

SELECTED PUBLICATIONS LIST

Dr. Cristina M. Muntean

ARTICLES IN ISI JOURNALS

1. N. Toşa, N. E. Dina, B. I. Cozar, A. Coste, A. Halmagyi, M. Pârvu, **C. M. Muntean**, (2024) “Structural characterization of DNA from *Allium* leaves and *E. coli* by surface-enhanced Raman spectroscopy (SERS)”, Analytical Letters - published online.
2. **C. M. Muntean**, R. Ştefan, A. Tăbăran, A. Bende, A. Fălămaş, L. E. Olar (2024) “Characterization of the structural changes of the genomic DNA of *Staphylococcus aureus* due to femtosecond laser irradiation by Fourier transform infrared (FT-IR) spectroscopy”, Analytical Letters 57(5), 711-726.
3. **C. M. Muntean**, D. Cuibus, S. Boca, A. Fălămaş, N. Toşa, I. A. Brezeştean, A. Bende, L. Barbu-Tudoran, R. Moldovan, E. Bodoki, C. Farcău (2023) “Gold vs silver colloidal nanoparticle films for optimized SERS detection of propranolol and electrochemical-SERS analyses”, Biosensors 13, 530.
4. A. Fălămaş, D. Cuibus, N. Toşa, I. Brezeştean, **C. M. Muntean**, K. Milenko, E. Vereshchagina, R. Moldovan, E. Bodoki, C. Farcău (2023) “Toward microfluidic SERS and EC-SERS applications via tunable gold films over nanospheres”, Discover Nano 18, 73.
5. N. E. Dina, **C. M. Muntean**, I. Bratu, A. Tican, A. Halmagyi, M. A. P. Purcaru, A. Coste (2022) “Structure and surface dynamics of genomic DNA as probed with surface-enhanced Raman spectroscopy: Trace level sensing of nucleic acids extracted from plants”, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 279, 121477, 1-7.
6. I. A. Brezeştean, N. Toşa, A. Fălămaş, D. Cuibus, **C. M. Muntean**, A. Bende, B. Cozar, C. Berghian-Groşan, C. Farcău (2022) “Silver nanoparticle films obtained by convective self-assembly for surface-enhanced Raman spectroscopy analyses of the pesticides thiabendazole and endosulfan”, Frontiers in Chemistry 10, 915337, 1-14.
7. R. Moldovan, E. Vereshchagina, K. Milenko, B.-C. Iacob, A. E. Bodoki, A. Fălămaş, N. Toşa, **C. M. Muntean**, C. Farcău, E. Bodoki (2022) “Review on combining surface-enhanced Raman spectroscopy and electrochemistry for analytical applications”, Analytica Chimica Acta 1209, 339250, 1-25.
8. **C. M. Muntean**, R. Ştefan, A. Tăbăran, C. Tripon, A. Bende, A. Fălămaş, L. M. Colobăţiu, and L. E. Olar (2021) “The influence of UV femtosecond laser pulses on bacterial DNA structure, as proved by Fourier transform infrared (FT-IR) spectroscopy”, ChemistrySelect 6(27), 6957-6972.
9. **C. M. Muntean**, N. E. Dina, I. Bratu, C. Tripon, S. Niţu (Năstase) and A. Coste (2021) “Acidic pH-responsive changes of DNA structure and surface dynamics as probed with

