

PUBLICACIONES CIENTÍFICAS

GRUPO DE ESPECTROSCOPIA ANALÍTICA Y SENSORES (GEAS)

Estrategias analíticas para el estudio de la actividad bactericida de iones plata y nanopartículas y sus efectos sinérgicos con antibióticos.

Isabel Abad, Ana Cristina Giménez, Mariam Bakir, Pilar Goñi, Francisco Laborda (GEAS)
Actualidad Analítica 87, 81-87 (2024)

Nanosilver-based materials as feed additives: Evaluation of their transformations along in vitro gastrointestinal digestion in pigs and chickens by using an ICP-MS based analytical platform.

Khaoula Ben-Jeddou, Mariam Bakir, M. Sierra Jiménez, M. Teresa Gómez, Isabel Abad, Francisco Laborda (GEAS)
Analytical and Bioanalytical Chemistry, 416, 3821-3833 (2024)

Effect of the dietary administration pattern of silver nanoparticles on growth performance, biodiversity of digestive microbiota and tissue retention in broiler chickens.

Yahya Zaoui, Alejandro Belanche, Khaola Ben-Jeddou, M. Sierra Jiménez, Guillermo Fondevila, Manuel Fondevila (GEAS)
Animal Feed Science and Technology, 309, 115888 (2024)

Synchrotron radiation and neutrons in art and archaeology – SR2A 2023.

Ina Reiche, Josefina Pérez-Arantegui, Christian Stieghorst (GEAS)
Applied Physics A, 130, 937 (2024)

Nanoplastics as competitors of natural colloids in the environment: The case of gadolinium complexes.

Celia Trujillo, Aubin Thibault, Francisco Laborda, Ryszard Lobinski, Javier Jimenez (GEAS)
Chemosphere, 369, 143810 (2024)

Glazes.

Pérez-Arantegui, Josefina (GEAS)
Encyclopedia of Archaeology (Second Edition), vol. 2, pp. 559-572, Editors: Thilo Rehren, Efthymia Nikita, Academic Press. ISBN 9780323907996 (2024)

Performance of single-cell ICP-MS for quantitative biodistribution studies of silver interactions with bacteria.

Ana Cristina Giménez, Isabel Abad, Pilar Goñi, Karmen Billimoria, Heidi Goenaga, Francisco Laborda (GEAS)
Journal of Analytical Atomic Spectrometry, 39(3), 743-753 (2024)

Looking at the Iron Age in the inland Iberia and the Mediterranean influences: ceramics from the archaeological site of El Pueyo de Marcuello (Huesca, Spain).

José Fabre, Josefina Pérez-Arantegui, Pilar Lapuente, María José Arbués (GEAS)
Journal of Cultural Heritage, 69, 10-17 (2024)

Bactericidal activity of silver nanoparticles: An analytical approach based on single cell and single particle inductively coupled plasma mass spectrometry analysis to determine silver species involved.

Ana Cristina Giménez, Isabel Abad, Mariam Bakir, Patricia Chueca, Pilar Goñi, Francisco Laborda (GEAS)
Microchemical Journal, 205, 111296 (2024)

Exploring the impact of silver-based nanomaterial feed additives on green algae through single-cell techniques.

Mariam Bakir, M. Sierra Jiménez, Francisco Laborda, Vera I. Slaveykova (GEAS)
Science of the Total Environment, 939, 173564 (2024)

Single particle inductively coupled plasma mass spectrometry metrology: Revisiting the transport efficiency paradigm.

Eduardo Bolea, Francisco Laborda (GEAS)
Spectrochimica Acta - Part B Atomic Spectroscopy, 216, 106941 (2024)

GRUPO UNIVERSITARIO DE INVESTIGACIÓN ANALÍTICA (GUIA)

Biobased polymer recycling: a comprehensive dive into the recycling process of PLA and its decontamination efficacy.

