

# SIMONA MICLAUS

## Selection of representative scientific contributions & research projects

### A. PAPERS PUBLISHED IN PEER-REVIEWED / INTERNATIONAL DATABASE INDEXED JOURNALS

1. **Miclaus S.**, Bechet P., Iftode C., The application of a channel-individualized method for assessing long-term, realistic exposure to radiofrequency radiation emitted by mobile communication base station antennas, Measurement, DOI 10.1016/j.measurement.2012.11.040, vol.46, no.3, pp. 1355–1362, 2013–**ISI**
2. Bechet P., **Miclaus S.**, An Improved Procedure To Accurately Assess The Variability Of Exposure To Electromagnetic Radiation Emitted By GSM Base Station Antennas, Measurement Science and Technology, 24 (2013) 015003, doi:10.1088/0957-0233/24/1/015003, 2013–**ISI**
3. Iftode C., **Miclaus S.**, Design And Validation Of A Tem Cell Used For Radiofrequency Dosimetric Studies, Progress in Electromagnetic Research – PIER, vol. 132, pp.369-388, 2012–**ISI**
4. **Miclaus S.**, Bechet P., Gheorghevi M., Long-Term Exposure To Mobile Communication Radiation: An Analysis Of Time-Variability Of Electric Field Level In GSM900 Downlink Channels, Radiation Protection Dosimetry, DOI 10.1093/rpd/ncs169, first published online 19 August 2012 - **ISI**
5. Bechet P., **Miclaus S.**, Bechet A., Improving the Accuracy of Exposure Assessment to Stochastic-like Radiofrequency Signals, IEEE Transactions on Electromagnetic Compatibility, DOI 10.1109/TEMC.2012.2191290, 54(5): 1169-1177, 2012 –**ISI**
6. Iftode C., **Miclaus S.**, Bechet P., Surducu E., A TEM Cell Model Analysis For Radiofrequency Dosimetry Improvement By Computational Means, Proceedings of the 7th International Symposium on Advanced Topics In Electrical Engineering, Bucharest, 12-15 May, 2011- IEEE Xplore, INSPEC
7. Bechet P., **Miclaus S.**, Swept versus Real-Time Spectrum Analyzer Ability to Accurately Asses Electromagnetic Exposure due to Wireless Communications Signals in the Environment: An Analysis, PIERS Online, vol. 7, no.3, pp. 276-280, doi:10.2529/PIERS100918003254, USA, 2011
8. **Miclaus S.**, Bechet P., Near Field Radiofrequency Metrology and Occupational Exposure Assessment: In Situ Measurements and Accuracy Analysis, Proceedings of the 20th International Conference on Applied Electromagnetics and Communications (ICECOM), Dubrovnik, Croatia, 20-23 Sept. 2010, IEEE Xplore
9. **Miclaus S.**, Calota V., In Situ Radiofrequency Field Level Assessment in two urban areas in Romania: Open Questions to Electromagnetic Pollution, Environmental Engineering and Management Journal, Vol.9, No. 5, pp. 713-719, May 2010 - **ISI**
10. Has I., **Miclaus S.**, Has A., An alternative light path analysis in Michelson's interferometer experiment, Physics Essays, vol. 23, 2: 248-258, ISSN 0836-1398, Quebec, Canada, 2010–**ISI**
11. **Miclaus S.**, Morega M., Characterisation of the electromagnetic environment in a TEM cell for exposure of small biological samples in the UHF band, Romanian Journal of Physics, Publishing House of the Romanian Academy, vol. 55, no.1-2, Bucharest, 2010 -**ISI**
12. Racuciu M., **Miclaus S.**, Creanga D.E., The response of plant tissues to magnetic fluid and electromagnetic exposure, Romanian Journal of Biophysics, vol. 19, no.1, Romanian Academy Press, ISSN: 1220-515X, 2009 –IndexCopernicus
13. Surcel D., Dabala D., Szanto C., **Miclaus S.**, Botoc M., Hriscu M., Free Radicals, Lipid Peroxidation and Immune Response in Experimental Exposure to Electromagnetic Fields, Epidemiology, 20(6): S118-S119 November 2009 - **ISI**
14. **Miclaus S.**, Bechet P., Bouleanu I. Helbet R., Radiofrequency field distribution assessment in indoor areas covered by Wireless Local Area Networks, Advances in Electrical and Computer Engineering, vol. 9 (16), no.1, 2009 - **ISI**
15. Has I., **Miclaus S.**, Has A., Analysis of a possible correlation between electrical and gravitational forces, Physics Essays, vol. 21, nr. 4, ISSN 0836-1398, Quebec, Canada, 2008
16. Dabala D., Surcel D., Szanto C., **Miclaus S.**, Botoc M., Toader S., Rotaru O., Cellular response in experimental exposure to electromagnetic fields, Revue Roumaine des Sciences Techniques. - Série: Électrotechnique et énergétique, tome 53, no 2, pp.21-29, Bucharest, 2008 - **ISI**
17. Morega M., **Miclaus S.**, Machedon A., Analysis of the Elecromagnetic Field in a controlled enclosure for biological dosimetry, Revue Roumaine des Sciences Techniques. - Série: Électrotechnique et énergétique, tome 53, no 2, pp. 225-235, ISSN 0035-4066, Bucharest, 2008 - **ISI**
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19. **Miclaus S.**, Racuciu M., A dosimetric study for experimental exposures of vegetal tissues to radiofrequency fields, Studies in Applied Electromagnetics and Mechanics, vol.29: Electromagnetic Fields, Health and Environment, pp.133-141, ISBN 978-1-58603-860-1, IOS Press, Netherlands, 2008.
20. Racuciu M., **Miclaus S.**, Creanga D.E., Non-thermal, continuous and modulated RF field effects on vegetal tissue developed from exposed seeds, Studies in Applied Electromagnetics and Mechanics, vol.29: Electromagnetic Fields, Health and Environment, pp.142-149, ISBN 978-1-58603-860-1, IOS Press, Netherlands, 2008.