- ultrasensitive Raman spectroscopy”, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 258, 119866.
10. **C. M. Muntean**, N. E. Dina, I. Bratu, A. Fălămaș, S. Nițu (Năstase), A. Halmagyi and A. Coste (2021) “Effects of femtosecond UV laser pulses on the structure and surface dynamics of medicinal plants DNA, monitored by surface-enhanced Raman spectroscopy”, *Journal of Molecular Structure* 1239, 130482.
 11. **C. M. Muntean**, N. E. Dina, A. Tăbăran, A. M. R. Gherman, A. Fălămaș, L. E. Olar, L. M. Colobățiu and R. Ștefan (2021) “Identification of *Salmonella* serovars before and after ultraviolet light irradiation by Fourier transform infrared (FT-IR) spectroscopy and chemometrics”, *Analytical Letters* 54(1-2), 150-172.
 12. **C. M. Muntean**, N. E. Dina, T.-L. Biter, I. Bratu, M. Coroș, C. Socaci and A. Coste (2020) „Surface dynamics of genomic DNAs upon lowering the pH, in the presence of graphene/AgNPs-based SERS detection platform”, *Journal of Molecular Modeling* 26(8): 211 (p. 1-9).
 13. M. Hârța, O. Borsai, **C. M. Muntean**, N. E. Dina, A. Fălămaș, L. E. Olar, K. Szabo, D. Pamfil and R. Ștefan (2020) „Assessment of genetic relationships between *Streptocarpus x hybridus* V. parents and F1 progenies using SRAP markers and FT-IR spectroscopy”, *Plants (Basel)* 9(2), 160.
 14. **C. M. Muntean**, N. E. Dina, M. Coroș, N. Toșa, A. I. Turza and M. Dan (2019) “Graphene/silver nanoparticles-based surface-enhanced Raman spectroscopy detection platforms: Application in the study of DNA molecules at low pH”, *Journal of Raman Spectroscopy* 50(12), 1849-1860.
 15. **C. M. Muntean**, T.-L. Biter, I. Bratu, N. Toșa (2019) “Metallic surface dynamics of genomic DNA and its nitrogenous bases: SERS assessment and theoretical considerations”, *Journal of Molecular Modeling* 25(6), 162.
 16. **C. M. Muntean**, I. Bratu, C. Tripon, K. Nalpanidis, M. A. P. Purcaru, V. Deckert (2017) “Molecular relaxation processes in nucleic acids components as probed with Raman spectroscopy”, *Revista de Chimie (Bucharest)* 68(10), 2471-2476.
 17. C. Tripon, **C. M. Muntean**, I. Bratu, K. Nalpanidis, V. Deckert (2017) “(Sub)picosecond processes in DNA and RNA constituents: a Raman spectroscopic assessment”, *Polymer Bulletin* 74, 4087-4100.
 18. **C. M. Muntean**, I. Bratu, A. Hernanz (2017) “Vibrational relaxation of the backbone and base modes in LacDNA complexes by UV resonance Raman spectroscopy”, *Journal of Physical Chemistry B* 121(28), 6909-6918.
 19. N. E. Dina, **C. M. Muntean**, N. Leopold, A. Fălămaș, A. Halmagyi, A. Coste (2016) “Structural changes induced in grapevine (*Vitis vinifera* L.) DNA by femtosecond IR laser pulses: A surface-enhanced Raman spectroscopic study”, *Nanomaterials, Special Issue “DNA-Based Nanotechnology”* 6(6), 96.
 20. C. Tripon, **C. M. Muntean**, E. Surducan, I. Bratu, A. Halmagyi, A. Coste (2016) “Structural response of genomic DNA from grapevine (*Vitis vinifera* L.) varieties to microwaves irradiation: a Fourier transform infrared spectroscopy assessment”, *Biomedical Spectroscopy and Imaging* 5(3), 295-312.

21. **C. M. Muntean**, N. Leopold, C. Tripon, A. Coste, A. Halmagyi (2015) "Surface-enhanced Raman spectroscopy of genomic DNA from *in vitro* grown tomato (*Lycopersicon esculentum* Mill.) cultivars before and after plant cryopreservation", *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 144, 107-114.
22. **C. M. Muntean**, I. Bratu, N. Leopold, C. Morari, L. Buimaga-Iarinca, M. A. P. Purcaru (2015) "Subpicosecond surface dynamics in genomic DNA from *in vitro*-grown plant species: A SERS assessment", *Physical Chemistry Chemical Physics* 17, 21323-21330.
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25. C. Morari, **C. M. Muntean**, C. Tripon, L. Buimaga-Iarinca, A. Calborean (2014) "DFT investigation of the vibrational properties of GC Watson-Crick and Hoogsteen base pairs in the presence of Mg^{2+} , Ca^{2+} and Cu^{2+} ions", *Journal of Molecular Modeling* 20(4), 2220, 1-7.
26. A. Bende, **C. M. Muntean** (2014) "The influence of anharmonic and solvent effects on the theoretical vibrational spectra of the guanine-cytosine base pairs in Watson-Crick and Hoogsteen configurations", *Journal of Molecular Modeling* 20(3), 2113, 1-12.
27. **C. M. Muntean**, A. Lapusan, L. Mihaiu, R. Stefan (2014) "Strain dependent UV degradation of Escherichia coli DNA monitored by Fourier transform infrared spectroscopy", *Journal of Photochemistry and Photobiology B: Biology* 130, 140-145.
28. **C. M. Muntean**, M. Salehi, S. Niebling, B. Walkenfort (2013) "The influence of divalent metal ions on low pH induced LacDNA structural changes as probed with UV resonance Raman spectroscopy", *Journal of Raman Spectroscopy* 44(12), 1693-1699.
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31. **C. M. Muntean**, I. Bratu, D. Bogdan (2013) "Subpicosecond Processes in Nucleic Acids Bases Monitored by Raman Spectroscopy", *Biomedical Spectroscopy and Imaging* 2(1), 37-49.
32. C. Morari, D. Bogdan, **C. M. Muntean** (2012) "Binding effects of Mn^{2+} and Zn^{2+} ions on the vibrational properties of guanine-cytosine base pairs in the Watson-Crick and Hoogsteen configurations", *Journal of Molecular Modeling* 18(11), 4781-4786.
33. **C. M. Muntean**, I. Bratu, N. Leopold, M. A. P. Purcaru (2011) "Subpicosecond dynamics in DNA from leaves of *in vitro*-grown apple plants: A SERS study", *Spectroscopy-Biomedical Applications* 26(1), 59-68.

