

### 3.5. PUBLICACIONES CIENTÍFICAS

#### 3.5.1. PUBLICACIONES CIENTÍFICAS INTERNACIONALES

**How to trust size distributions obtained by single particle inductively plasma mass spectrometry analysis.**

Ana C. Giménez-Ingalaturre, Khaoula Ben-Jeddou, Josefina Pérez-Arantegui, M. Sierra Jiménez, Eduardo Bolea, Francisco Laborda (GEAS)  
Analytical and Bioanalytical Chemistry. DOI: 10.1007/s00216-022-04215-z (2022)

**Effect of dietary addition of silver nanoparticles on growth performance and tissue retention in broilers.**

Y. Zaoui, Khaoula Ben-Jeddou, M. Sierra Jiménez, Francisco Laborda, Guillermo Fondevila, Manuel Fondevila (GEAS)  
Animal Science Proceedings, 13, 3, 430-431 (2022)

**Single particle inductively coupled plasma mass spectrometry: A valuable tool in environmental analysis.**

Mariam Bakir, Khaoula Ben-Jeddou, Ana C. Giménez I., Eduardo Bolea, Francisco Laborda (GEAS)  
Environmental Nanopollutants: Sources, Occurrence, Analysis and Fate, chapter 13, pp 321-334. Eds. Javier Jiménez Lamana, Joanna Szpunar. RSC. ISBN 978-1-83916-489-7 (2022)

**Exploring the boundaries in the analysis of large particles by single particle inductively coupled plasma mass spectrometry: application to nanoclays.**

David Ojeda, Eduardo Bolea, Josefina Pérez-Arantegui, Francisco Laborda (GEAS)  
Journal of Analytical Atomic Spectrometry, 37, 1501-1511 (2022)

**Contribution to optimization and standardization of antibacterial assays with silver nanoparticles: the culture medium and their aggregation.**

Ana C. Giménez Ingalaturre, Encarnación Rubio, Patricia Chueca, Francisco Laborda, M. Pilar Goñi (GEAS)  
Journal of Microbiological Methods, 203, 106618 (2022)

**In Vitro Genotoxicity Evaluation of an Antiseptic Formulation Containing Kaolin and Silver Nanoparticles.**

Adriana Rodriguez, Amaya Azqueta, Francisco Laborda, Ana C. Giménez I., Alba Ezquerra, Luis Lostao, Adela López de Cerain (GEAS)  
Nanomaterials, 12, 914 (2022)

**Goya dans les musées de Saragosse (Espagne): contributions analytiques non invasives à l'étude de l'oeuvre du peintre.**

Josefina Pérez-Arantegui (GEAS)  
Technè, 53, 22-29 (2022)

**Electrochemical vapor generation.**

Eduardo Bolea, Francisco Laborda (GEAS)  
Vapor Generation Techniques for Trace Element Analysis: Fundamental Aspects, chapter 10, pp. 317-345. Eds. Alexandro D'Ulivo, Ralph Sturgeon. Elsevier. ISBN 978-0-323-85834-2 (2022)

**Long-term study of antibiotic presence in Ebro river basin (Spain): identification of the emission sources.**

Samuel Moles, Sebastiano Gozzo, M. Peña Ormad, Rosa Mosteo, Jairo Gómez, Francisco Laborda, Joanna Szpunar (GEAS)  
Water, 14, 1033 (2022)

**Hybrid Antimicrobial Films Containing a Polyoxometalate-Ionic Liquid.**

Ana G. Enderle, Isabel Franco, Elena Atrián, Rafael Martín, Leonardo Lizarraga, Maria J. Culzoni, Mariela Bollini, Jesus M. De la Fuente, Filomena Almeida e Silva, Crsten Streb, Scott G. Mitchell (GUIA)  
ACS Applied Polymer Materials, 4, 6, 4144-4153 (2022)

**Prediction of collision cross-section values for extractables and leachables from plastic products.**

Xuechao Song, Nicola Dreolin, Elena Canellas, Jeff Goshawk, Cristina Nerín (GUIA)  
Environmental Science & Technology, 56, 13, 9463–9473 (2022)

**Analysis of potential migration compounds from silicone molds for food contact by SPME-GC-MS.**

Esther Asensio, Joaquín Uranga, Cristina Nerín (GUIA)  
Food and Chemical Toxicology, 165, 113130 (2022)

