CURRICULUM VITAE

First name: Bogdan-Vasile

Name: Mihalcea

Date and place of birth: January 01, 1965, Bucharest

Marriage status: divorced

Profession: Dipl. physics engineer

Occupation: Senior Research Scientist 3 at the National Institute for Laser, Plasma and Radiations Physics (INFLPR), Plasma Physics and Plasma Fusion Dept., Atomiştilor Str. Nr. 409, 077125 Măgurele-Bucharest, Jud. Ilfov.

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Foreign languages spoken: English (fluent), French (fluent), Italian (good), German (satisfactory)

Studies:

- High School of mathematics and physics Nr. 4 (Horia Hulubei), Bucharest, 1979-1983
- Univ. of Bucharest, Faculty of Physics 1984-1989, Technological Physics, **Master of Science in Physics (Measurement and Control Devices)**. Average mark: 9, 84. Diploma thesis: "Electronic system for thermostating the Hydrogen maser", Univ. of Bucharest (1989).
- Institute of Atomic Physics (IFA), Bucharest, Ph. D. in Plasma Physics since March 1998. Ph.D. thesis: "*Contributions to the study of the transition from chaos to order in rarefied microplasmas* " (IFA, Dec. 1997). Ph. D. Supervisor: Prof. Dr. Viorica Gheorghe, the leading person on ion trapping in Romania, the person who actually founded the ion trapping group in INFLPR
- CCNA - Cisco Certified Network Associate (Dec. 2002) valid through Dec. 2005

Professional background

- Physics engineer at "Romlux" Târgovişte (electrical bulbs factory), through government decision, during September 1989 - February 1990 and then at INFLPR (former IFTAR), in the "Atomic Clock" research group since March 1, 1990.
- Scientific researcher at IFTAR, starting with March 1, 1991.
- Senior research scientist 3 at INFLPR (former IFTAR) since June 1996
- Ph. D. in Plasma Physics awarded in March 1998
- List of papers attached

Fields of specialization

- Main: Ion trapping physics, atomic time-frequency standards, measurement and control devices (applied electronics), plasma physics
- Other: Quantum mechanics, classical and quantum optics, differential systems theory, chaos theory

Professional record and experience

- Network administrator (2001-June 2004), with 3 years of experience at the current workplace.
- Very good knowledge of computer hardware and operating systems such as: Linux (Debian and its flavours *e.g.*, Aptosid and Ubuntu plus openSUSE, RedHat, Mandriva), UNIX (FreeBSD both server and desktop applications, NetBSD) and Windows
- Skills in Maple, Matlab and Mathematica for engineering and numerical analysis
- Web servers (Apache) and mail servers (Postfix), firewalls and intrusion detection
- Digital and linear electronics design such as:
  1. Switched mode power supplies - SMPS
  2. Frequency synthesis in the RF and low frequency microwave range
  3. Current sources
  4. Frequency control of a professional crystal oscillator by an atomic transition with a high quality factor
  5. Mixt, high-voltage power supplies

6. Automatic regulators (PD and PID), temperature-voltage and current-voltage converters
7. electronic system for thermostating of the hydrogen maser

- Knowledge of C,C++ programming and FORTRAN. Basic knowledge of Pascal.
- Very good knowledge and solid experience in text editing (TeX or LaTeX) as well as OpenOffice and Microsoft Office, CAD (QCAD, Eagle, kicad), numerical and analytical computer simulation programs (MathCAD), etc.

Didactical record

- Collaborator (1987-1989) of the Electronics Dept. from the Faculty of Physics, Univ. of Bucharest.
- Associate Assistant of the Electronics Dept. from the Faculty of Physics, since 1994, teaching "Electronic Devices and Circuits".
- Associate Lecturer of the Electronics Dept. from the Faculty of Physics, 1998-2000, teaching "Electronic Devices and Circuits".

