

Profesor Ciucu Anton Alexandru

Data nașterii: 30.09.1954

Date de contact: e-mail anton@yahoo.com

Titlul științific: Doctor in Chimie, martie, 1987.

Poziția actuala: Profesor

Domenii de competența:

Dezvoltare de biosensori cu aplicații în diferite domenii (controlul calitatii alimentelor și al poluarii mediului, biochimic, clinic/medical), miniaturizarea acestora în scopul determinărilor/monitorizării *in* și *ex vivo*, realizarea de instrumente bioanalitice portabile pentru detectia unor agenți patogeni. Bioelectroanaliza. Construcția și caracterizarea sensorilor modificați chimic electrocatalitici și ai sensorilor modificați chimic bazați pe biomolecule. Aplicații ale metodelor electrochimice moderne de analiză în caracterizarea sensorilor chimici și biochimici. Metode enzimatiche de analiză - utilizarea enzimelor solubile și imobilizate ca reactivi analitici. Izolarea, purificarea și caracterizarea fizico-chimică a enzimelor.

Activitate didactică: Cursuri predate: Metode instrumentale de analiză (pentru studenții de la Secția de Biochimie a Facultății de Biologie), Enzime în Chimia Analitică, Biochimie analitică, Enzimologie. În cadrul programelor de studii aprofundate (Master) am predat cursurile: Biosensori, Metode enzimatiche de analiză, Bioelectrochimie, Electrozi chimic modificați bazați pe enzime și Metode biochimice în controlul poluarii mediului.

Referent la reviste de specialitate: Analytica Chimica Acta, Biosensors & Bioelectronics.

Evaluator la: Programele Europene Erasmus/Socrates de tip CDA (1998-2000).

Afilieri: Membru al Societății Române de Chimie Analitică; Societatea Română de Electrochimie; Societatea Română de Laborator Clinic; Societatea de Psihiatrie Biologică Română.

Lista articolelor ISI

1. C. Luca, V. Magearu, D. Vîrtosu, **A. Ciucu**, "A Fast Method for the Determination of Catalase and Glucose-oxidase Activities with an Oxygen Electrode", Rev. Roum. Biochim., **20**(1), 29-35 (1983)
2. **A. Ciucu**, C. Luca, D. Vîrtosu, V. Magearu, "Estimation of Initial Rates and Kinetic Parameters K_m and V_{max} for Enzymatic Reactions with Nonlinear Progressive Curves", Rev. Roum. Biochim., **20**(2), 105-110 (1983).
3. **A. Ciucu**, C. Pătroescu, "Fast Spectrometric Method of Determining the Activity of Glucose-oxidase", Anal. Lett., **17**, 1417-1427 (1984).
4. **A. Ciucu**, V. Magearu, C. Luca, "Enzyme Electrode for Hydrogen Peroxide", Anal. Lett., **18**, 299-313 (1985).
5. G. L. Radu, M. Caloianu, **A. Ciucu**, "Characterization by Isoelectric Focusing of Collagen Extracted from Bovine Derma", Rev. Roum. Biochim., **25**(2), 159-164 (1988).
6. **A. Ciucu**, V. Magearu, N. Ciucu, G.L. Radu, "Enzyme Electrode for Glucose", Rev. Roum. Biochim., **26**(1), 9-17 (1989).

