. no. 027, pp. 3718-3727

67	Real-time monitoring of yeast cell division by dielectric spectroscopy Biophys. J 1999	K. Asami, E. Gheorghiu, T. Yonezawa	3	Dielectric modelling of cell division for budding and fission yeast Asami, K., Sekine, K. Journal of Physics D: Applied Physics 40 (4), art. no. 033, pp. 1128-1133
				Protein influence on the plasma membrane dielectric properties: In vivo study utilizing dielectric spectroscopy and fluorescence microscopy Stoneman, M., Chaturvedi, A., Jansma, D.B., Kosempa, M., Zeng, C., Raicu, V. Bioelectrochemistry 70 (2), pp. 542-550
				On-line biomass measurements in bioreactor cultivations: Comparison study of two on-line probes Kiviharju, K., Salonen, K., Moilanen, U., Meskanen, E., Leisola, M., Eerikäinen, T. Journal of Industrial Microbiology and Biotechnology 34 (8), pp. 561-566
68	Monitoring cell cycle by impedance spectroscopy: Experimental and theoretical aspects Bioelectrochem. Bioenerg1998	E.Gheorghiu	1	Dielectric modelling of cell division for budding and fission yeast Asami, K., Sekine, K. Journal of Physics D: Applied Physics 40 (4), art. no. 033, pp. 1128-1133
69	“Comments on Spin-dependent tunneling through a symmetric semiconductor barrier: The Dresselhaus effect” to be published into Phys Rev. B.(2007)	Titus Sandu	0	
	TOTAL/An		25	
69	TOTAL(2004-2007)		177	

5.CRITERII SECUNDARE DE PERFORMANTA**5.1 Lucrari stiintifice (tehnice) publicate in reviste de specialitate fara cotaie ISI:**

Anul	Titlul lucrarii stiintifice	Autori
2004	Evaluarea cantitativa a alterarilor tisulare induse de conditii ischemice, – Editura Printech, 2004, ISBN 973-718-118-2	M.Gheorghiu
2006	"Characterization of Langmuir Blodgett Films from some new phtalocyanines derivatives", „Analele Universitatii Bucuresti Chimie" 2006	A.Dragan, O.Cinteza, V.Magearu

5.2 Lucrari stiintifice prezentate la conferinte internationale cu comitet de program

Nr Crt.	Comunicare	Conferinta	Autor Institutul
2007			
1	Dielectric modeling and nonlinear time series analysis of biological systems "Monitoring cellular systems by Dielectric Spectroscopy; appraisal of membrane potential and shape factors"	MEETING THE CHALLENGES OF THE 21ST CENTURY - NOVEL APPLICATIONS OF BROADBAND DIELECTRIC SPECTROSCOPY", NATO ADVANCED RESEARCH WORKSHOP. SUZDAL, RUSSIA. JULY 2007	Eugen Gheorghiu Invited lecturer
2	Biological characterisation of nano-patterned bio-surfaces using timebased impedance spectroscopy	ESF – EMBO Symposium Probing interactions between nanoparticles/biomaterials and biological systems – alternative approaches to bio-toxicity Sant Feliu de Guixols (Costa	Mihaela Gheorghiu Sorin David, Cristina Polonschii, Eugen Gheorghiu (oral)

		Brava) Spain 3-8 Noiembrie 2007	
3	DETECTION OF TOXINS AND PATHOGENS IN LIQUID SAMPLES	3rd International Symposium on RECENT ADVANCES IN FOOD ANALYSIS Prague, Czech Republic 7-9 Nov 2007	(oral)
4	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 (Costa Brava) Spain 22-27 September 2007	<u>Mihaela Gheorghiu</u> , Sorin David, Cristina Polonschii, Eugen Gheorghiu
5	Assessment of bio-interfaces using time based differential impedance spectroscopy		Mihaela Gheorghiu, Sorin David, Cristina Polnoschii, Dumitru Bratu <u>Eugen Gheorghiu</u>
6	Assessment of fish behavior and water quality by monitoring and time series analysis of fish dynamics	ECI XII XII EUROPEAN CONGRESS OF ICHTHYOLOGY Cavtat (Dubrovnik), Croatia 9–13 September 2007	Gheorghiu E., Bratu D., Polonschii C. Gheorghiu M.
7	Sensing the cell-substrate interaction towards development of “smart” surfaces		M. Gheorghiu, S. David, A. Ursu E. Gheorghiu