Robert Paiva, Margarita Aznar, Magdalena Wrona, Ana Paula de Lima, Cristina Nerín, Sandra A. Cruz (GUIA)
ACS applied polymer materials, 6(19), 12154-12163 (2024)

How Carbodiimide Modulates Oligomer Migration and Molar Mass in Recycled Poly(lactic acid): A Study Using UPLC-QTOF-MS.^E

Robert Paiva, Sophia H. F. Bonatti, Carlos Estremera, Magdalena Wrona, Vania M. Ramos, Ana Paula de Lima, Lucas H. Staffa, Cristina Nerín, Sandra A. Cruz (GUIA)
ACS applied polymer materials, 6(24), 15230-15241 (2024)

Microbes and Parameters Influencing Dark Fermentation for Hydrogen Production.

Soumya Gupta, Annabel Fernandes, Ana Lopes, Laura Grasa, Jesús Salafranca (GUIA)
Applied Sciences, 14, 10789 (2024)

Photo-Fermentative Bacteria Used for Hydrogen Production.

Soumya Gupta, Annabel Fernandes, Ana Lopes, Laura Grasa, Jesús Salafranca (GUIA)
Applied Sciences, 14(3), 1194 (2024)

Development of an organ-on-chip model for the detection of volatile organic compounds as potential biomarkers of tumour volatile organic compounds as potential biomarkers of tumour progression.

Clara Bayona, Magdalena Wrona, Teodora Ranelovic, Cristina Nerín, Jesús Salafranca, Ignacio Ochoa (GUIA)
Biofabrication, 16, 045002 (2024)

Sustainable and green strategies for active biopackaging: Application for seafood products—A critical review.

Lidia Ait Ouahioune, Magdalena Wrona, Davinson Pezo, Cristina Nerín, Djamel Djenane (GUIA)
Food Bioscience, 63, 105647

Development of innovative antioxidant food packaging systems based on natural extracts from food industry waste and *Moringa oleifera* leaves.

Giulia Barzan, Alessio Sacco, Andrea M. Giovannozzi, Chiara Portesi, Consolato Schiavone, Jesús Salafranca, Magdalena Wrona, Cristina Nerín, Andrea M. Rossi (GUIA)
Food Chemistry, 432, 136655 (2024)

Exploring soda contamination coming from paper straws through ultra-high-pressure liquid chromatography coupled with an ion mobility-quadrupole time-of-flight analyzer and advanced statistical analysis.

Elena Canellas, Paula Vera, Cristina Nerín, Jeff Goshawk, Nikila Dreolin (GUIA)
Food Packaging and Shelf Life, 41, 101237 (2024)

Identification of volatile and non-volatile migrants released during sous vide cooking by UPLC-IMS-QTOF and DI-SPME-GC-MS using a design of experiments approach.

Carlos Estremera, Robert Paiva, Margarita Aznar, Cristina Nerín, Celia Domeño (GUIA)
Food Packaging and Shelf Life, 43, 101297 (2024)

Safety assessment of silicone molds for food use: A comprehensive analysis of migration patterns and volatile compound release in European markets.

Magdalena Wrona, Lucía Aparicio, Valeria Alloca, Raquel Becerril, Cristina Nerín, Esther Asensio (GUIA)
Food Packaging and Shelf Life, 45(9), 101334 (2024)

Sodium erythorbate and hexametaphosphate loaded TPS/PBAT films: A multifunctional packaging for extending beef shelf-life.

Phanwipa Wongphan, Robert Da Silva, Cristina Nerín, Nathdanai Harnkarnsujarit (GUIA)
Food Packaging and Shelf Life, 46, 101396 (2024)

Analysis of Bioactive Aroma Compounds in Essential Oils from Algerian Plants: Implications for Potential Antioxidant Applications.

