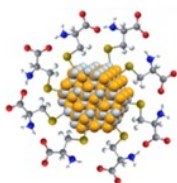


**International Congress on Analytical
Nanoscience and Nanotechnology
Santiago de Compostela, Spain
3 - 6 September 2024**



nyna2024.com



PROGRAMME XI NyNA 2024 (3-6 SEPTEMBER 2024)

TUESDAY, SEPTEMBER 3	SHORT COURSE
09:00 – 13:30 h	REGISTRATION SHORT COURSE AND XI NyNA 2024
10:00 – 10:45 h	SC1. Analytical nanoscience and nanotechnology: general view, trends and present challenges Ángel Ríos, University of Castilla-La Mancha, Ciudad Real
10:45 – 11:30 h	SC2. Engineered nanomaterials: Reference methods, reference materials and documentary standards in support of current regulations Heidi Goenaga-Infante, D. Bartczak LGC National Measurement Laboratory, Teddington
11:30 – 12:00 h	COFFEE BREAK
12:00 – 12:45 h	SC3. Molecular recognition in optical sensors Elena Benito Peña, Complutense University of Madrid
12:45 – 13:30 h	SC4. Nanomaterials: key components in the improvements of electrochemical bio-sensing devices Mónica Revenga Parra, Universidad Autónoma de Madrid
13:30 – 15:30 h	LUNCH

XI NyNA 2024

TUESDAY, SEPTEMBER 3	
15:00 – 15:30 h	REGISTRATION
15:30 – 16:00 h	OPENING CEREMONY
16:00 – 16:45 h	OPENING PLENARY LECTURE PL1. Nanoplasmonic sensors integrated in 3D printed tumor models Luis Liz Marzán, CIC biomaGUNE, Universidade de Vigo (Spain)
SESSION 1: Detection, characterization, and quantification of nanomaterials	
16:45 – 17:30 h	PLENARY LECTURE PL2. Key analytical issues in the development of dispersion protocols and in the assessment of intestinal fate, uptake and crossing of food-relevant nanomaterials Francesco Cubadda, Istitute Superiore di Sanità, Rome (Italy)
17:30 – 18:00 h	COFFEE BREAK
18:00 – 18:15 h	O1. Assessment of the intestinal permeability of TiO ₂ and SiO ₂ (nano)particles from confectionaries using Caco-2 cells Transwell assays and spICP-MS <u>Elena Espada-Bernabé</u> , G. Moreno-Martín, B. Gómez-Gómez, Y. Madrid Complutense University of Madrid
18:15 – 18:30 h	O2. Shining light on nanoparticle antimicrobial activity assessment: A luminescence-based approach <u>Joana Galhano</u> , M.P. Duarte, J.L. Capelo-Martínez, C. Lodeiro, E. Oliveira University NOVA of Lisbon
18:30 – 18:45 h	O3. Unveiling the protein corona of different nanocarriers through asymmetrical flow field-flow fractionation (AF4) <u>Jorge Ruz</u> , P. Rial, P. Laphus, L. Sanjurjo, M.J. Alonso, Universidade de Santiago de Compostela
18:45 – 19:00 h	O4. Food-grade quillaja saponin-polysorbate carrier for nanoencapsulation of vitamin D3: design and comparison about stability and controlled release regarding other nanoceutical approaches <u>Natalia Villamayor</u> , M.J. Villaseñor, A. Ríos University of Castilla-La Mancha
WELLCOME RECEPTION	