8	MULTI FREQUENCY, MULTI CHANNEL, DIFFERENTIAL IMPEDANCE ANALYZER FOR RAPID ASSAYS	The 13th International Conference on Electrical Bioimpedance & The 8th Conference on Electrical Impedance Tomography ICEBI 07, Graz, Austria, 29.08.2007	Cristina Polonschii, Dumitru Bratu Eugen Gheorghiu
9	Appraisal of cellular systems using impedance spectroscopy – theoretical and experimental aspects		Eugen Gheorghiu
10	Dual SPR-Impedance Measurement System for detection of bioaffinity interactions		<u>Sorin David</u> , Mihaela Gheorghiu, Cristina Polonschii and Eugen Gheorghiu
11	Nonlinear Analysis of Cell Cycle	Chaos and Nonlinear Dynamics: Advances and Perspectives A conference celebrating the 60th birthday of Celso Grebogi 17–21 September 2007, Aberdeen, UK	Eugen Gheorghiu
12	Biosensing and controlled interaction with cellular systems via structured interfaces	Vlth European Biophysics Congress Imperial College Londra, UK, 14 - 18 Iulie 2007	Mihaela Gheorghiu, Sorin David, Cristina Polonschii, Dumitru Bratu, Eugen Gheorghiu
13	Biosensing via structured interfaces at nanoscale	Biosurf VII Functional Interfaces for Directing Biological Response, Zurich, Elvetia, 29-31 August 2007	Mihaela Gheorghiu, Sorin David, Cristina Polonschii, Dumitru Bratu, Eugen Gheorghiu
14		Conferinta Nationala de Biofizica,	Mihaela Gheorghiu, Sorin David, <u>Cristina</u>

		Mai Bucuresti, Romania	<u>Polonschii</u> , Dumitru Bratu, Eugen Gheorghiu
15	“Assessment of interfacial changes due to bioaffinity interactions using a combined, multichannel SPR-Impedance Measurement System”,	International Symposium, Molecular Plasmonics , 10-12 May Jena, Germany 2007	Mihaela Gheorghiu, Sorin David, <u>Cristina Polonschii</u> , Dumitru Bratu, Eugen Gheorghiu
2006			
16	BioDynamicsensing Sensing through dynamics of (bio)interfaces or/and cellular platforms	Workshop on Physics of Sensors and Detection Systems Ispra, 6 th -7 th December 2006	Eugen Gheorghiu
17	Pitfalls in Revealing Fine Interfacial Processes using SPR Assays	Solid/Fluid Interfaces Universitätszentrum Oberurgl, Austria, 9-14 September 2006	Cristina Polonschii
18	Revealing cellular effects of different stimuli by impedance spectroscopy: Theoretical and Experimental Aspects	Lector invitat Montpellier 04december2006	Eugen Gheorghiu
19	New avenues, “hot topics” in Biodynamicsensing		Mihaela Gheorghiu
20	Potential in the field of Biosystem analysis and Biosensing	Balkan Medicine towards FP7 May 4-5, 2006 Bucharest, Romania Chamber of Commerce and Industry of Romania	Eugen Gheorghiu
	“Biodynamicsensing, Sensing		

21	through dynamics of (bio)interfaces & cellular platforms”	<p style="text-align: center;">International Conference Biosensing and Biodynamics: From Basics to Applications 18-21 May 2006 ICBB 2006</p>	Eugen Gheorghiu
22	“The effect of cadmium on the EpithelialNa ⁺ Channel(ENaC) from kidney cells”		Daniela Cucu
23	Imaging mitochondrial and cytosolic pH in living MDCK cells subjected to metabolic inhibition”		Corina Balut
24	New avenues, “hot topics” in Biodysensing		Mihaela Gheorghiu
25	“Mitochondrial pH changes in MDCK cells subjected to metabolic inhibition observed with one-photon confocal microscopy”	<p style="text-align: center;">Biophysical Society Meeting, Salt Lake City, USA, Feb. 18-22, 2006</p>	<p style="text-align: center;">C.M. Balut, M. vandeVen, I. Smets, M. Ameloot, P. Steels</p>
26	“Imaging mitochondrial and cytosolic pH in living MDCK cells subjected to metabolic inhibition”	<p style="text-align: center;">Keystone Symposia – Metabolomics: Bioenergetics to Apoptosis, Snowbird, Utah, USA, April 2-7, 2006</p>	<p style="text-align: center;">C.M. Balut, M. vandeVen, I. Smets, M. Ameloot, P. Steels</p>
2005			
27	Biosensing platforms using Dielectric Assays	<p style="text-align: center;">EERSS Program NUS, Oct. 2005,</p>	Eugen Gheorghiu
28	On the electrode related problems in bioimpedance measurements		Mihaela Gheorghiu
29	“How membrane cholesterol depletion regulates Na ⁺ transport in A6 renal epithelial cells”	<p style="text-align: center;">American Society of Nephrology – Renal Week, Philadelphia, Pennsylvania, USA, Nov</p>	<p style="text-align: center;">C.M. Balut, D. Jans, W. Van Driessche,</p>