Anis Bertella, Gavril L. Gavril, Magdalena Wrona, Davinson Pezo, Abouamama Sidaoui, Kheira Benlahcen, Mebrouk Kihal, Ewa Olewnik, Jesús Salafranca, Cristina Nerín (GUIA)
Foods, 13, 749 (2024)

Tailoring the morphology and antibacterial activity of PBAT and thermoplastic cassava starch blown films with phosphate derivatives.

Wongphan, Phanwipa; Nerín, Cristina; Harnkarnsujarit, Nathdanai (GUIA)
International journal of biological macromolecules, 283(3), 137906 (2024)

Evaluation of new safety decontamination approaches at lab scale for recycled highdensity polyethylene (rHDPE) intended for food contact.

Estela Pérez, Celia Domeño, Cristina Nerín, Margarita Aznar (GUIA)
Journal of Chromatography A, 1736, 465348 (2024)

Designing safe recycled high-density polyethylene (HDPE) for child toys.

Paula Vera, Elena Canellas, Cristina Nerín (GUIA)
Journal of Hazardous Materials, 476, 135202 (2024)

Synthesis and quantification of oligoesters migrating from starch-based food packaging materials.

David Rupérez, Matthieu Rivière, Jacques Lebreton, Margarita Aznar, Filomena Almeida, Arnaud Tessier, Ronan Cariou, Cristina Nerín (GUIA)
Journal of Hazardous Materials, 476, 135202 (2024)

Volatile compounds and off-odors analysis of recycled pla for packaging applications: an essential factor for ensuring food safety and quality.

Robert Paiva, Magdalena Wrona, Cristina Nerín, Gavril, Georgiana L. Cruz, Sandra A. Andrea (GUIA)
Journal of polymers and the environment, 32, 6687-6697 (2024)

Phytochemical Study and In Vitro Antioxidant Activity of *Helianthemum cinereum* Along with Antitumor Activity of the Isolated trans-Tiliroside and Luteolin 4'-O- β -Xyloside.

Anis Bertella, Abla Smadi, Hakim Benhabrou, Diana Salvador, Magdalena Wrona, Helena Oliveira, Abouamama Sidaoui, Georgiana Gavril, Diana Pinto, Ewa Olewnik, Cristina Nerín, Artur M. S. Silva, Fatna Fatma (GUIA)
Molecules, 29(19), 5935 (2024)

Modifying cassava starch via extrusion with phosphate, erythorbate and nitrite: phosphorylation, hydrolysis and plasticization.

Phanwipa Wongphan, Cristina Nerin, Nathdanai Harnkarnsujarit (GUIA)
Polymers, 16(19), 2787 (2024)

LABORATORIO DE ANÁLISIS DE AROMA Y ENOLOGÍA (LAAE)

Mass Spectrometry-Based Non-Targeted Lipidome Analysis and Extraction of Markers for the Authentication of White and Black Truffle Species and Their Origin Determination.

Eva Tejedor, Pedro Marco, Markus Fischer, Marina Creydt (LAAE)
Agriculture, 14(12), 2350 (2024)

Volatilomics of interactions between native yeasts and grapevine cultivars reveals terroir specificities in wines from Douro region.

Viviana Martins, Antonio Teixeira, Richard Breia, Marcio Nóbrega, Ricardo Macedo, Catarina Barbosa, Hernani Gerós, H., Ricardo López (LAAE)
Bioscience, 62, 105463 (2024)

Sensory-directed approach to explore cider typicity: the case of ciders from the Canary Islands (Spain).

Roberto S. Di Fede, Maribel Gonzalez, Eva Parga, Pablo Alonso, Purificación Fernández, Cristina Peña, Pilar Sáenz (LAAE)
British Food Journal, Vol. 126(6), 2363-2380 (2024)

Green Extraction Technologies and Kombucha Elaboration Using Strawberry Tree (*Arbutus unedo*) Fruits to Obtain Antioxidant and Anti-Inflammatory Fractions.

