



NALS

2022

NANOMATERIALS APPLIED TO LIFE SCIENCES

FROM APRIL 27 TO 29
AUDITORIUM OF THE UNIVERSITY OF CANTABRIA

SANTANDER



27th April 2022

8:30-9:15

Open ceremony

Session: Antimicrobials and Nanotoxicity

9:15-9:35	Eduard Torrents	Keynote: Application of nanotechnology in diagnosis and treatment of biofilm
9:35-9:45	Jorge Marqués-Marchán	Magnetostrictive nanostructured surfaces for antimicrobial applications
9:45-9:55	Lisandra de Castro	Development of magnetic lignocellulosic materials for environmental remediation
9:55-10:05	Laura Rodríguez-Lorenzo	Bioaccumulation and biodistribution of silver nanoparticles in marine clams <i>Ruditapes philippinarum</i>
10:05-10:15	Jesús Miguel Sanz	Multivalence effects associated to dynamic benzenetricarboxamide supramolecular structures: application as antimicrobials
10:15-10:25	Jose M García Martín	Nanocolumnar films: Sustainable manufacturing and applications in biomedicine
10:25-10:40	Round table & questions	
10:40-11:10	Coffee break	

11:10-11:45	Aitziber L. Cortajarena	Plenary: Engineered repeat protein hybrids: the new horizon for biologic medicines and diagnostic tools
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Session: Nano-Imaging

11:45-12:05	Stefaan Soenen	Keynote: Studying nano-bio interactions in live animals using nano-imaging
12:05-12:15	Fernando Herranz	Nano-radiomaterials for molecular imaging
12:15-12:25	Virginia Martínez	Combination of new dyes with silica-based nanosystems for biomedical application: fluorescence imaging & PDT
12:25-12:35	Agustina Asenjo	Dissipation at the nanoscale in biomagnetic materials
12:35-12:45	Sebastian Thompson	Organelle temperature measurements using anisotropy-based nanothermometers
12:45-12:55	Carlos Caro	Passive targeting of high-grade gliomas via the EPR effect: a closed path for metallic nanoparticles?
12:55-13:05	Diego Mendez-González	Optomagnetic nanofluids for controlled brain hyperthermia: a critical study
13:05-13:20	Round table & questions	

Lunch break at the "Magdalena Palace"

Session: Nanobiotechnology (I)

16:00-16:20	Jesús Santamaría	Keynote: A change of paradigm in cancer therapy? Using catalysts to make drugs inside the tumor, rather than trying systemic chemotherapy
16:20-16:30	Domingo F. Barber	Surface coatings drive the intracellular trafficking and the endolysosomal degradation of iron oxide np in macrophages
16:30-16:40	Jesús A González	Confocal raman microspectroscopy as a diagnostic tool for sars-cov-2
16:40-16:50	Marianna T. P. Favaro	The incorporation of a SARS-Cov-2 antigen into a lipid-based nanoparticle boosts the neutralizing antibody response
16:50-17:00	Eloi Parladé	Development of ion-dependent microscale secretory granules for nanomedical applications
17:00-17:10	Paola Tiberto	Heating efficiency for magnetic hyperthermia applications: effect of surface coating on Fe ₃ O ₄ nanoparticles
17:10-17:25	Round table & questions	

17:25-18:40

Poster Pitch (I)

18:40-20:00

Poster & Beer session

28th April 2022

Session: Drug delivery

9:00-9:20	Anna Roig	Keynote: PLGA magnetic nanocarriers traceable by imaging techniques and endovascularly administered to the brain
9:20-9:30	Clara Marquina	Graphene-encapsulated magnetic nanoparticles for safe and steady delivery of ferulic acid in diabetic mice
9:30-9:40	Santiago Grijalvo	Antioxidant-loaded polymeric NPs prepared by nano-emulsion templating for the management of neurological diseases
9:40-9:50	Enrica Soprano	Membrane fusion-mediated intracellular delivery by biomimetic cell-derived nanocarriers
9:50-10:00	Ester Polo	Biomimetic nanocarriers for drug delivery
10:00-10:10	Manshian Bella	NP-cellular hitchhiking system for targeted combination therapy and diagnosis of glioblastoma
10:10-10:25	Round table & questions	
10:25-10:55	Coffee break	