		10-13, 2005	P. Steels
30	Assessment of Cell Cycle by Chaos theory	<p align="center">CSCS-15 15th INTERNATIONAL CONFERENCE ON CONTROL SYSTEMS AND COMPUTER SCIENCE May 25-27, 2005 POLITEHNICA University of Bucharest</p>	Eugen Gheorghiu
31	Membrane cholesterol extraction attenuates Na ⁺ transport activation in A6 renal epithelia	<p align="center">Fall meeting of the Belgian Physiological Society, Antwerp, Belgium, November 19, 2005</p>	C.M. Balut, P Steels, W Van Driessche, D Jans
32	Anti-angiogenesis effect of Somatostatin/analogues: case study – hepatocellular carcinoma	<p align="center">Novartis Young Investigator Meeting, Barcelona, Spain</p>	Mihaela Gheorghiu
33	Membrane cholesterol as modulating factor of ion transport in renal epithelial cells”	<p align="center">International Conference on Aquaporins, Genval, Belgium, September 10-13, 2005</p>	C.M. Balut, D. Jans, W. van Driessche, P. Steels
2004			
34	Biosensor analysis by impedance/dielectric spectroscopy	<p align="center">Seminar presented at NUS -26 April 2004 -19 April 2004</p>	Eugen Gheorghiu
35	Revealing Cellular Properties by Impedance Spectroscopy and Time Series Analysis– theoretical and practical aspects		
36	Analyte Detection Using Differential Impedance Measurement		

37	“Impedance spectroscopy interrogation of modified sensors for immuno-sensing”	XII International Conference on Electrical Bioimpedance & V Electrical Impedance Tomography, Gdansk, 2004	M. Gheorghiu, S. David, D. Bratu, E. Gheorghiu
38	“IS on single cells: from modeling to fitting real data”		
39	Pot fi competitive Centrele de Cercetare din România? Un posibil răspuns ilustrat de Centrul Internațional de Biodinamică	Conferința „MIGRAȚIA TINERILOR CERCETĂTORI ROMÂNI - PERFORMANȚE ȘI CĂI DE ÎNTOARCERE 2004	Eugen Gheorghiu
40	Studiul canalului epitelial de Na ⁺ prin metode electrofiziologice: interacțiunea cu Ni ²⁺		Daniela Cucu
41	Modeling biosystems – facts and perspectives !! Understanding the dynamics of the interfacial processes – towards improving the biosensor analysis	WORKSHOP ON FUTURE NETWORKING BETWEEN UNESCO-AFFILIATED LIFE SCIENCES RESEARCH CENTRES IN EASTERN AND CENTRAL EUROPE, Paris, France 2004	Mihaela Gheorghiu
42	Biosensor analysis by impedance/dielectric assay		Sorin David
43	Role of lipids environment on ion exchange in cell membranes		Corina Balut
44	Investigating Cellular Systems by Impedance Spectroscopy and Time Series Analysis: theoretical & practical		Eugen Gheorghiu