María de las Nieves, Eva Tejedor, Laura Jaime, Susana Santoyo, Diego Morales (LAAE)
Food and Bioprocess Technology, 18 (1), 231-245 (2024)

PVDF hydrophobic hollow fiber membrane modules for partial dealcoholization of red wine by osmotic distillation as a strategy to minimize the loss of aromas.

Javier Esteras, Óscar de la Iglesia, Wiliam Marechal, Olivier Lorain, Cristina Peña, Ana Escudero, Carlos Téllez, Joaquín Coronas (LAAE)
Food and Bioproducts Processing, 143, 191-201 (2024)

Impact of *Saccharomyces cerevisiae* yeast inoculation mode on wine composition.

Fanny Bordet, Remy Romanet, Florian Bahut, Vicente Ferreira, Cristina Peña, Anne J. Ortiz, Chloé Roullier, Hervé Alexandre (LAAE)
Food Chemistry, 441, 138391 (2024)

Kinetics of aroma formation from grape-derived precursors: Temperature effects and predictive potential.

Elayma Sánchez, Ricardo López, Vicente Ferreira (LAAE)
Food Chemistry, 438, 137935 (2024)

Volatile changes during black truffle (*Tuber melanosporum*) ontogeny.

Pedro Marco, M. Angeles Sanz, Eva Tejedor, Sergi García, Pierluigi Caboni, Santiago Reyna, Sergio Sánchez (LAAE)
Food Research International, 194, 114938 (2024)

Black Truffle Aroma Evaluation: SPME-GC-MS vs. Sensory Experts.

Eva Tejedor, Sergi García, Sergio Sánchez, M. Ángeles Sanz, Pedro Marco (LAAE)
Foods, 13(6), 837 (2024)

Elaboration and Characterization of Novel Kombucha Drinks Based on Truffles (*Tuber melanosporum* and *Tuber aestivum*) with Interesting Aromatic and Compositional Profiles.

Diego Morales, Laura de la Fuente, Pedro Marco, Eva Tejedor (LAAE)
Foods, 13(13), 2162 (2024)

Sensory Characteristics and Volatile Organic Compound Profile of Wild +Edible Mushrooms from Patagonia, Argentina.

Carolina Barroetaveña, Gabriela C. González, Eva Tejedor, Carolina Toledo, María B. Pildain (LAAE)
Foods, 13(21), 3447 (2024)

Utilizing green solvents in compressed fluids technologies for extracting bioactive compounds from *Ruta graveolens* L.

Lorena Reyes, Gerardo Alvarez, Jose A. Mendiola, Gerardo del Villar, Alma A. Martínez, Elena Ibáñez, Mónica Bueno (LAAE)
Industrial Crops & Products, 216, 118717 (2024)

A two-run heart-cut multidimensional gas chromatography method using flame ionization and mass spectrometry for automated and robust determination of nearly complete wine aroma-volatile profiles.

Óscar Castejón, Ricardo Lopez, Ignacio Ontañón, Vicente Ferreira (LAAE)
Journal of Chromatography A, 1713, 464501 (2024)

Comprehensive Characterization of *Tuber maculatum*, New in Uruguay: Morphological, Molecular, and Aromatic Analyses.

Francisco Kuhar, Eva Tejedor, Alejandro Sequeira, David Pelissero, Mariana Cosse, Domizia Donnini, Eduardo Nouhra (LAAE)
Journal of Jungi, 10(6), 421 (2024)

Buscando la calidad aromática de los vinos en un contexto de cambio climático.

Mónica Bueno, Roberto Serrano, Pilar Sáenz-Navajas, Séverine Camy, Olivier Geffroy, Ignacio Ontañón (LAAE)
La Semana Vitivinícola, 21784 (2024)

Combined omics expose microbial niches of fungi and bacteria correlating with wine volatile profiles in Douro wine region.

Viviana Martins, Ricardo López, Antonio Teixeira, Hernani Gerós (LAAE)
LWT, 193, 115769 (2024)

Alternative strategies for eliminating hydrogen sulfide and methanethiol from wine: Results and learnings.