7. **A. Ciucu**, "A. New Method for Covalent Binding of Proteins to Dialysis Membrane Activated with 2,4-Dichloro-6-Methoxy-s-Triazine", Rev. Roum. Biochim., **26**(3), 193-200 (1989).
8. **A. Ciucu**, "An Amperometric Study of Physico-Chemical Properties of Glucose-oxidase and Catalase Covalently Immobilized on Dialysis Membrane", Rev. Roum. Biochim., **26**(3), 187-192 (1989).
9. **A. Ciucu**, V. Magearu, C. Luca, "Improved Enzyme Electrode for Amygdalin", Anal. Lett., **22**, 2673-2683 (1989).
10. V. Magearu, **A. Ciucu**, "Contribution to the Achievement of a New Type of Electrochemical Sensor for Oxygen Based on Electrolyte in Non-Aqueous Medium", Anal. Lett., **23**(11), 2005-2010 (1990).
11. **A. Ciucu**, V. Magearu, S. Fleschin, I. Lucaciu, F. David, "Biocatalytical Membrane Electrode for Phenol", Anal. Lett., **24**(4), 567-580 (1991).
12. T. Constantinescu, E. Baron, C. Faraianu, E. Popa, S. Radulescu, L. Vladescu, **A. Ciucu**, S. Ionescu, "Obtaining of Catalase from Mycelium Waste Resulted in the Process of Penicilin G Fabrication", Rev. Chim. (Bucharest), **42**, 38-43 (1991).
13. **A. Ciucu**, R. P. Baldwin, "Determination of 2-Thiothiazolidine-4-carboxylic Acid in Urine by Liquid Chromatography with Electrochemical Detection", Electroanalysis, **4**, 515-519 (1992).
14. A.F. Dăneț, M. Badea, **A. Ciucu**, S. Jipa, "Determination of Mercry(II) by Alcool-oxidase Inhibition in a Flow Injection System with Chemiluminometric Detection", Rev. Chim. (Bucharest), **49**, 25-30 (1998).
15. F. Munteanu, A. Lindgren, J. Emneus, L. Gorton, T. Ruzgas, **A. Ciucu**, E. Csorregi, "Bioelectrochemical Monitoring of Phenols and Aromatic Amines in Flow Injection Using Novel Plant Peroxidase", Anal Chem., **70**, 2596-2600 (1998).
16. A. Lindgren, L. Stoica, T. Ruzgas, **A. Ciucu**, L. Gorton, "Development of a Cellobiose Dehydrogenase Modified Electrode for Amperometric Detection of Diphenols", The Analyst, **124**, 527-532 (1999).
17. C. Nistor, J Emneus, L. Gorton, **A. Ciucu**, "Improved Stability and Altered Selectivity of Tyrosinase Based Graphite Electrodes for Detection of Phenolic Compunds", Anal. Chim. Acta, **387**, 309-326 (1999).
18. T. Noguier, A. Gradinaru, **A. Ciucu**, J.L. Marty, "A New Disposable Biosensor for the Acurate and Sensitive Detection of Ethylenbis (dithiocarbamate) Fungicides", Anal. Lett., **32**, 1723-1738 (1999).
19. A. Lupu, D. Compagnione, **A. Ciucu**, V. Magearu, G. Palleschi, "Fast Amperometric FIA Procedure for Heavy Metal Detection Using Enzyme Inhibition", Anal. Lett., **34**(1), 17-27 (2001).
20. S. Pîrvuțoiu, I. Surugiu, **A. Ciucu**, V. Magearu, B. Danielsson, "Flow Injection Analysis of Mercury (II) Based on Enzyme Inhibition and Thermometric Detection", The Analyst, **126**, 1612-1616 (2001).
21. **A. Ciucu**, C. Negulescu, R. P. Baldwin, "Detection of Pesticides Using an Amperometric

Biosensor Based on Ferrophthalocyanine Chemically Modified Carbon Paste Electrode and Immobilized Bi-enzymatic System", *Biosens. Bioelectron.*, **18**(2-3), 293-300 (2003).

22. F. Ricci, A. Amine, C. S.Tuta, **A. Ciucu**, F. Lucarelli, G. Palleschi, D. Moscone, "Prussian Blue and Enzyme Bulk Modified Screen Printed Electrodes for Hydrogen Peroxide and Glucose Determination with Improved Storage and Operational Stability" *Anal. Chim. Acta*, **458**, 111-120 (2003).

23. J M. Catalá Icardo, M. Misiewicz, **A. Ciucu**, J. V. García Mateo, J. Martínez Calatayud, "Fi-on Line Photochemical Reaction for Rapid Chemiluminescence Determination of Photodegraded Chloramphenicol", *Talanta*, **2-3**, 405-414 (2003).

24. **A. Ciucu**, "Recent Research on Mediated and Direct Electron Transfer Between Redox Enzymes and Electrodes", *Rev. Chim. (Bucharest)*, **56**(2) 121-127 (2005).

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2. **A. Ciucu**, N. Ciucu, G. L. Radu, "Rapid Amperometric Method for Determination of Glucose in Biological Media", *St. Cerc. Biochim.*, **31**(2), 125-128 (1988).

3. G.L. Radu, M. Caloianu, **A. Ciucu**, "Biotechnological Uses of Enzymes Immobilized on Collagenic Support", in *Proceedings of the VIth Symposium of Industrial Microbiology*, V.Topală, ed., Iași, 35-43 (1988).

4. G.L. Radu, **A. Ciucu**, M. Caloianu, "Collagen Supports for Immobilization of Biological Active Products", in *Proceedings of the VIth Symposium of Industrial Microbiology*, V. Topală, ed., Iași, 44-49 (1988).

5. G. L. Radu, M. Caloianu, D. Scripcaru, **A. Ciucu**, "Detection of Collagen Modification upon its Extraction", *St. Cerc. Biochim.*, **32**, 175-177 (1989).