**Guidance in selecting analytical techniques for identification and quantification of non-intentionally added substances (NIAS) in food contact materials (FCMS).**

Cristina Nerín, Simeón Bourdoux, Birgit Faust, Thomas Gude, Celine Lesueur, Thomas Simat, Angela Stoermer, Els Van Hoek, Peter Oldring (GUIA)  
Food Additives and Contaminants—Parte A, 39 (3), 620-643 (2022)

**Developing ethyl lauroyl arginate antimicrobial films to combat Listeria monocytogenes in cured ham.**

Nicolás Gracia, Fernando Ruiz, Scott G. Mitchell, Cristina Nerín, Filomena Almeida e Silva (GUIA)  
Food Control, 141, 109164 (2022)

**Migration of mineral oil aromatic hydrocarbons (MOAH) from cardboard containers to dry food and prediction tool.**

Janira Jaen, Celia Domeño, Sara Úbeda, Margarita Aznar, Cristina Nerín (GUIA)  
Food Control, 138, 109016 (2022)

**Development of an analytical method for the determination of mineral oil aromatic hydrocarbons (MOAH) from printing inks in food packaging.**

Janira Jaen, Celia Domeño, Cristina Nerín (GUIA)  
Food Chemistry, 397, 133745 (2022)

**Ceratonia siliqua L. kibbles, seeds and leaves as a source of volatile bioactive compounds for antioxidant food biopackaging applications.**

Lidia Ait Ouahioune, Magdalena Wrona, Raquel Becerril, Jesús Salafranca, Cristina Nerín, Djamel Djenane (GUIA)  
Food Packaging and Shelf Life, 31, 100764 (2022)

**Hydrogenated amorphous carbon film deposited by plasma on recycled polypropylene as a functional barrier to hazardous migrants.**

Robert Paiva, Magdalena Wrona, Cristina Nerín, Sandra Andrea Cruz (GUIA)  
Food Packaging and Shelf-life, 33, 100864 (2022)

**Migration of mineral oil aromatic hydrocarbon (MOAH) from hot melt adhesives used in food packaging materials.**

Janira Jaen, Celia Domeño, Paula Vera, Cristina Nerín (GUIA)  
Food Packaging and Shelf Life, 33, 100885 (2022)

**Poly lactide-based films with the addition of poly(ethylene glycol) and extract of propolis—physico-chemical and storage properties.**

Ewa Olewnik, Magdalena Gierszewska, Magdalena Wrona, Cristina Nerín, Sylwia Grabska (GUIA)  
Foods, 11 (10), 1488 (2022)

**In vitro propagation and phytochemistry of thymol producing plants from a horticultural form of *Thymus x josephi-angeli* Mansanet & Aguil. (Lamiaceae).**

Esther Asensio, Roberto J. Méndez, Jorge J. Vicedo (GUIA)  
Horticulturae, 8 (12), 1188 (2022)

**A collision cross section database for extractables and leachables from food contact materials.**

Xuechao Song, Elena Canellas, Nicola Dreolin, Jeff Goshawk, Cristina Nerín (GUIA)  
Journal of Agricultural and Food Chemistry, 70(14), 4457-4466 (2022)

**Identification of nonvolatile migrates from food contact materials using ion mobility-high-resolution mass spectrometry and in silico prediction tools.**

Xuechao Song, Elena Canellas, Nicola Dreolin, Jeff Goshawk, Cristina Nerín (GUIA)  
Journal of Agricultural and Food Chemistry, 70(30), 9499-9508 (2022)

**Prediction of Collision Cross Section Values: Application to Non-Intentionally Added Substance Identification in Food Contact Materials.**

Xue-Chao Song, Elena Canellas, Nicola Dreolin, Jeff Goshawk, Cristina Nerin (GUIA)  
Journal of Agricultural and Food Chemistry, 70(4), 1272-1281 (2022)

**The characterization and influence factors of semi volatile compounds from mechanically recycled Polyethylene terephthalate (rPET) by combining GC×GC-TOFMS and chemometrics.**

Siliang Wu, Xuefeng Wu, Hanke Li, Dan Li, Jianguo Zheng, Qinbao Lin, Cristina Nerín, Huaining Zhong, Ben Dong (GUIA)  
Journal of Hazardous Materials, 439, 129583 (2022)