Diego Sánchez, Eduardo Vela, Vicente Ferreira, Ignacio Ontañón (LAAE)
OENO One, 58(4), (2024)

The relevant and complex role of ethanol in the sensory properties of model wines.

Arancha de-la-Fuente, Ignacio Arias, Ana Escudero, Pilar Sáenz, Vicente Ferreira (LAAE)
OENO One, 58(3), (2024)

The remarkable effects of the non-volatile matrix of wine on the release of volatile compounds evaluated by analysing their release to the headspaces.

Ricardo Lopez, Yan Wen, Vicente Ferreira (LAAE)
OENO One, 58(2), (2024)

GRUPO DE INVESTIGACIÓN DE MÉTODOS DE ANÁLISIS RÁPIDOS (MARTE)

ICP-MS en modo de evento individual.

Martín Resano, Maite Aramendía, Esperanza García-Ruiz, Antonio Bazo, Eduardo Bolea-Fernández, Ana Rúa-Ibarz, Thibaut Van Acker, Frank Vanhaecke (MARTE)
Actualidad Analítica, 85, 33-40 (2024)

Intensity-and time-based strategies for micro/nano-sizing via single-particle ICP-mass spectrometry: A comparative assessment using Au and SiO₂ as model particles.

Antonio Bazo, Eduardo Bolea, Ana Rúa, Maite Aramendía, Martín Resano (MARTE)
Analytica Chimica Acta, 1331, 343305 (2024)

High-Resolution Continuum Source Atomic Absorption Spectrometry – Theory and Applications.

Bernhard Welz, Maria Goreti, Stefan Florek, Michael Okruss, Mao Dong Huang, Helmut Becker, Martín Resano (MARTE)
Encyclopedia of Analytical Chemistry: Applications, Theory and Instrumentation. Editor: Wiley online Library. ISBN 9780471976707 (2024)

A comparison of calibration strategies for quantitative laser ablation ICP-mass spectrometry (LA-ICP-MS) analysis of fused catalyst samples.

Ana Rúa, Thibaut Van Acker, Eduardo Bolea, Marina Boccongelli, Frank Vanhaecke (MARTE)
Journal of Analytical Atomic Spectrometry, 39, 888–899 (2024)

Atomic spectrometry update: review of advances in the analysis of metals, chemicals and materials.

Eduardo Bolea, Robert Clough, Andy Fisher, Bridget Gibson, Ben Russell (MARTE)
Journal of Analytical Atomic Spectrometry, 39, 2617–2693 (2024)

Boron elemental and isotopic determination via the BF diatomic molecule using high-resolution continuum source graphite furnace molecular absorption spectrometry.

Maite Aramendía, André L. M. de Souza, Flavio V. Nakadi, Martín Resano (MARTE)
Journal of Analytical Atomic Spectrometry, 39, 767–779 (2024)

Extending the application range of Hg isotopic analysis to sub- $\mu\text{g L}^{-1}$ levels using cold vapor generation multi-collector inductively coupled plasma-mass spectrometry with 1013 ohm Faraday cup amplifiers.

Laura Suárez, Eduardo Bolea, Lana Abou, Mathias, Pablo Rodríguez, Jose Ignacio Garcia, Frank Vanhaecke (MARTE)
Journal of Analytical Atomic Spectrometry, 39, 592–600 (2024)

An evaluation of the analytical and biological robustness of a method for quantifying iron in individual red blood cells via single-cell tandem ICP-mass spectrometry.

Rinus Dejonghe, Eduardo Bolea, Ana Lores, Thibaut Van Acker, Ana Rúa, Olivier De Wever, Frank Vanhaecke (MARTE)
Microchemical Journal, 207, 112013 (2024)

Development and initial evaluation of a combustion-based sample introduction system for direct isotopic analysis of mercury in solid samples via multi-collector ICP-mass spectrometry.