6. C. Mătăchescu, M. Cheregi, D. Moscone, **A. Ciucu**, "Glucose and Lactate Biosensors Coupled with Microdialysis Probe for Continuous Monitoring", *South. Braz. J. Chem.*, **4**, 115-121 (1996).

7. **A. Ciucu**, R. Ionescu, "Clinical Applications of Biosensors", *Rev. Lab. Clin. Med.*, **2**, 4-6 (1998).

8. **A. Ciucu**, C. Negulescu, "Enzymatic Methods for Detection of Some Selected Toxic Compounds", *Rev. Therap. Pharmacol. Toxicol. Clin.*, **5**(2), 33-37, (2001).

9. C. Negulescu, V. Magearu, **A. Ciucu** "The Importance of Cholinesterases in Clinical Toxicological Studies", *Rev. Therap. Pharmacol. Toxicol. Clin.*, **5**(2), 38-44 (2001).

10. **A. Ciucu**, C. Ciucu, L. Gorton, "Amperometric Method Based on Tyrosinase for the Determination of Phenols and Related Pollutants", *Roum. J. Biochem.*, **38**(2), 141-148 (2001).

11. C.Negulescu, C. Ciucu, **A. Ciucu**, "Biosensors' Applications for the Determination of Some

- Pollutants of Toxicological Relevance", Rev. Therap. Pharmacol. Toxicol. Clin., **5**(3), 31-38, (2001).
12. **A. Ciucu**, A. Nica, L. Gorton, "Kinetic Study of Electron Transfer in Reactions Catalyzed by Horseradish Peroxidase Using a Rotating Disk Electrode" Roum. J. Biochem., **38**(2), 195-204 (2001).
 13. **A. Ciucu**, C. Negulescu, "Biosensors for Determination of Some Pollutants with Clinical Importance", Rev. Therap. Pharmacol. Toxicol. Clin., **5**(4), 103-108 (2001).
 14. C. Negulescu, **A. Ciucu**, V. Magearu "Amperometric Biosensor for Choline Determination in Complex Biological Matrices", Rev. Therap. Pharmacol. Toxicol. Clin., **5**(4), 109-117 (2001).
 15. **A. Ciucu**, A. Lupu, S. Pîrvuțoiu, G. Palleschi, "Biosensors for Heavy Metals Determination Based on Enzyme Inhibition", U.P.B. Sci. Bull., Series D, Chem. and Mat. Sci., **63** (4), 33-44 (2001).
 16. **A. Ciucu**, "Progress and Perspectives in Biosensors for Environmental Monitoring", Roum. Biotechnol. Lett., **7**(1), 537-546 (2002).
 17. C. Negulescu, **A. Ciucu**, C. Ciucu, V. Magearu "Amperometric Detection of Some Heavy Ions Metals by Interaction with Selected Oxidases Enzymes" Rev. Therap. Pharmacol. Toxicol. Clin., **6**(1), 68-72 (2002).
 18. C. Negulescu, **A. Ciucu**, "Enzymatic Methods for Detection of Some Heavy Metals with Clinical Relevance" Rev. Therap. Pharmacol. Toxicol. Clin., **6**(1), 73-78 (2002).
 19. **A. Ciucu**, "Bioelectrochemical Methods for Environmental Monitoring", Roum. Biotechnol. Lett., **7**(3), 691-704 (2002).
 20. **A. Ciucu**, C. Ciucu, "Determination of 2-thiouracyl in Complex Samples by Liquid Chromatography with Electrochemical Detection", Roum. Biotechnol. Lett., **7**(4), 847-854 (2002).
 21. **A. Ciucu**, C. Negulescu, "Chemically Modified Amperometric Biosensor for Pesticide Detection", Rev. Therap. Pharmacol. Toxicol. Clin., **6**(2), 103-108 (2002).
 22. **A. Ciucu**, C. Negulescu "Enzymatic Biosensor for Detection of Phenols with Clinical Relevance", Rev. Therap. Pharmacol. Toxicol. Clin., **6**(2), 109-115 (2002).
 23. **A. Ciucu**, R. P. Baldwin, "Electrochemical Detection in Capillary Electrophoresis", Roum. Biotechnol. Lett., **7**(6), 959-974 (2002).
 24. S. Pîrvuțoiu, E. Dey, S. Bhand, **A. Ciucu**, V. Magearu, B. Danielsson, "Application of the Enzyme Thermistor for Determination of Mercury and other Heavy Metals Using Free and Immobilized Alcohol Oxidase", Roum. Biotechnol. Lett., **7**(6), 975-986 (2002).
 25. **A. Ciucu**, A.G. Nica, L. Gorton, "Wall-Jet Peroxidase-Modified Electrode System for Detection of Hydrogen Peroxide", Roum. J. Biochem., **39**(1-2), 55-62 (2002).
 26. C. Negulescu, C. Ciucu, V. Magearu, **A. Ciucu**, "Electrochemical Method for Detection of Acetylcholinesterase Activity in Serum", Rev. Therap. Pharmacol. Toxicol. Clin., **7**(3), 85-89 (2003).
 27. C. Negulescu, V. Magearu, **A. Ciucu**, "Amperometric Method for Pesticides Detection Based on Acetylcholinesterase/cholinoxidase Soluble System", Rev. Therap. Pharmacol. Toxicol. Clin., **7**(3), 90-94 (2003).