WEDNESDAY, SEPTEMBER 4	
09:00 – 09:45 h	<p>PLENARY LECTURE PL3. Fate and effects of functional nanoparticles in biological matrices and biointerfaces Yuri Antonio Díaz, Università di Pavia (Italy)</p>
SESSION 2: Nano(bio)sensors	
09:45 – 10:30 h	<p>PLENARY LECTURE PL4. Microfluidics to enhance the use of nanomaterials as chemical and biological sensors Lourdes Basabe, F. Benito University of the Basque Country UPV/EHU, Vitoria-Gasteiz (Spain)</p>
10:30 – 10:45 h	<p>O5. New proposals in aqueous analysis based on the use of luminescent nanoclusters in microfluidic systems Ángela Écija Arenas, J. Palma Roldán, J.M. Fernández Romero Universidad de Córdoba</p>
10:45 – 11:00 h	<p>O6. Multiplex determination of glycan profiles on urinary prostate-specific antigen by Surface-Enhanced Raman Scattering Laura Armero Hernández, J. Plou, P.S. Valera, S. Serna CIC biomaGUNE, Donostia-San Sebastián</p>
11:00 – 11:15 h	<p>O7. Bidimensional nanomaterials and DNA nanostructures for nanobioconjugates preparation. Application to virus detection Tania García Mendiola, E. Enebral-Romero, D. García-Fernández, L. Gutiérrez-Gálvez, M. Luna, I. Torres, F. Zamora, E. Lorenzo Abad Universidad Autónoma de Madrid</p>
11:15 – 11:45 h	COFFEE BREAK (POSTER SESSION)
11:45 – 12:30 h	<p>PLENARY LECTURE PL5. Nanotechnology-based sensors and materials for water contaminants monitoring Begoña Espiña, INL-International Iberian Nanotechnology Laboratory, Braga (Portugal)</p>
12:30 – 12:45 h	<p>O8. Development of a nanometric molecular gates-capped nanoporous anodic alumina biosensor for fast and accurate detection of nosocomial infections in clinical samples Andrea Torres-Mesado, I. Caballos, M. Ángeles Tormo Mas, E. Climent, R. Martínez Máñez, E. Aznar Universitat Politècnica de València, Instituto de Investigación Sanitaria La Fe de Valencia</p>
12:45 – 13:00 h	<p>O9. Opening new roadmaps in cancer prognosis: interrogating miRNA-methylome and lesser-known methylations by electrochemical biodevices Eloy Povedano, V. Ruiz-Valdepeñas, R. Sebuyoya, R.M. Torrente-Rodríguez, M. Garranzo-Asensio, A. Montero-Calle, J.M. Pingarrón, R. Barderas, M. Bartosik, S. Campuzano University Complutense of Madrid</p>

13:00 – 13:15 h	O10. (Bio)functionalized 2D germanane heterostructures as highly sensitive (bio)sensing systems Jose Muñoz, Universitat Autònoma de Barcelona (UAB)
13:15 – 13:30 h	O11. Topologically-fabricated nanostructures for Surface-Enhanced Raman Spectroscopy D.F. Odetade University of Birmingham
13:30 – 16:00 h	LUNCH BREAK
	SESSION 3: Nano(bio)sensors (cont.)
16:00 – 16:45 h	PLENARY LECTURE PL6. Tailored microfabrication of 3D-printing electrochemical microfluidics for (bio)sensing applications Miriam Chávez, Universidad de Alcalá, Alcalá de Henares (Spain)
16:45 – 17:00 h	O12. Enhancing electrochemiluminescence immunoassay through orthogonally functionalized graphene oxide <u>Mónica Paz-Insua</u> , C. Wetzl, C. Ignazio, J. Mosquera, M. Prato, G. Valenti, A. Criado Universidade da Coruña
17:00 – 17:15 h	O13. Design and analytical characterization of a copper nanoMOF paper-based sensor for the non-invasive detection of biogenic amines in food <u>Inmaculada Ortiz-Gómez</u> , C. Melendreras, E. Lastra Bengochea, F.J. García Alonso, A. Soldado, J.M. Costa Fernández University of Oviedo
17:15 – 17:30 h	O14. Design and manufacturing of a disposable electrochemical paper-based analytical device for the determination of dopamine and serotonin neurotransmitters in clinical samples <u>Marta Pacheco</u> , M.Chávez, S. Dorte, A. Escarpa Complutense University of Madrid
17:30 – 18:00 h	COFFEE BREAK (POSTER SESSION)
18:00 – 18:45 h	PLENARY LECTURE PL7. Paper-based (bio)sensors nanomodified for sustainable and smart analyses Fabiana Arduini, University of Rome (Italy)
18:45 – 19:00 h	O15. Innovative inkjet-printed SERS sensor for biorelevant VOCs mixtures quantification Daniel García-Lojo Universidade de Vigo
19:00 – 19:15 h	O16. Gated materials for diagnostics and their potential biomedical applications Ramón Martínez Máñez Universitat Politècnica de València
19:15 – 19:30 h	O17. Synthesis of core-shell fluorescent magnetic particles and their implementation into a fiber-optics device for diacetyl detection <u>Roccapio Malaspina</u> , A. Leon-Cecilla, M.D. Fernández-Ramos, V. Martos-Núñez, M.T. López-López, A.L. Medina-Castillo Universidad de Granada