	aspects		
45	Impedimetric approach for detection of target analytes: from low molecular weight contaminants to living cells	The Eighth World Congress on Biosensors 24-26may2004 Granada, Spain	M. Gheorghiu, S. David and E. Gheorghiu
46	Time based differential impedance spectroscopy an effective method for biosensor analysis		E. Gheorghiu, D. Bratu, S. David, M. Gheorghiu
47	Single cell monitoring: from theory to experimental evidence	Symposium on Biodynamics & Bioanalysis, Bucharest, September 2004	Eugen Gheorghiu
48	Quantitative Analysis Of Blood Cells		Corina Balut
49	Affinity Biosensing		Mihaela Gheorghiu
50	Towards a non invasive assay to monitor single cells by impedance/dielectric spectroscopy	SPIE Conference Dec 2004	Eugen Gheorghiu
51	“Towards a distributed system to monitor / assess drinking water quality: detection of pathogen microorganisms and toxins using a novel impedimetric assay on biosensors”	Technological and Scientific Conference Compliance with UE requirements of water supply and sewage systems, Bucharest 2004	M. Gheorghiu, S. David, D. Bratu, E. Gheorghiu
52	“Membrane Cholesterol Depletion in A6 cells depresses activated sodium transport and elicits a transient chloride secretion during a hypotonic shock”	American Society of Nephrology – Renal Week, St Louis, Missouri, USA, Oct. 28-Nov 1st, 2004	P. Steels, D. Jans, W. van Driessche, C.M. Balut
52	Total		

5.3 : Modele fizice, modele experimentale, modele funcționale, prototipuri, normative, proceduri, metodologii, reglementări și planuri tehnice noi sau perfecționate, realizate în cadrul programelor naționale sau comandate de beneficiar

Nr. Crt.	Proiect Contract	Numarul contractului/Anul	Rezultat
2004			
1.	Monitorizarea on-line a concentrației de <i>Lactobacillus plantarum</i> în procesele fermentative	01-7-CPD-095/2001	Dezvoltarea unei noi metode de analiza și a echipamentelor de masura aferente, pentru controlul automat al proceselor de fermentație lactică, prin monitorizarea continuă, on-line, a concentrației de celule vii în suspensie Metoda și dispozitiv de monitorizare a proceselor biotehnologice prin determinarea online a concentrației de celule
2.	Biotech-sterist Procedeu de evaluare rapidă a purității microbiologice în biotehnologii	034-PED-3344/2003	Metoda analitică de control al sterilizării utilizând măsurători de spectroscopie
2005			
3.	CERES-membrane Rolul organizării și dinamicii membranelor asupra comportării sistemelor celulare și al răspunsului acestora la stimuli externi.	338/2004	Metoda rapidă de analiza a modificărilor induse de radiațiile ionizante la nivelul membranelor celulare
4.	CERES-ciclu celular Metoda de evaluare a efectelor dozelor mici de radiații asupra progresiei pe ciclu celular	3-132/2003	Metoda de evaluare a efectelor dozelor mici de radiații asupra progresiei pe ciclu celular
2006			
5.	Laborator mobil de analiza apei (control microbiologic, contaminarea cu metale) în acord cu directivele europene AQUALAB	286/2006	Metoda de detecție încărcatură microbiană totală prin luminometrie Obiectiv: Validarea metodei și realizarea curbelor de calibrare specifice
6.			Metoda de detecție a metalelor grele prin Voltametrie de Stripping Anodic (ASV) Obiectiv: Realizarea testelor de validare ale metodei

6. Prestigiul profesional

6.1 Membri (incluzand statutul de recenzor) in colectivele de redactie ale unor reviste (cotate ISI sau incluse in baze de date internationale) sau in colective editoriale ale unor edituri internationale recunoscute.

NR. CRT.	NUME PRENUME	TITLUL REVISTEI/ EDITURII
1.	CSI Dr.Eugen Gheorghiu	Analytical Chemistry
		Lab on Chip
		Bioelectrochemistry
		Biosensors & Bioelectronics
		Analyst
		Journal of Non-Crystalline Solids
		Journal of Physics: D
		Physiological Measurement

6.2 Membri in colectivele de redactie ale revistelor recunoscute national (din categoria B in clasificarea CNCSIS)

NR. CRT.	NUME PRENUME	TITLUL REVISTEI/EDITURII
1.		