10:55-11:30	Laura M. Lechuga	Plenary: Photonic Nanobiosensors for ultrasensitive and decentralised diagnostic at the point-of-care
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Session: Magnetic Materials

11:30-11:50	María C. Serrano	Keynote: Approaching neural repair at the injured spinal cord by the use of nanomaterials
11:50-12:00	Maité Insausti	T ₁ and T ₂ contrast agents for RMI by properly controlling Ga ₃₊ doping in Fe _{3-x} GaxO ₄
12:00-12:10	Idoia Castellanos-Rubio	Attuning magnetic nanoparticles for the development of highly efficient and reliable theranostic platforms
12:10-12:20	Oscar Iglesias	Taming the influence of dipolar interactions in nanoparticle assemblies for magnetic hyperthermia
12:20-12:30	Eneko Garayo Urabaien	Monte Carlo based methods for the prediction of dynamic magnetization of NPs for biomedical applications
12:30-12:40	Itziar Galarreta Rodríguez	3D printable PLA/PCI/Fe ₃ O ₄ magnetic composites with magnetic hyperthermia response
12:40-12:50	Alberto López Ortega	Fe ₃ O ₄ -SiO ₂ mesoporous core/shell nanoparticles for potential magnetic field-induced ibuprofen-controlled release
12:50-13:05	Round table & questions	
13:05-15:00	Lunch break	

Session: Nanobiotechnology (II)

15:00-15:20	Carmen Álvarez	Keynote: Micelles and supramolecular gels for regenerative medicine and ocular drug delivery
15:20-15:30	Mattia Bramini	Graphene-based neural interfaces to target network excitability
15:30-15:40	Miguel García Iglesias	Supramolecular photosensitisers for photodynamic therapy
15:40-15:50	César Moreno	Graphene nanoarchitectures from the bottom-up as atomically-precise anchors in photonic biosensors
15:50-16:00	María Graciela Pino	Applications of the Langmuir-Blodgett films in nanoarchitectonics
16:00-16:10	Albert Figuerola	Synthesis and applications of group 11-based ternary chalcogenide nanocrystals with tunable composition
16:10-16:25	Round table & questions	

17:00-17:35 **Wolfgang Parak** **Plenary:** Nanoparticles interfacing biology

17:35-19:00 **Poster Pitch (II)**

19:00-20:00 **Poster & Beer session**

21:00-22:30 **Conference Dinner (Hotel Bahía)**

29th April 2022

Session: Intelligent Nanomaterials

9:00-9:20	Beatriz Pelaz	Keynote: Efficient Colloidal Nanosystems for Bioapplications
9:20-9:30	Carlos Martínez-Torró	Design of a human GFP-like protein scaffold for targeted nanomedicines
9:30-9:40	André Pérez Potti	Circulating antibody analysis and b cell receptor sequencing reveal nanoparticle shape-dependent immune modulation
9:40-9:50	Pablo Botella Asunción	Amino-modified mesoporous silica nanoparticles to isolate miRNAs from the protein corona
9:50-10:00	Henning Kirst	A novel nano-scaffold for nanomedical applications
10:00-10:10	Elizabeth M Jefremovas	Rare earth (Gd/Tb)-doped magnetotactic bacteria: a new approach to finely tune their magnetic response
10:10-10:25	Round table & questions	
10:25-10:55	Coffee break	

10:55-11:30 **Josep Nogués** **Plenary:** Magnetoplasmonic nanodomains as a novel structure for biomedical applications