THURSDAY, SEPTEMBER 5	
SESSION 4: Analytical nanometrology / Detection, characterization, and quantification of nanomaterials	
09:00 – 09:45 h	PLENARY LECTURE PL8. Novel strategies for the accurate determination of particle number concentration: From nanomaterials to microplastics Heidi Goenaga-Infante LGC National Measurement Laboratory, Teddington (United Kingdom)
09:45 – 10:00 h	O18. Nanoparticle characterization in biological matrices by Single Particle ICP-MS <u>Meritxell Cabré</u> , G. Fernández, E. González, J. Abellá, A. Verdaguer Universitat Ramon Llull, Perkin Elmer Scientific Spain
10:00 – 10:15 h	O19. Metrology platform for multi-elemental quantification of doped-carbon dots in individual cells using ICP-TOF-MS <u>Guillermo Redondo-Fernández</u> , K. Billimoria, D. Ojeda, A. Soldado, J.M. Costa-Fernández, H. Goenaga-Infante University of Oviedo
10:15 – 10:30 h	O20. Towards the harmonization in single particle ICP-MS metrology <u>Francisco Laborda</u> , E. Bolea, I. Abad University of Zaragoza
10:30 – 10:45 h	O21. Development of analytical methodology for extraction, preconcentration, and detection of small micro-nanoplastics in water environmental samples <u>J. Terán-Baamonde</u> , A. Castanheira, P. Taladriz-Blanco, S. Muniategui-Lorenzo, B. Espiña, L. Rodríguez-Lorenzo Universidade da Coruña
10:45 – 11:00 h	O22. Determination of metal oxide and metallic nanoparticles in air samples using mixed cellulose esters filters and spICP-MS <u>Carlos Gómez-Pertusa</u> , D. Torregrosa, M. C. García-Poyo, G. Grindaly, R. Pedraza, A. Yáñez, L. Gras Universidad de Alicante
11:00 – 11:15 h	O23. Health assessment of CuONPs in seafood: enzymatic ultrasound-assisted hydrolysis optimised by response surface design and further monitorization by sp-ICP-MS <u>Manuel Bartolomé</u> , M.J. Villaseñor, A. Ríos University of Castilla-La Mancha
11:15 – 11:45 h	COFFEE BREAK (POSTER SESSION)
11:45 – 12:30 h	PLENARY LECTURE PL9. Application of Single Particle ICP-MS for the determination of inorganic nanoparticles in food additives and food Katrín Löschner, Technical University of Denmark
12:30 – 12:45 h	O24. Determination of silver nanoparticles in exposed human red blood cells by single cell-inductively coupled plasma-mass spectrometry <u>Ana Justo-Vega</u> , P. Bermejo-Barrera, R. Domínguez-González, A. Moreda-Piñeiro, J. Jiménez-Lamana University of Santiago de Compostela

12:45 – 13:00 h	O25. Optimized spICP-MS methodology for characterizing biogenic selenium nanoparticles produced by <i>Haloferax mediterranei</i> <u>Nuria Guijarro-Ramírez</u> , G. Grindlay, L. Gras, C. Pire, J. Mora, R.M. Martínez-Espinosa University of Alicante
13:00 – 13:15 h	O26. Magnetic micromotors for the on-the-fly SARS-COV-2 detection <u>Alberto Rodríguez</u> , B. Jurado-Sánchez, A. Escarpa Universidad de Alcalá
13:15 – 13:30 h	O27. Catalytic micromotors for motion based detection of cystine as post-mortem interval <u>Steven Linian</u> , B. Jurado, A. Escarpa Universidad de Alcalá
13:30 – 13:45 h	O28. Development of a fiber optic sensor for simple, fast, and eco-friendly real-time measurement of total and volatile acidity in beverages. <u>Melany López-Aveiga</u> , M.D. Fernández-Ramos, V. Martos-Núñez, A. González-Casado, A. Medina-Castillo Universidad de Granada
13:45 – 16:00 h	LUNCH BREAK
SESSION 5: Applied analytical strategies involving nanomaterials/Nanomaterials for sample preparation	
16:00 – 16:45 h	PLENARY LECTURE PL10. From Bench to bedside: metallic nanoparticles empower proteomics, antimicrobial strategies, catalysis and drug delivery systems Carlos Lodeiro, NOVA University Lisbon (Portugal)
16:45 – 17:00 h	O29. Covalent organic frameworks as efficient adsorbents for the detection of emerging contaminants in run-off waters <u>Carlos Gonçalves</u> , M. Quarato, M. Chaves de Sousa, J. Araújo, A. Álvarez, L. Rodríguez-Lorenzo, L.M. Salonen, B. Espiña International Iberian Nanotechnology Laboratory, Braga
17:00 – 17:15 h	O30. Detection and quantification of nilotinib in complex clinical samples by capillary electrophoresis using silver nanoparticles <u>María Ángeles García-Trejo</u> , A. Ríos, G. Castañeda University of Castilla-La Mancha
17:15 – 17:30 h	O31. Use of bimetallic nanoparticles as novel tags in lateral flow immunoassays for the detection of biomarkers <u>David Valero-Calvo</u> , J.F. Bergua-Canudo, D. Bengoa-Álvarez, F.J. García-Alonso, A. Escosura-Muñiz University of Oviedo
17:30 – 18:00 h	COFFEE BREAK (POSTER SESSION)
18:00 – 18:45 h	PLENARY LECTURE PL11. Upconversion nanoparticles - bright reporters for bioanalytical applications Thomas Hirsch, University of Regensburg (Germany)