Scientific record

Due to the fact that the "Atomic Clock" research team from INFLPR was until recently the only one in Romania which focused on researches performed towards ion trapping physics and atomic time-frequency standards, the research activity was targeted on the following main directions:

- Ion trapping in ultrahigh vacuum conditions of Ba^+ ions in quadrupole Paul traps
- Microplasma generation in electromagnetic fields (new trap geometries, design and realization of d.c and high voltage a.c. power supplies; design and production of miniaturized setups, both quadrupole and linear multipole geometry for charged microparticle trapping in air)
- Classical and semiclassical study of the dynamics of trapped ions and microparticles generated in electromagnetic fields and of the chaotic and regular motion regimes, both analytically and numerically (computer simulation)
- Preliminary researches aimed on realizing an atomic time-frequency standard based on laser-cooled trapped ions
- Active Hydrogen maser (design and realization of the thermostating electronic system, frequency dividers and synthesizers both in the RF and microwave range, power supplies, current sources, frequency stability measurements)

- Electronic systems related to the above (frequency synthesis, electronic phase lock systems for driving professional quartz oscillators, electronic regulators, linear and switched-mode power supplies, current sources, etc.)

Referee for:

1. Journal of Physics B
2. Physica Scripta
3. Romanian Journal of Physics

Bogdan Mihalcea

LIST OF PAPERS

ARTICLES AND PAPERS

1. L. Giurgiu, B. Mihalcea, M. Dincă, *On the parasitic modulation of the maser frequency by the heating current intensity*, Rev. Roum. de Phys., Tome **37**, No. 5, p. 465 - 471 (1992), ISSN: 0035-4090

2. Viorica Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, *On the stored ion diagnosis*, Invited Paper, Analele St. Univ. Al. I. Cuza Iaşi, **Tom XL-XLII**, s.I.c. Fizica Plasmei, 1994-1996, p. 145-149

3. O. Gheorghiu, B. Mihalcea, D. Cacicovschi, L. Giurgiu, A. Niculescu , *The M8 and M9 masers as the National Frequency Standard at the Natl. Inst. of Metrology-Bucharest*, Suppl. of the Balkan Phys. Letters, vol. **2**, part two, p. 1142-1147 (1994)

4. V. Gheorghe, L. C. Giurgiu, B. M. Mihalcea, D. M. Cacicovschi and O. G. Stoican, *A single macroparticle in an electromagnetical trap*, Suppl. of the Balkan Phys. Lett., vol. **2**, part two, p. 1120-1122 (1994)

5. V. Gheorghe, L. Giurgiu, D. Cacicovschi, B. Mihalcea, O. Stoican, *Modified Paul trap geometry for microplasmas*, SPIE Journal, vol. **2461**, p. 534 -538 (1995), Publisher: SPIE – Int. Soc. Optical Eng. ISBN: 0-8194-1813-7, http://dx.doi.org/10.1117/12.203474

6. V. Gheorghe, L. Giurgiu, O. Stoican, D. Cacicovschi, R. Molnar and B. Mihalcea, *Ordered structures in a variable length a. c. trap*, Acta Physica Polonica A, vol. **93**, Nr. 4, p. 1105-1109 (1998), ISSN: 0587-4246

7. B. Mihalcea, C. M. Niculae and Viorica Gheorghe, *On the multipolar electromagnetic traps*, Rom. J. Phys., vol. **44**, Nr. 5-6, p. 543-550 (1999)

8. O. Stoican, B. Mihalcea, and V. Gheorghe, *Miniaturized trapping setup with variable frequency*, Rom. Rep. in Phys., Vol. **53**, Nr. 3-8, p. 275-280 (2001)

9. B. Mihalcea and O. Stoican, *Microparticle dynamics in a nonlinear electromagnetic trap*, Rom. J. Phys., vol. **47**, Nos. 5-6, p. 597-605 (2002)