28. C. Negulescu, V. Magearu, **A. Ciucu**, "Amperometric Study of Physico-chemical Properties of Covalently Immobilized Acetylcholinestare on Dialysis Membranes Surface", Rev. Therap. Pharmacol. Toxicol. Clin., **7**(4), 50-54 (2003).
29. C. Negulescu, V. Magearu, **A. Ciucu**, "Determination of Pesticides Based on Amperometric Oxygen Electrode and Acetylcholinesterase Covalently Immobilized", Rev. Therap. Pharmacol. Toxicol. Clin., **7**(4), 55-61 (2003).
30. C. Negulescu, V. Magearu, **A. Ciucu**, "Determination of Pesticides Based on a Choline Biosensor", Rev. Therap. Pharmacol. Toxicol. Clin., **7**(4), 62-66 (2003).
31. **A. Ciucu**, C. Negulescu, V. Magearu, "Detection of Pesticides Using an Amperometric Biosensor Based on an Oxygen Electrode and Bi-enzymatic Coimobilizaed System Acethylcholinesterase-Cholinesterase ", Rev. Therap. Pharmacol. Toxicol. Clin., **7**(4), 67-72 (2003).
32. **A. Ciucu**, "Amperometric Biosensor Based on Chemically Modified Carbon Paste Electrode for Pesticides Detection", Roum. J. Biochem., **41**(1-2), (2004) 3-12.
33. **A. Ciucu**, C. Negulescu, V. Magearu "Chemically Modified Biosensor Based on Cobaltphthalocyanine for Pesticides Detection", Rev. Therap. Pharmacol. Toxicol. Clin., **8**(1), 106-111 (2004).
34. A. G. Nica, M. Mascini, **A. Ciucu**, "DNA-Based Biosensor for Detection of Genetically-Modified Organisms", Anal. Univ. Buch. Chem., **I-II**, 85-94 (2004).
35. I.G. Tănase, F. Panțiru (Soare), **A. Ciucu**, "Voltammetric Behavior of Ethylmercury Using Platinum and Glassy Carbon Electrodes", Anal. Univ. Buch. Chem., **I-II**, 125-132 (2004).

Cărți/capitole în țară

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2. **A. Ciucu**, "*Aplicațiile Analitice ale Biosensurilor în Controlul Poluării Mediului*", Editura Ars Docendi, București, 2001, ISBN 973-8118-52-2.
3. **A. Ciucu**, A. Ciobanu, "Metode Chimice si Biochimice de Identificare si Determinare a unor Markeri Biochimici din Tulburarea Depresivă", in "Tulburarea depresiva si anxioasa. Actualitati", D. Marinscu, T. Udristoiu, D. Podea, **A. Ciucu**, Editura Aius Printed, 2008 ISBN 978-973-1780-97-9.

Cursuri publicate (materiale de uz didactic):

1. **A. Ciucu**, "*Biochimie Analitică – Partea I-a*", Editura Universității din București București, 2000, ISBN 973-575-415-0.
 2. **A. Ciucu**, "*Biosensuri-Partea I-a*", Editura Ars Docendi, București, 2000, ISBN 973-568-255-9.
- A. Ciucu**, Ed., "*Biosensors For Environmental Monitoring. A Practical Guide for Students*", Editura Ars Docendi, București, 2000, ISBN 973-8118-24-7.

Brevete, invenții

1. E. Baron, T. Constantinescu, C. Faraianu, E. Popa, S. Rădulescu, L. Vlădescu, **A. Ciucu**, S. Ionescu, "Procedeu de Obținere al Catalazei", Roum. Pat., No. 92899 (1987).

2. G. L. Radu, M. Caloianu, **A. Ciucu**, I. Badea, V. Magearu, "Procedeu de Obținere al Suporturilor Colagenice Drept Suporturi pentru Imobilizari", Roum. Pat., No. 98398 (1989).