**The Role of Residual Contaminants and Recycling Steps on Rheological Properties of Recycled Polypropylene.**

Robert Paiva, Isabelly Bertochi, Magadalena Wrona, Cristina Nerín, Andrea Cruz (GUIA)  
Journal of Polymers and the Environment, 30(2), 494–503 (2022)

**Novel active biopackaging incorporated with macerate of carob (*Ceratonia siliqua* L.) to extend shelf-life of stored Atlantic salmon fillets (*Salmo salar* L.).**

Lidia Ait Ouahiune, Magdalena Wrona, Cristina Nerin, Djamel Djenane (GUIA)  
LWT - Food Science and Technology, 156, 113015 (2022)

**Mechanochemically Scaled-Up Alpha Cyclodextrin Nanosponges: Their Safety and Effectiveness as Ethylene Scavenger.**

David Rupérez, Nicolás Gracia, Eva Clavero, Filomena Almeida e Silva, Cristina Nerín (GUIA)  
Nanomaterials, 12, 2900 (2022)

**Application of untargeted metabolomics to determine volatile compounds from the Spanish plant *Arctostaphylos uva-ursi* used as tea.**

Magdalena Wrona, Davinson Pezo, Maria Anna Rovito, Paula Vera, Cristina Nerín, Esther Asensio (GUIA)  
Separations, 9, 68 (2022)

**Analytical strategies for the determination of biogenic amines in dairy products.**

Marta Moniente, Laura Botello M., Diego García G., Rafael Pagán, Ignacio Ontañón (LAAE).  
Comprehensive Reviews in Food Science and Food Safety, 21 (4), 3612-3646 (2022)

**Modeling grape taste and mouthfeel from chemical composition.**

Sara Ferrero, Alejandro Suárez, Chelo Ferreira, Daniele Perenzoni, Panagiotis Arapitsas, Fulvio Mattivi, Vicente Ferreira, Purificación Fernández Z., M. Pilar Sáenz-Navajas (LAAE)  
Food Chemistry, 371, 131168 (2022)

**Modulation of aroma and chemical composition of Albariño semi-synthetic wines by non-wine *Saccharomyces* yeasts and bottle aging.**

Dolores Pérez, Marie Denat, Romain Minebois, José M<sup>a</sup> Heras, José M. Guillamón, Vicente Ferreira, Amparo Querol (LAAE)  
Food Microbiology, 104, 103981 (2022)

**Accurate quantitative determination of the total amounts of Strecker aldehydes contained in wine. Assessment of their presence in table wines.**

Mónica Bueno, Oscar Castejón, Manuel Aragón, Ignacio Ontañón, Cristina Peña, Vicente Ferreira (LAAE).  
Food Research International, 162, 112125 (2022)

**Potential of histamine-degrading microorganisms and diamine oxidase (DAO) for the reduction of histamine accumulation along the cheese ripening process.**

Marta Moniente, Diego García G., Goretti Llamas, Ignacio Ontañón, Raquel Virto, Rafael Pagán, Laura Botello (LAAE).  
Food Research International, 160, 111735 (2022)

**An index for wine acetaldehyde reactive potential (ARP) and some derived remarks about the accumulation of acetaldehyde during wine oxidation.**

Almudena Marrufo, Vicente Ferreira, Ana Escudero (LAAE)  
Foods, 11, 476 (2022)

**Maturation of Moristel in different vineyards: amino acid and aroma composition of mistelles and wines with particular emphasis in Strecker aldehydes.**

Ignacio Arias P., Ignacio Ontañón, Vicente Ferreira, Ana Escudero (LAAE)  
Foods, 11, 958 (2022)

**Expanding the diversity of Chardonnay aroma through the metabolic interactions of *Saccharomyces cerevisiae* cocultures.**

Fanny Bordet, Remy Romanet, Florian Bahut, Jordi Ballester, Cristina Peña, Vicente Ferreira, Regis Gougeon, Anne Julien-Ortiz, Chloe Roullier-Gall, Hervé Alexandre (LAAE)  
Frontiers in Microbiology, 13, 1032842 (2022)

**Effect of non-wine *Saccharomyces* yeasts and bottle aging on the release and generation of aromas in semi-synthetic Tempranillo wines.**