10. C. Mandache, O. Gheorghiu, T. Acsente, B. Mihalcea, O. Stoican, A. Niculescu and L. Giurgiu, *Frequency standards and time metrology in Romania*, Proc. of the 2004 IEEE International Frequency

Control Symposium and Exposition, AUG 23-27, 2004 Montreal, Canada, Pages: 693-697 Published: 2005, **ISSN:** 1075-6787, **Print ISBN:** 0-7803-8414-8, DOI: 10.1109/FREQ.2004.1418547

11. Bogdan M. Mihalcea, Gina Vişan, Liviu Giurgiu and Ştefan Rădan, *Optimization of ion trap geometries and of the signal-to-noise ratio for high resolution spectroscopy*, J. of Optoelectronics and Advanced Materials, Vol. **10**, No. 8, p. 1994-1998 (2008), **ISSN:** PRINT**:** 1454 - 4164

12. B. M. Mihalcea, *Quantum parametric oscillator in a radiofrequency trap*, Phys. Scr. **T 135** (2009) 014006, DOI: 10.1088/0031-8949/2009/T135/014006,

http://iopscience.iop.org/1402-4896/2009/T135/011003

13. Bogdan M. Mihalcea, *Nonlinear harmonic boson oscillator*, Phys. Scr. **T140** (2010) 014056, DOI: 10.1088/0031-8949/2010/T140/14056, http://iopscience.iop.org/1402-4896/2010/T140

14. Bogdan M. Mihalcea and Gina Vişan, *Nonlinear Ion Trap Stability Analysis*, Phys. Scr. **T140** (2010) 014057, DOI: 10.1088/0031-8949/2010/T140/14057, http://iopscience.iop.org/1402-4896/2010/T140

15. Bogdan M. Mihalcea, *Semiclassical dynamics for an ion confined within a nonlinear electromagnetic trap*, accepted for publication in Physica Scripta T

PREPRINTS

1. V. Gheorghe, B. Mihalcea, A. Gheorghe, *Quantum chaos in an ion nonlinear trap*, Preprint FT-431-1997, October 1997, Institute of Atomic Physics (I.F.A.), Bucharest

2. V. Gheorghe, B. Mihalcea, A. Gheorghe, *Bifurcations of a two-ion system*, Preprint FT-432-1997, October 1997, Institute of Atomic Physics (I.F.A.), Bucharest

CONFERENCE PROCEEDINGS

1. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, G. Pavelescu, O. Gheorghiu, *An arc discharge for optical pumping of Barium stored ions*, Proc. of the XXI ICPIG , Ruhr Univ. Bochum, Germany, 19-24 Sept.1993, p. 231 – 232, Publisher Arbeitsgemeinschaft Plasmaphysik (APP), Eds. G. Ecker, U. Arendt, J. Böseler, Poster presentation

2. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, *On the stored ion diagnosis*, 8-th Conf. on Plasma Physics and Applications, Iasi, May 1994, Book of abstract, p. 36, Invited paper

3. L. Giurgiu, O.Stoican, D.Cacicovschi, B.Mihalcea, V.Gheorghe, *An optical bridge for stored ion diagnosis*, Technical Digest of the 1994 5-th EQEC Conference, Amsterdam, Holland, Aug. 28-Sept. 2 (1994), p. 53-54, IEEE Catalog Number 94TH0615-5, ISBN: 0-7803-1791-2, Poster presentation

4. O. Gheorghiu, B. Mihalcea, D. Cacicovschi, L. Giurgiu, A. Niculescu, *The M8 and M9 masers as the National Frequency Standard at the Nat. Inst. of Metrology-Bucharest*, Progr. of the General Conf. of the Balkan Phys. Union, p. 58, Sept.1994, Izmir, Turkey, Poster presentation

5. V. Gheorghe, L. Giurgiu, B. Mihalcea, D. Cacicovschi, O. Stoican, *A single macroparticle in an electromagnetical trap*, Progr. of the General Conf. of the Balkan Phys. Union, p. 58, Sept.1994, Izmir, Turkey, Poster presentation