Session: NALS Women

11:30-11:45	M ^a Puerto Morales	Magnetic nanoparticles for the control of multi-enzymatic reactions
11:45-12:00	Cristina Gómez Polo	Magnetic nanostructures for environmental applications
12:00-12:15	M ^a Luisa F. Gubieda	Potential of magnetotactic bacteria as Nanobots for biomedical application
12:15-12:30	Carmen Blanco	Nanoparticles and rapid tests. Ready for postpandemic times
12:30-12:45	Mónica L Fanarraga	Biomimetic nanomaterial engineering
12:45-13:00	Round table & questions	
13:00-14:40	Lunch break	

Session: Biosensors

14:40-15:00	Alfredo de la Escosura	Keynote Biosensing using nanochannels for biomarkers monitoring
15:00-15:10	Helena Mateos Cuadrado	Is L1CAM a good marker for neuronal extracellular vesicles?
15:10-15:20	Silvia Vázquez-Díaz	Applications of nano-atomic clusters for bioanalysis
15:20-15:30	Shayesteh Bazsefidpar	Development of a thermal biosensor in a test strip format for detection of <i>E. coli</i> O157:H7 bacteria
15:30-15:40	Lorena Vázquez-Iglesias	SERS-based lateral flow point of care immunoassay for ultrasensitive detection of SARS-Cov2
15:40-15:50	Cecilia Menard-Moyon	Multifunctionalized carbon nanotubes for therapeutic applications
15:50-16:05	Round table & questions	

Short Oral Communications

16:05-17:30	Tamara Muñoz Ortiz Javier Bonet-Aletá Marina Paris Ogayar Vivian Andrea Torres Vera Andreia Granja Beatriz Costa Murar Madhura Jan Atienza-Garriga Adriana Cruz Jorge Ruiz del Rio Giulia Mancardi Pilar Gomollón Zueco María Salvador Filipe Olim Paula Milán-Rois Eric Voltá Durán Neus Feliu Pablo del Pino	Beyond 2D thermography: polymeric nanoparticles for 3d thermal imaging with optical coherence tomography Exploiting GSH oxidation with nanocatalysts to promote cancer cell death Study of media influence in different gold nanostructures as agents for photothermal therapies Stabilization of VEGF using NPs to increase the endothelial cells proliferation to enhance the angiogenesis process. Hyaluronic acid-decorated lipid nanoparticles for enhanced drug delivery to breast cancer cells 3D scaffolds fabricated via two-photon polymerization for cellular interaction studies Co-operative dual-peptide mediated approach for selective prostate cancer targeting Characterization of protein-only NPs containing amps and analysis of their protection with liposomes and micelles Dendrimer nanotherapeutics: A novel anticancer task force Biological vehicle encapsulating a nanotherapeutic for direct targeting of myocardial fibrosis Multi-scale modelling of aggregation of TiO ₂ nanoparticle suspensions in water Optimizing the oriented cadherin fragments to magnetic microparticles to control their interaction with living cells A rapid magnetic test to monitor the Sars-CoV-2 serological response The activity of fucoidan/dendrimer nanoparticles regarding angiogenesis Reprogramming cancer cells with non-coding RNAs Antitumoral nanoparticles with multiple activities, a close reality Viruses and chloroquine. Recapitulating some basic facts of chloroquine Plasmonic-Assisted Processes in Living Cells Using Metal–Organic Framework Based Nanoreactors
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Awards and Closing Ceremony

TECHNICAL SECRETARIAT:

Azul Congresos, S.L.
Uría, 76 – 1º, Oficina 1
33003 Oviedo
Phone: 984 051 604 /984 051 671
Email: nals2022@azulcongresos.com



VENUE:

Auditorium of the University of Cantabria (Link: [Rectorate Building](#))
Address: Sevilla Str., 6, 39001 Santander, Cantabria
Free WIFI: Wireless network: Eduroam
Conference Dinner: (Link: [Hotel Bahía](#))
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