21. Creanga, D.E., **Miclaus, S.**, Computational insight in the visual ganglion dynamics, Romanian Journal of Physics, vol. 53, no. 1-2, pp. 353-358, Publishing House of the Romanian Academy, ISSN 1221-146X, Bucharest, 2008.
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23. Kovacs E., Savopol T., Martin D., Iacob N., **Miclaus S.**, Bajenaru L., Changes in membrane order parameters of cultured cells by exposure to 2.45 GHz microwaves, 6th EBSA & British Biophysical Society Congress July 14 - 18 2007, Imperial College, London, U.K., published in European Biophysics Journal, vol. 36, suppl.1/July 2007, pag.77, ISSN: 0175-7571 (print) 1432-1017 (Online), Springer, 2007.
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25. **Miclaus S.**, Bechet P., Estimated and measured values of the radiofrequency radiation power density around cellular base stations, Romanian Journal of Physics, vol.52, no.3-4, pp. 399-410, Publishing House of the Romanian Academy, ISSN 1221-146X, Bucharest, 2007 - **ISI**
26. Curecheriu L., Focanici E., Vlahovici A., Avadanei O., Sandu D.D., Creanga D., **Miclaus S.**, Radiofrequency wave effects on the DNA and RNA levels in some animal tissues, Romanian Journal of Physics, vol.52, no.3-4, pp. 361-367, Publishing House of the Romanian Academy, ISSN 1221-146X, Bucharest, 2007.
27. Molnar R., **Miclaus S.**, Curecheriu L., Focanici E., Tupu P., Creanga D.E., Drochioiu G., Nadejde C., Goiceanu C., Study of the putative hyperthermia effect in plants electromagnetically exposed and treated with magnetic liquid, Analele Stiintifice ale Universitatii Al. I. Cuza din Iasi Tomul III, s. Biofizică, Fizică medicală și Fizica mediului, pp.78-82, 2007.
28. Mosteanu D., **Miclaus S.**, Barsan G., Research regarding obtaining volatile oils from native plants in microwave assisted vacuum system, Proceedings of the 17th European Symposium on Computer Aided Process Engineering (ESCAPE-17), Computer Aided Chemical Eng., 24, Editors Prof. Valentin Plesu and Prof. Paul Serban Agachi, Bucharest, Romania, ISBN 978-0-444-53158-2, 27-30 May 2007.
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31. **Miclaus S.**, Bechet P., Goiceanu C., Olariu O.V., Demeter S., Practical issues concerning cellular base station emissions and population exposure in Romania, The 3rd European Medical and Biological Engineering Conference EMBEC'05&IFMBE, ISSN 0363-6135, IFMBE Proceedings CD-ROM ISBN 1727-1983 Prague, Czech Rep., Nov. 2005
32. **Miclaus S.**, Bechet P., Olariu O.V., Demeter S., Computation of radiofrequency field deposition in biological exposed models by an analytical method, Romanian Journal of Biophysics, Publishing House of the Romanian Academy, vol.15, no.1-4, pp. 47-54, ISSN: 1220-515X, Bucharest, 2005.
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34. Bechet P., **Miclaus S.**, Demeter S., Popa M., Bora M., Continuous and Digital Modulated Radiofrequency Fields Propagation in Planar Biological Models, Proceedings of the 2003 IEEE International Symposium on Electromagnetic Compatibility, Istanbul, Turkey, vol.2, pp. 1241-1244, ISBN: 0-7803-7779-6.
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37. Pavel A., Gassner P., Creanga D., **Miclaus S.**, Bara I.I., Citogenetic modifications induced in Chelidonium majus by low thermal microwaves, Annales Scientifiques de l'Universite de Franche-Comte, Physique, pp. B5-B8, Besancon, France, 1999