34. **C. M. Muntean**, I. Bratu, N. Leopold (2011) “Molecular relaxation processes in genomic DNA from leaf tissues: A surface-enhanced Raman spectroscopic study”, *Spectroscopy-Biomedical Applications* 26(4-5), 245-254.
35. **C. M. Muntean**, N. Leopold, A. Halmagyi, S. Valimareanu (2011) “Surface-enhanced Raman spectroscopy of genomic DNA from *in vitro* grown plant species”, *Journal of Raman Spectroscopy* 42(11), 1925-1931.
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37. **C. M. Muntean**, N. Leopold, A. Halmagyi, S. Valimareanu (2011) “Surface-enhanced Raman spectroscopy of DNA from leaves of *in vitro*-grown apple plants”, *Journal of Raman Spectroscopy* 42(4), 844-850.
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3. **C. M. Muntean**, Andrei Ioachim, Călina Cornea (2005), “Microwave absorption in plasmidic pBR322 DNA molecules”, *Studia Universitatis Babeş-Bolyai, Physica L(2)*, 3-10.
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BOOKS, BOOK CHAPTER

AUTHOR

1. **Cristina M. Muntean** (2006) “STRUCTURAL AND DYNAMICAL ASPECTS OF DNA MOLECULE PUT INTO EVIDENCE BY SPECTROSCOPIC METHODS”, Risoprint Publishing House, Cluj-Napoca, Romania, pp. 292 (ISBN: 973-751-217-0, 978-973-751-217-8).
2. **Cristina M. Muntean** (2007) “RAMAN SPECTROSCOPY OF DNA MOLECULE. APPLICATIONS AND PERSPECTIVES”, Risoprint Publishing House, Cluj-Napoca, Romania, pp. 160 (ISBN: 978-973-751-576-6).
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EDITOR

1. “INSIGHTS INTO VIBRATIONAL SPECTROSCOPY OF NUCLEIC ACIDS AND THEIR COMPLEXES” (2009) Editors **C. M. Muntean** & I. Bratu, Transworld Research Network Publishers, Trivandrum, Kerala, India, pp. 105, ISBN: 978-81-7895-407-3.

(Parts of) ISI PROCEEDINGS BOOKS

1. N. E. Dina Mircescu, **C.M. Muntean**, N. Leopold (2017) “Discrimination of grapevine genomic DNA using surface-enhanced Raman spectroscopy and PCA”, 33rd Course of International School of Atomic and Molecular Spectroscopy on “Nano-optics: Principles enabling basic research and applications”, July 4th-July 19th, 2015, Erice, Sicily, Italy. NATO Science for Peace and Security Series B: Physics and Biophysics, Series ISSN 1874-6500, Sub-series “Nano-Optics: Principles Enabling Basic Research and Applications”, Baldassare Di Bartolo, John Collins, Luciano Silvestri Eds., Springer, Dordrecht, The Netherlands, pp. 499-500, Hardcover ISBN: 978-94-024-0848-5; Softcover ISBN 978-94-024-0869-0, eBook ISBN 978-94-024-0850-8.
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Manipulation (Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Sicily, Italy, 2-17 July, 2009), Baldassare Di Bartolo & John Collins Eds., Springer, Dordrecht, The Netherlands (2011) p. 413 (ISBN 978-94-007-0028-4).

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5. **C. M. Muntean**, G. Banciu, O. Cozar, A. Ioachim (1999) "Microwave Response of DNA Polymers with Counterion Distribution", in "Spectroscopy of Biological Molecules: New Directions" (8th European Conference on the Spectroscopy of Biological Molecules, 29 August - 2 September 1999, Enschede, The Netherlands), J. Greve, G. J. Puppels and C. Otto Eds., Kluwer Academic Publishers, Dordrecht (1999), The Netherlands, p. 223-224 (ISBN 0-7923-5847-3).
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8. **Cristina Muntean**, A. Ioachim, O. Petrean, "Evaluation of Microwave Absorption in DNA - Hydration Layer Systems", 6th European Conference on the Spectroscopy of Biological Molecules Proc. (3-8 September 1995, Villeneuve d'Ascq, France) J. C. Merlin, S. Turrell and J. P. Huvenne Eds., Kluwer Academic Publishers, Dordrecht (1995), The Netherlands, p. 333-334 (ISBN 0-7923-3628-3).
9. **Cristina Muntean**, N. Aldea, Monica Purcaru, "Dynamical Properties of DNA in a Microwave Field" in 5th International Conference on the Spectroscopy of Biological Molecules Proc., T. Theophanides, Jane Anastassopoulou, N. Fotopoulos Eds., Kluwer Academic Publishers, Dordrecht, The Netherlands (1993), p. 73-74 (ISBN 0-7923-2534-6).
10. **Cristina Muntean**, A. Ioachim, Calina Cornea, "Microwave Absorption in Plasmidic DNA Molecules" in 5th International Conference on the Spectroscopy of Biological Molecules Proc., T. Theophanides, Jane Anastassopoulou, N. Fotopoulos Eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993, p. 71-72 (ISBN 0-7923-2534-6).