18:45 – 19:00 h	O32. Continuous 3D-based electrochemical monitoring of bacteria growth inhibition using biotemplated BiOCl micromotors <u>Carmen Cuntín-Abal</u> , M. Chávez, B. Jurado-Sánchez, A. Escarpa Universidad de Alcalá
19:00 – 19:15 h	O33. Identification of marine species genomic DNA using gold nanoparticles and signal amplification <u>Patricia Alcázar</u> , M.L. Fernández, J.M. Costa, Y.J. Borrell, R. Coya, M.T. Fernández University of Oviedo
CONFERENCE DINNER (PAZO DE SAN LORENZO)	

FRIDAY, SEPTEMBER 6	
SESSION 6: Other nanotechnological applications and miniaturized nanosystems	
09:00 – 09:45 h	PLENARY LECTURE PL12. Magnetic micro- and nanorobots: A materials journey Salvador Pané, Institute of Robotics and Intelligent Systems, Zürich (Switzerland)
09:45 – 10:00 h	O34. Iridium Janus nanomotor for smart drug delivery <u>Diana Vilela</u> , B. Mayol, S. Pradana-López, A. García-Fernández, A. Sánchez, A. Villalonga, F. Sancenón, P. Martínez-Ruiz, R. Martínez-Máñez, R. Villalonga Complutense University of Madrid
10:00 – 10:15 h	O35. Exploiting nanoparticles for enhanced drug delivery strategies against antibiotic resistance <u>Elisabete Oliveira</u> , C. Lodeiro, J. Galhano, M.P. Duarte, J.L. Capelo Universidade NOVA de Lisboa
10:15 – 10:30 h	O36. Measuring temperature at the nanoscale <u>Carlos Renero-Lecuna</u> , C. García-Astrain, A. Herrero, J. Langer, D. Jiménez de Aberasturi, M. Henriksen-Lacey, L. M. Liz-Marzán University of Vigo
10:30 – 10:45 h	O37. Larval mortality of <i>Aedes aegypti</i> using zinc oxide and manganese oxide nanoparticles synthesized by green chemistry <u>Gina Zavaleta-Espejo</u> , E. Carranza-Segura, S. Avila-Concepción, S. Jáuregui-Rosas, F. Samanamud-Moreno, J. Saldaña-Jiménez, E. Valle-Rivera, J. Huaman-Quispe Universidad Nacional de Trujillo
10:45 – 11:00 h	O38. Microfluidic devices and the biological evaluation of therapeutic nanosystems: a look into atherosclerosis <u>Alejandro Ogando</u> , O. Beltrán, J. Fernández, P. Taboada Universidade de Santiago de Compostela
11:00 – 11:30 h	COFFEE BREAK (POSTER SESSION)
11:30 – 11:45 h	O39. Modified chitosan-based nanocapsules for the controlled release of selenium in soil <u>Alejandro Fuentes García</u> , M.J. Sánchez-Martín Universitat Autònoma de Barcelona
11:45 – 12:00 h	O40. Heterostructures of plasmonic metal nanoparticles/LDH for p-nitrophenol degradation <u>Ridouan Benhiti</u> , S. Nouaa, M. Chiban, G. Carja Ibn Zohr University, Agadir
12:00 – 12:15 h	O41. Design of a solution-based system using RNAzyme technology for detection and quantification of miRNA as stress response indicator F.N Nazar, X. Arciniega, S. Pellegrini, E. Azuaje-Hualde, L. Basabe-Desmonts, <u>Fernando Benito-López</u> University of the Basque Country UPV/EHU

12:15 – 12:30 h	O42. Smart mesoporous systems for controlled drug release induced by H ₂ O ₂ <u>Marta González-Jiménez</u> , T. Moreno Núñez, S. Salido, B. Mayol, E. García-Díez, P. Martínez-Ruiz, D. Vilela, R. Villalonga, N. Martínez-Quiles Complutense University of Madrid
12:30 – 13:15 h	CLOSING PLENARY LECTURE PL13. Advancing water pollution remediation through magnetic nanostructured biomaterials José Rivas, Materials Institute-iMATUS, Universidade de Santiago de Compostela (Spain)
13:15 – 14:00 h	CLOSING CEREMONY

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