## **B. CONTRIBUTIONS AT INTERNATIONAL SCIENTIFIC MEETINGS (including ISI indexed proceedings)**

1. Miclaus S., Bechet P., Empirical Dosimetry for the Near Field of Portable Radiocommunication Devices in the VHF Band, Conf. Proceedings of the 19th International Conference "The knowledge based organization", Land Forces Academy Publishing House, Sibiu, June 2013
2. Miclaus S., Iftode C., Colcieru M., Low-dose 1GHz exposure in controlled conditions for the study of cellular effects of in vitro irradiated blood, Proceedings of the 8th International Symposium on Advanced Topics In Electrical Engineering, Bucharest, May 2013 –indexed in IEEEExplore
3. Stanic M., Miclaus S., Bechet P., Near Field Level Assessment of Portable Radiocommunication Equipment For Occupational Exposure Purposes, Proc. of the 5th International Conference on Modern Power Systems, Cluj Napoca, 28-31 May 2013, Acta Electrotehnica, vol. 54, no.5, pp. 459-464, issn 1841-3323, 2013

4. Gheorghevi M., Bechet P., Miclaus S., Mitran R., An automated electromagnetic field monitoring system based on spectrum analyzer, Proc. of the 5th International Conference on Modern Power Systems, Cluj Napoca, 28-31 May 2013, Acta Electrotehnica, vol. 54, no.5, pp. 199-203, issn 1841-3323, 2013
5. Stanic M., Miclaus S., Bechet P., Occupational exposure to VHF band radiofrequency radiation in the near-field of antennas used in military communications, 8th International Workshop of Electromagnetic Compatibility, Sibiu, 27-29 sept., 2012
6. Miclaus S., Bechet P., Gheorghevi M., Long-Term Exposure To Mobile Communication Radiation: An Analysis Of Time-Variability of Electric Field Level in GSM900 Downlink Channels, 8th International Workshop of Electromagnetic Compatibility, Sibiu, 27-29 sept., 2012
7. Stanic M., Miclaus S., Bechet P., An Analysis of the Dynamics of Electromagnetic Near-Field Level of Mobile Phones During the Call Initiation Period, Conf. Proceedings of the 18th International Conference "The knowledge based organization", Land Forces Academy Publishing House, Sibiu, 14-15 June 2012, vol. 3, pp. 323-328, ISSN 1843-6722
8. Bechet P., Miclaus S., Critical settings of swept spectrum analyzers for improved accuracy measurement of radiofrequency field level of IEEE 802.11 b/g signals, Le deuxième colloque francophone PLUridisciplinaire sur les Matériaux, l'Environnement et l'Electronique (PLUMEE 2011), Limoges, France, 30 Mai-1 Juin, 2011
9. Bechet P., Miclaus S., Improvement of measurement accuracy in case of using swept spectrum analyzers for RF field exposure assessment due to stochastic-like signals, Proceedings, 10th Intl. EBEA Congress, ISBN 978-88-8286-231-2, Rome, Italy, 21-24 Febr., 2011
10. Dabala D.C., Surcel D., Szanto C., Miclaus S., Rotaru O., Cellular Response in Experimental Exposure to Electromagnetic Fields, Proceedings, 10th Intl. EBEA Congress, ISBN 978-88-8286-231-2, <http://proceedings.ebea2011.org/>, Rome, Italy, 21-24 Febr., 2011
11. Miclaus S., Bechet P., Iftode C., Near Field Radiofrequency Measurements for Occupational Exposure Assessment by Personal Exosimeter: Possibilities and Limitations, Proceedings of the 6th International Workshop on Biological Effects of Electromagnetic Fields, Bodrum, Turcia, 10-14 Oct.2010
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13. Miclaus S., Bechet P., Iftode C., Measurements precision analysis of radiofrequency field exposure levels in case of intercomparison between different frequency selective instrumentation, 15 Colloque International et exposition sur la Compatibilite Electromagnetique, Limoges, Franta, 7-9 April 2010