6. V. Gheorghe, L. Giurgiu, D. Cacicovschi, B. Mihalcea, O. Stoican, *Modified Paul trap geometry for microplasmas*, Progr. of the ROMOPTO'94, 4 - th Conference in Optics, Bucharest, Sept. 1994, p. 30, Poster presentation

7. O. C. Gheorghiu, L. C. Giurgiu, B. M. Mihalcea, D. M. Cacicovschi, A. Niculescu, *The M8 and M9 masers as the National Frequency Standard at the Natl. Inst. of Metrology - Bucharest*, Proc. of the 9-th European Frequency Time Forum, Besancon, France, March 1995, p. 397-399, Poster

8. O. Stoican, D. Cacicovschi, B. Mihalcea, Liviu C. Giurgiu, Viorica Gheorghe, *On the macroscopic charged particle storage in a.c. low frequency field*, XII - th Int. Conf. on Phenomena in Ionised Gases, ICPIG'95, New Jersey (1995), Poster

9. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, S.Comanescu , *Linear microparticle trap operating in air*, Conf. Digest of the CPEM'96 Conference, Braunschweig, Germany, June 1996, p. 304-305, Poster presentation

10. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, S. Comanescu, *On the microparticle strings in a linear air trap*, Proc. of the 28-th EGAS Conf., Graz, Austria, 24-26 July 1996, p. 444-445, Poster presentation

24. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, S.Comanescu , *Parametrical excitation in a linear air trap*, Proc. of the 6-th EQEC Conf., Hamburg, Sept.1996, p. 112-113, Poster presentation

25. V. N. Gheorghe, B. M. Mihalcea and A. Gheorghe, *Ion stability in laser fields and anharmonic RF potentials*, EGAS 97 Conference Abstracts, p. 427 (1997), Poster presentation

26. V. N. Gheorghe, B. Mihalcea and A. Gheorghe, *Quantum ion dynamics in a nonlinear trap*, European Group for Atomic Spectroscopy (EGAS) 97 Conference Abstracts, p. 428-429 (1997)

27. V. N. Gheorghe, B. Mihalcea and A. Gheorghe, *Evolution operators for ordered trapped ion systems*, EGAS 97 Conference Abstracts, p. 430-431 (1997), Poster

28. Viorica N. Gheorghe, B. M. Mihalcea and A. Gheorghe, *Ion dynamics in a nonlinear Paul trap*, Proc. of the 6-th ECAMP Conf., vol. 22D, Siena, Italy, 14-18 July 1998, p. VI-11

29. B. M. Mihalcea, Viorica N. Gheorghe and A. Gheorghe, Chaotical behaviour of two stored ions, Proc. of the 6-th ECAMP Conf., vol. 22D, Siena, Italy, 14-18 July 1998, p. VI-19

30. Viorica Gheorghe, O. Stoican, D. Cacicovschi, B. Mihalcea and R. Molnar, On the microplasmas optical pumping methods, 17-th Gen. Conf. of the Turkish Physical Society, Alanya, Turkey, 27-31 October 1998, p. 59

31. B.Mihalcea and O. Stoican, *Microparticle trapping in multipolar electromagnetic traps,* Fourth General Conference of the Balkan Physical Union BPU-4, Veliko Turnovo, 22-25 August 2000

32. B. Mihalcea and O. Stoican, *Multipolar trap geometry for trapped particles,* 1st Hellenic-Turkish International Physics Conf., Bodrum, Turkey, 10-15 Sept. 2001

33. M. Ganciu, V. Zoița, A. Groza, A. Surmeian, B. Mandache, B. Mihalcea, F. Gherendi, Th. Julea, I.I. Popescu, M. Apostol, M. Mirea, A. Răduță, Fast pulsed X-Ray sources for isomer triggering studies, Invited paper, Intl. Gamma Ray Workshop, Private communication, Telluride, SUA, 29-31 May 2001