6.3 Premii internationale obtinute printr-un process de selectie

NR. CRT.	NUME PRENUME	PREMIUL	ANUL
1.	E. Gheorghiu, M. Gheorghiu, CM. Balut, D. Bratu	Medalie argint "Method to pinpoint the presence of some analytes in liquid solutions"; World Exhibition of Innovation, Research and Technology, EUREKA, Brussels 2004	2004

6.4 Premii nationale ale Academiei Romane

NR. CRT.	NUME PRENUME	PREMIUL	ANUL
1.	Eugen Gheorghiu	Premiul pentru Fizica "Stefan Procopiu" al Academiei Romane	1995

6.5 Conducatori de doctorat , membrii ai unitatii de cercetare

NR. CRT	Nume Prenume
1.	CSI Dr.Eugen Gheorghiu

6.6 Numar de doctori in stiinta, membrii ai unitatii de cercetare

Numar de doctori in stiinta: 7

- 1.CSI Dr.Eugen Gheorghiu
- 2.Dr.Mihaela Gheorghiu
- 3.Dr.Daniela Cucu
- 4.Dr.Szilveszter Gaspar
- 5.Dr.Corina Balut
- 6.Dr.Titus Sandu
- 7.Dr.Daniel Andreescu

7. Venituri realizate prin contracte de cercetare in domeniul pentru care se face evaluarea:

7.1: Numarul si valoarea contractelor de cercetare internationale finantate din fonduri publice:

Nr.crt	Contract					Total valoare	
		2004	2005	2006	2007	Lei	euro
1.	G6RD-CT-2000-00420	16154				16154	124040
2.	ROBIOS INCO-CT-2005-017464		1582126			1582126	455000
3.	RO-CHARPAN			41259	133800	175059	48645
Total		16154	1582126	41259	133800	1773339	627685

7.2 Numarul si valoarea contractelor de cercetare internationale finantate din fonduri private: 0

7.3 Numarul si valoarea contractelor de cercetare nationale finantate din fonduri publice:

Nr. Crt	Contract					Total valoare
		2004	2005	2006	2007	Lei
PNCDI						
1.	Biotech 01-7-CPD-095/2005	48970				48970
2.	Biotech 01-7-CPD-096/2006	50190				50190
3.	Biotech 034PED-3344/2003	81420	90250			171670
4.	Ceres 3-133/2003	79030	92650			171680
5.	Ceres 3-132/2003	49050	89810			138860
6.	Ceres 4-70/2004	10000	37000	63000		110000
7.	Ceres 4-211/2004	14500	40000	80500		135000
8.	Agral 373/2004	10365	32310	92325		135000
9.	Agral 337/2004	5448	54842	79710		140000
10.	Calist 5113/2004	2805	31782	50413		85000
11.	Matnantech 256/2004	29100	40000	50900		120000
12.	Invent 152/2004	6400	39400	61600		107400
13.	Invent 153/2004	5000	50000	70000		125000
Total PNCDI		392278	598044	548448	0	1538770
CEEX						
14.	Viasan 60/2005		293000	136200	584300	1013500
15.	Viasan 89/2006				180000	180000
16.	Biotech 74/2006				60000	60000
17.	Biotech 155/2006				325000	325000
18.	Agral 54/2006			90000	290000	380000
19.	UEFISCSU 1461/2006			50000	70000	120000
20.	UEFISCSU 1455/2006			65000	75000	140000
21.	UEFISCSU 1479/2006			69000	69000	138000
22.	UEFISCSU 5900/2006			50000	80000	130000
23.	Renar 286/2006			550000	250000	800000
24.	AMCSIT 199/2006			170000	100000	270000
Total CEEX		0	293000	1180200	2083300	3556500
25.	Grant 111/2007	0	0	0	100000	100000
Total Contracte Nationale		392278	891044	1728648	2183300	5195270

7.4 Numarul si valoarea contractelor de cercetare nationale finantate din fonduri private:

7.5 Alte surse:

Comisia Europeana	euro	704895
Surse proprii	lei	196702

7.bis Venituri realizate din activitati economice: 0

8. Resursa umana de cercetare

8.1 Total personal de cercetare care realizeaza venituri din activitatea de cercetare/din care doctori in stiinta:

	2004	2005	2006	2007	Numar mediu
8.1.1 Cercetatori stiintifici gradul I din care : doctori in stiinta	2	2	2	2	2.00
	2	2	2	2	2.00
8.1.2 Cercetatori stiintifici gradul II din care : doctori in stiinta	2	2	2	1	1.75
	2	2	2	1	1.75
8.1.3 Cercetatori stiintifici gradul 3 din care : doctori in stiinta			1	2	0.75
			1	2	0.75
8.1.4 Cercetatori stiintifici din care : doctori in stiinta	3	4	3	3	3.25
		1			0.25
8.1.5 Asistenti de cercetare			3	4	1.75
8.1.6 Total personal auxiliar de cercetare angajat	3	2	3	3	2.75
Total personal de cercetare din care: doctori in stiinte	10	10	14	15	12.25
	4	5	5	5	4.75
Total personal de cercetare din care : doctori de stiinte					12.25
					4.75