Dolores Pérez, Marie Denat, José M<sup>a</sup> Heras, José M. Guillamón, Vicente Ferreira, Amparo Querol (LAAE)  
International Journal of Food Microbiology, 365, 10955 (2022)

**Development and validation of a method for the analysis of halophenols and haloanisoles in cork bark macerates by stir bar sorptive extraction heart-cutting two-dimensional gas chromatography negative chemical ionization mass spectrometry.**

Alexis Marsol, Susana Aínsa, Ricardo López, Vicente Ferreira (LAAE)  
Journal of Chromatography A, 1673, 463186 (2022)

**Can aldehyde accumulation rates of red wines undergoing oxidation be predicted in accelerated conditions? The controverted role of aldehydes-polyphenol reactivity.**

Almudena Marrufo, Vicente Ferreira, Ana Escudero (LAAE)  
Journal of the Science of Food and Agriculture, 102 (9), 3869–3878 (2022)

**The diverse effects of yeast on the aroma of non-sulfite added white wines throughout aging.**

Marie Denat, Ignacio Ontañón, Amparo Querol, Vicente Ferreira (LAAE)  
LWT-Food Science and Technology, 158, 113111 (2022)

**The significance of cheese sampling in the determination of histamine concentration: Distribution pattern of histamine in ripened cheeses.**

Marta Moniente, Diego García Gonzalo, Goretti Llamas, Joen Garate, Ignacio Ontañón, Arrate Jaureguibeitia, Raquel Virto, Rafael Pagán, Laura Botello Morte (LAAE)  
LWT-Food Science and Technology, 171, 114099 (2022)

**Wine aroma vectors and sensory attributes.**

Vicente Ferreira, Arancha de la Fuente, M. Pilar Sáenz-Navajas (LAAE)  
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**Generation of intra- and interspecific *Saccharomyces* hybrids with improved oenological and aromatic properties.**

Dolores Pérez, Marie Denat, Laura Pérez T., José M<sup>a</sup> Heras, José M. Guillamón, Vicente Ferreira, Amparo Querol (LAAE)  
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**Factors That Affect the Accumulation of Strecker Aldehydes in standardized wines. The importance of pH in oxidation.**

Almudena Marrufo, Vicente Ferreira, Ana Escudero (LAAE)  
Molecules, 27, 3056 (2022)

**A novel approach for adapting the standard addition method to single particle-ICP-MS for the accurate determination of NP size and number concentration in complex matrices.**

Maite Aramendía, Juan Carlos García M., Elisa Vereda, Raúl Garde, Antonio Bazo, Javier Resano, Martín Resano (MARTE)  
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**Living in a transient world: ICP-MS reinvented via time-resolved analysis for monitoring single events.**

Martin Resano, Maite Aramendía, Esperanza García R., Antonio Bazo, Eduardo Bolea F., Frank Vanhaecke (MARTE)  
Chemical Science, 13, 4436-4473 (2022)

**High-resolution continuum source graphite furnace molecular absorption spectrometry for the monitoring of Sr isotopes via SrF formation: a case study.**

Antonio Bazo, Raúl Garde, Esperanza Garcia R., Maite Aramendía, Flávio V Nakadi, Martín Resano (MARTE)  
Journal of Analytical Atomic Spectrometry, 37, 2517-2528 (2022)

**Gold nanoparticle formation as an indicator of enzymatic methods: colorimetric L-phenylalanine determination.**

Alba Martín Barreiro, Susana de Marcos, Javier Galbán (N&SB)  
Analytical and Bioanalytical Chemistry, 414, 2641-2649 (2022)

**A mobile phone digital image method designed for efficient durum wheat flour characterization.**

Ángel López Molinero (N&SB)  
Analytical Methods, 14 (35), 3416-3422 (2022)

**Solving Color Reproducibility between Digital Devices: A Robust Approach of Smartphones Color Management for Chemical (Bio) Sensors.**

Pablo Cebrián, Leticia Pérez S., Isabel Sanz V., Ángel López M., Susana de Marcos, Javier Galbán (N&SB)  
Biosensors, 12 (5), 341 (2022)

**Selective generation of gold nanostructures mediated by flavo-enzymes to develop optical biosensors.**

Javier Camacho, Susana de Marcos, Verónica Mora, Javier Galbán (N&SB)  
Biosensors & Bioelectronics, 215, 114579 (2022)