34. B. Mihalcea and O. Stoican, *Microparticle dynamics in a multipolar electromagnetic trap,* Proc. of the XI-th International Conference on Plasma Physics, Constanta, Romania, 6-8 Sept. 2001, p. 50-53

35. O. Stoican and B. Mihalcea, *Miniaturized device for generating microplasmas under standard temperature and pressure conditions*, XI-th Conf. Plasma Physics and Appl., Constanța, 6-8 Sept. 2001

36. B. Mihalcea and O. Stoican, Chaos and order in the dynamics of a trapped ion, TFD 22-nd Int. Phys. Conf., Kos, Turkey (2002)

37. A. Gheorghe, B. Mihalcea, *Equilibrium Configurations of Linear Trapped Ionic Crystals*, XII-th Conference on Plasma Physics and Applications, 1-3 Sept. 2003, Iaşi, Romania, Abstracts, p. 36-37

38. C. Mandache, O. Gheorghiu, T. Acsente, B. Mihalcea, O. Stoican, A. Niculescu and L. Giurgiu, P2FC-N-2 *Frequency standards and time metrology in Romania*, Joint IEEE-UFFC Symposium 2004, Montreal, 23-27 August 2004, http://www.ieee-uffc.org/main/publications/fcs/toc.asp?year=2004

39. Viorica N. Gheorghe, A. Gheorghe, Bogdan M. Mihalcea, *Quantum Dynamics of a Single Ion Confined in a Nonlinear Electromagnetic Trap*, Oral Paper, Programme of the Intl. Conf. Micro- to Nano-Photonics ROMOPTO2006, 28 Aug - 1 Sep. 2006, Sibiu, p. 31

40. B. M. Mihalcea, Viorica N. Gheorghe, A. Gheorghe, *Quasiclassical dynamics of a single ion in a nonlinear electromagnetic trap*, 20-th International Conference on Atomic Physics, Innsbruck, Austria, 16-21 July 2006, Book of Abstracts, p. 521

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41. B. Mihalcea, V. N. Gheorghe, A. Gheorghe, *Quasiclassical dynamics of a single ion in a nonlinear electromagnetic trap*, Satellite Meeting of the 20-th Intl. Conf. on Atomic Phys., Innsbruck, Austria, 23-24 July 2006, Book of Abstracts, P39
http://heart-c704.uibk.ac.at/icap2006/book_of_abstracts_sm.pdf

42. O. Stoican, B. Mihalcea, L. Giurgiu and I. N. Mihailescu, *Miniaturized hexapolar Paul trap setup*, Satellite Meeting of the 20-th Intl. Conf. On Atomic Phys., Innsbruck, Austria, 23-24 July 2006, Book of Abstracts, P40, http://heart-c704.uibk.ac.at/icap2006/book_of_abstracts_sm.pdf

43. B. Mihalcea, Gina Visan, Liviu Giurgiu and Stefan Radan, *Optimization of ion trap geometries and of the signal-to-noise ratio for high resolution spectroscopy*, XIV-th Intl. Conference on Plasma Physics and Applications, 14-18 September 2007, Univ. Transilvania, Brasov, Romania, p. 92

44. Ovidiu Stoican, B. M. Mihalcea, L. M. Dinca, Gina T. Visan, *Acoustic excitation of the charged microparticles motion in a linear electrodynamic trap*, Modern Applications of Trapped Ions, Les Houches, France, 18-23 May 2008, Abstracts, p. 30 http://www.spectro.jussieu.fr/Mappi08/poster.html

45. Bogdan M. Mihalcea, Ovidiu S. Stoican, Gina T. Visan, Laurentiu M. Dinca, Ion N. Mihailescu, *Multipole trap geometries operating under standard temperature and pressure reference conditions*, Modern Applications of Trapped Ions, Les Houches, France, 18-23 May 2008, Abstracts, p. 27, http://www.spectro.jussieu.fr/Mappi08/poster.html