14. Miclaus S., Bechet P., Occupational Exposure to Electromagnetic Fields Assessment of Personnel Serving Military mobile Radio Communication Stations: A Preliminary Study, Conf. Proceedings of the 15th International Conference "The knowledge based organization" (vol.6), Land Forces Academy Publishing House, Sibiu, 26-28 November 2009, ISSN 1843 – 6722, pp. 82-88, 2009 – ISI Proceedings
15. Miclaus S., Racuciu M., Morega M., Assimilatory Pigments and Nucleic Acid Concentrations of Vegetal Tissue Exposed to Low Level 900MHz Controlled Field, BioEM2009 - Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA), Davos, Switzerland, 14-19 June 2009.
16. Miclaus S., Racuciu M., Morega M., Dosimetric-biophysical approach for the assessment of the influence of low-level RF-EMF on plants developed from exposed seeds, EUROEM 2008 Symposium, Abstract book, p. 377, Lausanne, Switzerland, 21-28 July, 2008.
17. Bechet P., Miclaus S., Bouleanu I., Mitran R., Helbet R., Comparative study regarding the accuracy of the measurement performed with frequency selective systems in the case of SDR emitting sources, EUROEM 2008 Symposium, Abstract book, p. 359, Lausanne, Switzerland, 21-28 July, 2008.
18. Dabala D., Surcel D., Szanto C., Miclaus S., Health Risk assessment in workers occupational exposed to Radiofrequency Electromagnetic Fields, FGF-Workshop: "Sleep Disorders, EEG-Changes, Altered Cognitive Functions - Is There a Connection With the Exposure to Mobile Communication RF Fields?", Stuttgart, 5 - 7 November, 2007.
19. Miclaus S., Bechet P., Radiofrequency field level measurements for human exposure assessment by two frequency-selective systems: an analysis, Proceedings- International Workshop: Implementation of the "Model Legislation" (WHO) in the field of EMF human exposure. Quality assurance in measurements, Balchik, Bulgaria, 14-17 oct. 2007.
20. Morega M., Miclaus S., Electromagnetic environment generated in a TEM cell for biological dosimetry applications, Proceedings of ISEF 2007 – XIII International Symposium on Electromagnetic Fields in Mechatronics, Electrical and Electronic Engineering, ISBN 978-80-01-03784-3, Prague, Czech Republic, September 13-15, 2007
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22. Miclaus S., Bechet P., Intercomparison measurements of environmental radiofrequency signal levels with respect to human exposure, Abstract Book, 8TH International Congress of the European Bioelectromagnetics Association (EBEA), Bordeaux, France, 10-13 April 2007.
23. Racuciu M., Miclaus S., UHF radiofrequency electromagnetic field influence on vegetal tissue at molecular level, Abstract Book, 8TH International Congress of the European Bioelectromagnetics Association (EBEA), Bordeaux, France, 10-13 April 2007.
24. Miclaus S., Bechet P., Aspects regarding radiofrequency radiation exposure of population in Romania, Proceedings of the 4th Internat. Workshop "Biological Effects of Electromagnetic Fields", pp. 1077-1086 , ISBN 960-233-171-2, Creta, Greece, 16-20 Oct. 2006.
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29. Miclaus S., Bechet P., Demeter S., Radiofrequency power deposition in the spherical model of a biological object exposed to a broadband electromagnetic pulse, Proceedings of the 3rd Internat. Workshop "Biological Effects of Electromagnetic Fields", vol.II, pp. 1092-1097, ISBN 960-233-152-6, Kipriotis Village Resort, Kos, Greece, 4-8 Oct. 2004.
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### C. PUBLISHED BOOKS