Eduardo Bolea, Ana Rúa, Jorge Alves, Frank Vanhaecke (MARTE)
Talanta, 276, 126210 (2024)

Tracing isotopically labeled selenium nanoparticles in plants via single-particle ICP-mass spectrometry.

Bruna Moreira Freire, Ana Rua, Flavio V. Nakadi, Eduardo Bolea, Juan J. Barriuso, Camila Neves, Maite Aramendía, Bruno Lemos, Martín Resano (MARTE) Talanta, 277, 126417 (2024)

GRUPO DE NANOSENSORES Y SISTEMAS BIOANALÍTICOS (N&B)

Colorimetric enzymatic rapid test for the determination of atropine in baby food using a smartphone.

Mario Domínguez, Dana Moraru, Santiago Lasso, Isabel Sanz, Susana de Marcos, Javier Galbán (N&SB) Analytical and Bioanalytical Chemistry, 416, 7317-7323 (2024)

Ir(III) Half-Sandwich Photosensitizers with a n-Expansive Ligand for Efficient Anticancer Photodynamic Therapy.

Carlos Gonzalo, Elisenda Zafon, Juan Angel Organero, Félix A. Jalón, Joao Carlos Lima, Gustavo Espino, Ana María Rodríguez, Lucía Santos, Artur J. Moro, Sílvia Barrabés, Jessica Castro, Javier Camacho, Anna Massaguer, Blanca R. Manzano, Gema Durá (N&SB) Journal of Medicinal Chemistry, 67(3), 1783-1811 (2024)

Towards new fluorometric methodologies based on the in-situ generation of gold nanoclusters.

Jesús Navarro, Gemma Cepriá, Javier Camacho, Santiago Martín, Alejandro González Orive, Susana de Marcos, Javier Galbán (N&SB) Talanta, 266(2), 125119 (2024)

QUÍMICA Y MEDIO AMBIENTE (QMA)

Microdetermination of piroxicam in pharmaceutical formulations by complexation with fe(III) and image scanning densitometry.

Waheed Uz Zaman; Muhammad Salman, Umar Farooq, Amara Dar, Isma Haq, Tahira Burhan, Jami Anwar, Jesús Anzano, Umer Shafique (QMA) Journal of the Turkish Chemical Society, Section a: Chemistry, 11(3), 1245-1254 (2024)

A combined study of gamma spectrometry and inductively coupled plasma spectroscopy reveals persistent anthropogenic radioactive pollution on Deception.

Elisa Abás, César Marina, Carmen Pérez, Jorge Puimedón, Jesús Anzano (QMA) Microchemical Journal, 196, 109575 (2024)

OTROS

Reversible alignment of nanoparticles and intracellular vesicles during magnetic hyperthermia experiments.

Yilian Fernández, Sergiu Ruta, Amira Páez, Thomas S van Zanten, Sian Gleadhall, Raluca M. Fratila, María Moros, Maria del Puerto Morales, Akira Satoh, Roy W Chantrell, David Serantes, Lucía Gutiérrez Advanced Functional Materials 34(40), 2405334

Periodic table screening for enhanced positive contrast in MRI and in vivo uptake in glioblastoma.

Aitor Herráiz, M Puerto Morales, Lydia Martínez-Parra, Nuria Arias-Ramos, Pilar López-Larrubia, Lucía Gutiérrez, Jesús Mejías, Carlos Díaz, Jesús Ruiz, Fernando Herranz Chemical Science 15(22), 8578-8590

**Beyond Newton's law of cooling in evaluating magnetic hyperthermia performance:
a device-independent procedure.**

Sergiu Ruta, Yilian Fernández, Samuel E. Rannala, M. Puerto Morales, Sabino Veintemillas,
Carlton Jones, Lucía Gutiérrez, Roy W Chantrell, David Serantes
Nanoscale Advances 6(16), 4207-4218