46. Bogdan M. Mihalcea and Ion M. Mihailescu, *Time dependent variational principle and coherent states orbits*, 15-th Central European Workshop on Quantum Optics, CEWQO2008, Book of Abstracts, p. 59-60, Belgrade, 30 May-03 June 2008, ISBN 978-86-82441-23-6
http://cewqo08.phy.bg.ac.rs/UserFiles/File/Cewqo08BookOfAbstracts.pdf

47. Bogdan M. Mihalcea, *Quantum parametric oscillator in an ion trap*, 15-th Central European Workshop on Quantum Optics, CEWQO2008, Book of Abstracts, p. 61-62, Belgrade, 30 May-03 June 2008, ISBN 978-86-82441-23-6
http://cewqo08.phy.bg.ac.rs/UserFiles/File/Cewqo08BookOfAbstracts.pdf

48. B. M. Mihalcea, *Nonlinear Harmonic Boson Oscillator*, The 16th Central European Workshop on Quantum Optics, CEWQO2009, **Report Series in Phys.**, Univ. of Turku, Finland, Sarja-Ser. L32, Book of Abstracts, p. 140, ISSN 0788-9305, ISBN 978-951-29-3947-3, Uniprint – Turku 2009

49. B. M. Mihalcea and G. Visan, *Stability analysis of the Dynamics in a Nonlinear Ion Trap*, The 16th Central European Workshop on Quantum Optics, CEWQO2009, May 23-27, 2009, **Report Series in Phys.**, Univ. of Turku, Finland, Ser. L32 Book of Abstracts, p. 141, ISSN 0788-9305, ISBN 978-951-29-3947-3, Uniprint – Turku 2009

50. Bogdan M. Mihalcea, *Semiclassical dynamics for an ion confined within a nonlinear electromagnetic trap*, The 17-th Central European Workshop on Quantum Optics, CEWQO2010, June 6-10, Univ. of St. Andrews, Great Britain (2010),

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51. B. M. Mihalcea, G. Vişan and Ion M. Mihăilescu, *Ion dynamics in a highly nonlinear electromagnetic trap*, The 17-th Central European Workshop on Quantum Optics, CEWQO2010, June 6-10, Univ. of St. Andrews, Great Britain (2010),

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PATENTS

1. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, *Miniaturized setup for ionized microparticle trapping*, Patent nr. **RO109684-B1**, BOPI nr. 4/95, Romania
2. O. Stoican, L. Giurgiu, B. Mihalcea, D. Cacicovschi, V. Gheorghe, *Electronic system intended for supplying a trap for charged microparticle confinement*, Patent nr. **RO110371-B1**, BOPI nr. 12/9, Bucharest, Romania
3. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, S. Comanescu, *Linear trap operating in air for generation of ordered microplasmas*, Patent nr. **RO111401-B1**, BOPI nr. 9/96, Bucharest, Romania
4. O. S. Stoican, B.M.Mihalcea, G. Visan, L. Dinca, I. Mihailescu, *Hexapolar electromagnetical trap for storage of electrically charged microparticles under standard temperature and pressure reference conditions*, Patent Nr. **RO125641-A2,** Published in BOPI nr. 10/2009, Bucharest, Romania
5. B. M. Mihalcea, O. S. Stoican, G. Visan, L. Dinca, *Dodecapolar linear Paul trap*, Published in BOPI nr. 7/2010, Bucharest, Romania