8.2 Date privind perfectionarea resursei umane

8.2.1. Numar de doctoranzi si masteranzi care lucreaza in unitatea de cercetare la data completa 3

8.2.2 Numar teze de doctorat realizate in unitatea de cercetare-dezvoltare in perioada pentru care se face evaluarea:

2004	2005	2006	2007	TOTAL
1				1

9. Infrastructura de cercetare-dezvoltare

9.1 Laboratoare de cercetare – dezvoltare

Nr. Crt	Denumire laborator	Domeniul
1.	Laborator microscopie	Fizica aplicata (fizica suprafetelor)
2.	Laborator determinari SPR	Fizica aplicata (fizica suprafetelor)
3.	Laborator dezvoltare platforme senzoristice bioafine si celulare	Chimie analitica si biofizica
4.	Laborator electrochimie si spectroscopie de impedanta	Chimie fizica si inginerie electrica
5.	Laborator electrofiziologie	Electrofiziologie
6.	Laborator culturi celule	Biologie
7.	Laborator de modelare si analiza date	Fizica
8.	Laborator dezvoltare prototipuri(module de analiza electrochimica)	Electronica

Punctaj Autoevaluare

<i>4. Criterii primare de performanta</i>			
4.1 Lucrari stiintifice/tehnice publicate in reviste de specialitate cotate ISI			
	numar	factor imp.	punctaj
4.1.1. Numar de lucrari stiintifice	23	30	690
4.1.2. Punctaj cumulate ISI	76.807	5	384.035
4.1.3. Numar de citari in reviste de specialitate cotate ISI	177	5	885
Total punctaj cap 4.1			1959.035
4.2 Brevete de inventie			
4.2.1 Numar de brevete	4	30	120
4.2.2 Numar de citari de brevete in sistemul ISI		5	0
Total punctaj cap 4.2			120
4.3 Produse si tehnologii rezultate din activitati de cercetare , bazate pe brevete,omologari,sau inovatii proprii			
4.3.1 Numar de produse, tehnologii,studii, servicii		20	0
Total punctaj cap 4.3			0
<i>Total punctaj capitol 4:</i>			<i>2079.035</i>
<i>5.Criterii secundare de performanta</i>			
5.1 Lucrari stiintifice/tehnice publicate in reviste de specialitate fara cotatione ISI			
	numar	factor imp	punctaj
5.1.1 Numar de lucrari stiintifice	2	5	10
Total punctaj cap 5.1			10
5.2 Lucrari stiintifice prezentate la conferinte internationale cu comitet de program			
5.2.1 Numar de comunicari prezentate	52	5	260
Total punctaj cap 5.2			260
5.3 Modele fizice ,modele experimentale, modele functionale, prototipuri, normative, proceduri, metodologii, prototipuri, normative, proceduri, metodologii, reglementari si planuri tehnice noi sau perfectionate,realizate in cadrul programelor nationale.			
5.3.1. Numar de modele,normative, proceduri, etc.	6	5	30
Total punctaj cap.5.3			30
<i>Total punctaj capitol 5:</i>			<i>260</i>
<i>6. Prestigiul profesional</i>			
6.1 Membri in colectivele de redactie ale unor reviste (cotate ISI sau incluse in baze de date internationale)sau in collective editoriale ale unor edituri internationale recunoscute Nr.de prezente in perioada pentru care se face evaluarea	4	20	80

6.2 Membri in colectivele de redactie ale revistelor recunoscute national (cat.B) Nr de prezente:		10	0
6.3 Premii internationale obtinute printr-un proces de selectie Nr.de premii	1	20	20
6.4 Premii nationale ale Academiei Romane Nr.de premii	1	20	20
6.5 Conducatori de doctorat,membrii ai unitatii de cercetare Nr de conducatori de doctorat:	1	10	10
6.6 Numar de doctori in stiinta ,membrii ai unitatii de cercetare Nr de doctori in stiinta:	7	10	70
<i>Total punctaj cap 6</i>			200
<i>Total punctaj capitolele 4+5+6</i>			2579.035