1. Miclaus S., Introduction to microwaves bioelectromagnetics, "Lucian Blaga" University Press, 128 pages, ISBN 973-8012-06-6, Sibiu, Romania, 1999 (in romanian).
2. Miclaus S, Dosimetry of radiofrequency and microwave fields – Theoretical and experimental elements - Land Forces Academy Press, 325 pages, ISBN 978-973-7809-82-7, Sibiu, Romania, 2007 (in romanian).
3. Miclaus S., Nuclear physics elements – Course notes, Land Forces Academy Press, 214 pages, ISBN 978-973-153-076-5, Sibiu, Romania, 2010 (in romanian).
4. Velicof M., Miclaus S., Radiological and nuclear incidents and threats from defense perspective, 238 pages, ISBN 978-606-616-003-2, Tehno Media Press, Sibiu, 2011 (in romanian)
5. Miclaus S., Calota V., Expunerea in campurile electromagnetice: Determinari in campul apropiat si in campul indepartat al surselor de radiofrecventa, Ed. Technomedia, Sibiu, 2013.

### D. RESEARCH GRANTS/PROJECTS

1. Project title: "*The study of electromagnetic energy absorption in models of biological systems exposed to modulated microwaves emitted by radar installations*", Project manager, 2001-2002, Grant type T, supported by National Agency for Science, Technology and Innovation, Romanian Ministry of Education and Research.
2. Project title: "*Application of computational methods for dosimetric assessment of RF fields absorbed in biological models*", Project team member, 2004-2005, Grant type A, supported by Natl. Council of Scientific Research in Universities, Romanian Ministry of Education and Research.
3. Project title: "*Research on bio-electromagnetic interaction and on the biologic impact of human exposure to radiofrequency and microwaves electromagnetic fields*", Project director, 6 institutional partners involved, 2005-2007, contract granted under National Research Program CEEX, Romanian Ministry of Education and Research.
4. Project title: "*Microwaves interaction with molecular and bio-molecular systems*", Project responsible in the subcontractor institution, 6 institutional partners involved, 2005-2008, sub-contract granted under National Research Program CEEX, Romanian Ministry of Education and Research.
5. Project title: "*Contributions to the study and development of frequency synthesizers structures in specific applications*", Member of team, granted by Ministry of Education and Research of Romania, 2001-2002.
6. Project title: "*Study on the military systems' interoperability*", Member of team, granted by Ministry of Education and Research of Romania, 2004-2005.
7. Project title: "*Elaboration of a decisional instrument for the optimization of the capabilities at tactical level in the area of national security and defense*", Member of team, granted by Ministry of Education and Research of Romania, 2005-2006.
8. Project title: "*Research on optimization of the military radio capabilities integrated in standardized communication environment*", Member of team, granted by Ministry of Education and Research of Romania, 2007-2010.

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