NATIONAL CONFERENCES

1. L. C. Giurgiu, M. P. Dinca, B. Mihalcea, *"On the perturbation of the maser generated frequency produced by the thermostating system"*, 11-th Communications Session of the Central Physical Instiute, Progress in Physics, 5 -7 Oct. 1989, 472-473, Oradea, Romania
2. O. Gheorghiu, B. Mihalcea, L. Giurgiu, M. Dinca, "*Measurements over the frequency stabiliy of the M8 and M9 Hydrogen masers*", Communications Session of the Romanian Academy, 14 - 15 Nov. 1991, Bucharest, Oral Presentation
3. O. Gheorghiu, B. Mihalcea, "*Frequency synthesizer receiver for the Hydrogen masers*", Communications Session of the Romanian Academy, 14 - 15 Nov. 1991, Bucharest, Oral Presentation
4. O. Gheorghiu, L. Giurgiu, B. Mihalcea and D. Cacicovschi, "*M8 and M Hydrogen Masers as frequency and time standards*", National Phys. Conf., Iasi, 21-24 Sept. 1992, Paper Abstracts, p. 85
5. V. Gheorghe, L. Giurgiu, B. Mihalcea, O. Stoican, D. Cacicovschi , "*Macroscopic particle storing in an air cylindrical trap*", Nat. Conf. in Phys., Constanta, Oct.1993, Paper abstracts, p. 96
6. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, "*Hollow cathode discharge for 493 nm radiation generation*", Nat. Conf. in Phys., Constanta, Oct. 1993, Paper abstracts, p. 97
7. V. Gheorghe, L. Giurgiu, O. Stoican, B. Mihalcea, D. Cacicovschi, "*Miniaturized experimental setup for ionized macroparticles storage*", Nat. Phys. Conf., Sibiu, Sept. 1994, Paper abstracts, p. 168

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9. O. Stoican, B. Mihalcea, L. Dincă, G. Visan "*Numerical analysis of the microparticles motion stored in a linear electrodynamic trap in standard temperature and pressure conditions*" **Programme, *National Conference on Physics 2008, Section 5 Optics and Quantum electronics, 10-12 Sept. 2008, Bucharest-Magurele*** www.nipne.ro/cnf2008/ProgramCNF-2008.doc

MANAGING AND RESEARCH ABILITIES

Bogdan Mihalcea has a solid managerial competence, with over 12 years of experience in coordinating complex research themes (with different partners from research institutes and universities form Romania), and a large number of projects awarded. These are:

1. MCT Contract B29/A20: Researches on microparticle trapping in multipolar electromagnetical traps (1999-2001), Position: Project Manager
2. MCT Contract 555/A54: Researches on microplasmas with an aim to develop a future time-frequency atomic standard based on trapped ions (2000-2002), Position: Project Manager
3. MCT Grant 5086-5087/1999: Researches on microparticle storage in electromagnetical traps (11.1999-12.2000), Position: Grant Director
4. ANSTI Grant 555/2000: Classical study on the micromotion of ions confined in electromagnetical Paul traps (2000), Position: Grant Director
5. MCT Grant B54/2001: The dynamics of an ion confined in an electromagnetical, nonlinear Paul type trap (11.2001-12.2002), Position: Grant Director
6. MCT Contract 22 / PN 17 03-02: Preparation and study of non-classical states of motion for trapped atoms and ions (2003-2006). Position: Scientific Project Manager
7. MCT Contract CERES 4-142/12. 11. 2004: Hamiltonian dynamics for ions stored in electromagnetical fields. Prospects for non-linear Paul traps towards achieving quantum logic LOGICUANT (11.2004-09.2006), Position: Scientific Project Manager
8. MCT Contract CEEX 05-D11-55/2005: Nonlinear structures and scalability limis for quantum logic in ion traps ELECTROCUANT (10.2005-07.2008), Position: Scientific Project Manager.
9. MCT Contract CEEX 06-D11-37/2006: Study of quantum logic and quantum metrology based on electromagnetical traps Applications in high-precision spectroscopy and in monitoring of environment pollution (10.2006-09.2008), Position: Scientific Project Manager

All the research contracts mentioned above have been obtained in Romania.