**High-Performance Thin-Layer Chromatography-Densitometry Tandem ESI-MS to Evaluate Phospholipid Content in Exosomes of Cancer Cells.**

María Sancho A., Carmen Jarne, María Savirón, Pilar Martín, Luis Membrado, Vicente L. Cebolla, Jesús Santamaría (N&SB)  
International Journal of Molecular Sciences, 23 (3), 1150 (2022)

**Lipidomic Studies Based on High-Performance Thin-Layer Chromatography.**

Vicente Cebolla, Carmen Jarne, Luis Membrado, Jose M. Escuín, Jesús Vela (N&SB)  
Journal of Planar Chromatography - Modern TLC, 35, 229–241 (2022)

**A review of atmospheric aerosols in Antarctica: from characterization to data processing.**

Jesús Anzano, Elisa Abás, César Marina, Javier del Valle, David Galán, Mariano Laguna, Susana Cabredo, Luis V. Pérez, Jorge O. Cáceres, Jamil Anwar (QMA)  
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**Evidence of human impact in Antarctic region by studying atmospheric aerosols.**

Elisa Abás, César Marina, Mariano Laguna, Roberto Lasheras, Patricia Rivas, Pablo Peribáñez, Javier del Valle, Miguel Escudero, Abraham Velásquez, Jorge O. Cáceres, Luis V. Pérez, Jesús Anzano (QMA)  
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**Characterization of atmospheric aerosols in the antarctic region using raman spectroscopy and scanning electron microscopy.**

César Marina, Luis Perez, Jesús Anzano, Silvia Fernández O., Julene Aramendia, Leticia Gómez N., Alberto de Diego, Juan M. Madariaga, Jorge O. Cáceres (QMA)  
Spectrochimica Acta Part A:Molecular and Biomolecular Spectroscopy, 266, 120452 (2022)

**Interesting features finder (IFF): Another way to explore spectroscopic imaging data sets giving minor compounds and traces a chance to express themselves.**

Qicheng Wu, César Marina, Jorge O. Cáceres, Jesús Anzano, Vincent Motto-Ros, Ludovic Duponchel (QMA)  
Spectrochimica Acta Part A:Molecular and Biomolecular Spectroscopy, 195, 106508 (2022)

**Influence of Magnetic Nanoparticle Degradation in the Frame of Magnetic Hyperthermia and Photothermal Treatments.**

Yilian Fernández, Laura Asín, Lilianne Beola, Raluca M Fratila, Lucía Gutiérrez  
ACS Applied Nano Materials, 5 (11), 16220-16230 (2022)

**Iron Speciation in Animal Tissues Using AC Magnetic Susceptibility Measurements: Quantification of Magnetic Nanoparticles, Ferritin, and Other Iron-Containing Species.**

Yilian Fernández, Laura Asín, Lilianne Beola, María Moros, Jesús M. de la Fuente, Raluca M Fratila, Valeria Grazú, Lucía Gutiérrez  
ACS Applied Bio Materials, 5 (5), 1879-1889 (2022)

**Engineered Protein-Driven Synthesis of Tunable Iron Oxide Nanoparticles as T1 and T2 Magnetic Resonance Imaging Contrast Agents.**

Antonio Aires, Yilian Fernández, Gabriela Guedes, Eduardo Guisasola, Lucía Gutiérrez, Aitziber L Cortajarena  
Chemistry of Materials, 34, 24, 10832–10841 (2022)

**Iron oxide-manganese oxide nanoparticles with tunable morphology and switchable MRI contrast mode triggered by intracellular conditions.**

David García S., Paula Milán, Nuria Lafuente, Cristina Navío, Lucía Gutiérrez, Lorena Cussó, Manuel Desco, Daniel Calle, Álvaro Somoza, Gorka Salas  
Journal of Colloid and Interface Science, 613, 447-460 (2022)

**Preface to the special issue " Scientific and Clinical Applications of Magnetic Carriers 2022".**

Silvio Dutz, Urs Häfeli, Lucia Gutierrez, Maciej Zborowski, Wolfgang Schütt  
Journal of Magnetism and Magnetic Materials, 564, 170205 (2022)

**Triphenylene-ethylammonium tetrachlorometallate salts: multicolumnar mesophases, thermochromism and Langmuir films.**

María Barcenilla, M. Jesús Baena, Bertrand Donnio, Benoît Heinrich, Lucía Gutiérrez, Silverio Coco, Pablo Espinet  
Journal of Materials Chemistry C, 10, 24, 9222-9231 (2022)

**Different coatings on magnetic nanoparticles dictate their degradation kinetics in vivo for 15 months after intravenous administration in mice.**

Yadileiny Portilla, Yilian Fernández, Sonia Pérez, Vladimir Mulens-Arias, M. del Puerto Morales, Lucía Gutiérrez, Domingo F Barber  
Journal of Nanobiotechnology, 20 (1), 1-23 (2022)

**Tunable Control of the Structural Features and Related Physical Properties of  $Mn_xFe_{3-x}O_4$  Nanoparticles: Implication on Their Heating Performance by Magnetic Hyperthermia.**

Susel Del Sol Fernández, Oscar F. Odio, Paula M. Crespo, E Obed Pérez, Gorka Salas, Lucía Gutiérrez, M. del Puerto Morales, Edilso Reguera  
Journal of Physical Chemistry C, 126, 24, 10110–10128 (2022)

**Magnetogenetics: remote activation of cellular functions triggered by magnetic switches.**

Susel del Sol Fernández, Pablo Martínez, Pilar Gomollón, Christian Castro, Lucía Gutiérrez, Raluca M Fratila, Maria Moros.  
Nanoscale, 14, 2091-2118 (2022)

**Magneto-optical hyperthermia agents based on probiotic bacteria loaded with magnetic and gold nanoparticles.**

Víctor Garcés, Ana González, Natividad Gálvez, José M. Delgado, José J. Calvino, Susana Trasobares, Yilian Fernández, Lucía Gutiérrez, José M. Domínguez  
Nanoscale 14 (15), 5716-5724 (2022)

**Iron–Gold Nanoflowers: A Promising Tool for Multimodal Imaging and Hyperthermia Therapy.**

Evangelia Christou, John R. Pearson, Ana M. Beltrán, Yilian Fernández, Lucía Gutiérrez, Jesús M de la Fuente, Francisco Gámez, María L. García M., Carlos Caro  
Pharmaceutics, 14 (3), 636 (2022)

**Ultrasmall Manganese Ferrites for In Vivo Catalase Mimicking Activity and Multimodal Bioimaging.**

Susana Carregal, Ana B. Miguel, Lydia Martínez-Parra, Yolanda Martí, Pablo Hernansanz, Yilian Fernández, Sandra Plaza, Lucía Gutiérrez, M. del Mar Muñoz, Juliana Carrillo, Marina Piñol, Pierre Lecante, Zuriñe Blasco, Lucía Fadón, Ana C Almansa, Marco Möller, Dorleta Otaegui, José A. Enríquez, Hugo Groult, Jesús Ruíz-Cabello  
Small, 18 (16) 2106570 (2022)

### 3.5.2. PUBLICACIONES CIENTÍFICAS NACIONALES

**Aportaciones analíticas al conocimiento y la conservación de la colección de arte de Asia oriental en el museo de Zaragoza.**

Josefina Pérez-Arategui, Carmen Gallego, Nerea Díez de Pinos (GEAS)  
Actas del IV Congreso de Arqueología y Patrimonio Aragonés. Colegio Oficial de Doctores y Licenciados en Filosofía y Letras y en Ciencias de Aragón, 497-508 (2022)

**Las acuñaciones del rey Sancho Ramírez de Aragón y Pamplona (1076 a 1094) en los Museos de Huesca y Zaragoza: iconografía y análisis químicos.**

Juan A. Paz, Jose Antonio Cuchí, Isidro Aguilera, Josefina Pérez-Arategui, M. José Arbués, Silvia Abad, Juan C. Sánchez-Garnica, Pablo Martín-Ramos (GEAS)  
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**Interpretación y modelización de medidas cromáticas en métodos de colorimetría de imagen digital.**

Ángel López M., M. Pilar Berlín (N&SB)  
Actualidad Analítica, 80, 22-27 (2022)

**La detección de partículas mediante espectrometría de masas con plasmas de acoplamiento inductivo (single particle ICP-MS).**

Francisco Laborda (GEAS)  
Actualidad Analítica, 80, 33-38 (2022)