

VII Iberian Meeting on Colloids and Interfaces (RICI7)

Madrid, July 4th – July 7th, 2017



Facultad de Ciencias Químicas
Universidad Complutense de Madrid

RICI 7

PROGRAM

SPONSORS



Real
Sociedad
Española de
Física



Scientific Program

Tuesday, 4th July 2017

- 15:00-17:30 Registration
17:30-19:00 Welcome Party

Wednesday, 5th July 2017

- 8:00-8:40 Registration
8:40-9:00 Opening (*Aula Magna*)
9:00-9:45 **PL-1** (*Aula Magna*)
Photoacoustic effect: A new way of interacting with the micro- and nano-world.
F. Galisteo-González
Chairman: Francesc Mas

9:50-13:30 Parallel Sessions

Room 1 (QC23)

Chairman: Andrés Guerrero Martínez

- 9:50-10:20 **IL-1 Plasmonics for biological applications based in interfacial self-assembly**
Juan J. Giner-Casares
- 10:20-10:40 **O-1 Copper sulfide nanocrystals@graphene: synthesis and photocatalytic activity**
Ana C. Estrada, Joana Lopes, Tito Trindade
- 10:40-11:00 **O-2 Synthesis, characterization and evaluation of magnetic doped ferrites as potential therapeutic tools**
Alberto Pardo, Mateo Blanco-Loimil, Beatriz Pelaz, Pablo del Pino, Francisco Rivadulla, Wolfgang Parak, Silvia Barbosa, Pablo Taboada
- 11:00-11:30 (*Building C*) *Coffee Break*

Chairman: Conxita Solans

- 11:30-11:50 **O-3 Raman imaging for the investigation of antimicrobial fabric dyeing**
Sara Fateixa, Manon Wilhelm, Helena I. S. Nogueira, Tito Trindade
- 11:50-12:10 **O-4 Versatile magnetic biohybrid nanosorbents for the removal of herbicides from water**
Tiago Fernandes, Sofia F. Soares, Tito Trindade, Ana L. Daniel-da-Silva
- 12:10-12:30 **O-5 Gold-based hybrid nanoplatfoms as tools for oncogenic pathway inhibition of aggressive tumors through a combinatorial multi-therapeutic approach.**
E. Villar-Álvarez, Irene Golán-Cancela, Baltazar Hiram-Leal, Raquel Martínez-González, Silvia Barbosa, J. ACostoya, Pablo Taboada
- 12:30-12:50 **O-6 A problem with solution: Development of lipid-based colloidal nanocarriers for encapsulation of compounds with weak bioavailability**
T. Soares, M. Lúcio, A. C. P Dias, M. E. C. D. Real Oliveira
- 12:50-13:10 **O-7 Hybrid nanoparticles for oral drug administration**
Raquel da Ana, Ana Fortuna, Maria Mendes, Amílcar Falcão, João Sousa, Alberto Pais, Carla Vitorino

- 13:10-13:30 **O-8 Development of lipid-based colloidal nanocarriers for topical application of acyclovir**
Juliana Silva, C. Martins Lopes, J.A.M. Catita, M.E.C.D. Real Oliveira, Marlene Lúcio

Room 2 (QC25)

Chairman: Juan José Giner Casares

- 9:50-10:20 **IL-2 Synthesis and Optical Studies of Silica Encapsulated Quantum Dots During Optical Trapping**
Beatriz H. Juárez
- 10:20-10:40 **O-14 Ionic Surfactant-Carbon Nanotube Interactions. Use of Ion-Selective Electrodes**
M. López-López, E. Bernal, M.L. Moyá, J.A. Lebrón, P. López-Cornejo
- 10:40-11:00 **O-15 Cationic colloidal system based on amino acid-based surfactants: characterization, antimicrobial properties and cytotoxicity**
L. Pérez, R. Pons, A. Pinazo, M.A. Manresa, C. Moran
- 11:00-11:30 *(Building C) Coffee Break*

Chairman: Emilio Aicart

- 11:30-11:50 **O-16 Modulating supramolecular nanostructures: a free energy oriented approach**
Tânia. F. G. G. Cova, Sandra. C. C. Nunes, Alberto. A. C. C Pais
- 11:50-12:10 **O-17 Stoppering/unstoppering of a rotaxane formed between an N-heterocycle ligand containing surfactant: β -cyclodextrin pseudorotaxane and pentacyanoferrate(II) ions**
V. I. Martín, P. López-Cornejo, M. López-López, M. L. Moyá, F.J. Ostos
- 12:10-12:30 **O-18 Aggregation of cyclodextrins: insights into dynamic properties from NMR**
A.J.M. Valente, D. Murtinho, R.A. Carvalho, O. Söderman
- 12:30-12:50 **O-19 Molecular self-assembly of thiocyanine dyes into liquid crystals and silicatropic materials**
José Rodrigo Magaña, Gordon J.T. Tiddy, Carlos Rodríguez-Abreu
- 12:50-13:10 **O-20 Tubular Nanostructures and Protein Binding in Lysine-based Surfactants**
Isabel S. Oliveira, Mikail Lo, M. João Araújo, Eduardo F. Marques
- 13:10-13:30 **O-21 Self-Assembly of Gold Nanoparticles based on Supramolecular Concepts**
Andrés Guerrero Martínez

13:30 End Parallel Sessions

13:30-15:00 *Lunch*

- 15:00-15:45 **PL-2 (Aula Magna) Colloid Particles at a Range of Fluid-Fluid Interfaces**
Bernard P. Binks
Chairman: Francisco Ortega

15:45-17:10 *(Building C) Poster Session+Coffee Break*

17:15-19:00 Parallel Sessions

Room 1 (QC23)

Chairman: Bruno Silva

- 17:10-17:40 **IL-3 Role of counter-ion and helper lipid content in the design and properties of nanocarrier systems: a biophysical study**
M. Elisabete C.D. Real Oliveira

- 17:40-18:00 **O-9** **Miniemulsion polymerization as a synthetic platform for structure control of multifunctional polymer/metaloxide hybrid nanoparticles**
Olaiá Álvarez-Bermúdez, Katharina Landfester, Rafael Muñoz-Espí
- 18:00-18:20 **O-10** **Highly Controlled Synthesis of Gold Nanostars in Microdroplets**
S. Abalde-Cela, P. Taladriz-Blanco, C. Abell
- 18:20-18:40 **O-11** **Crystal Engineering of Nano-Micro Particles in Polar Media**
Ana Querejeta-Fernández, Beatriz Rivas-Murias, Miguel Correa-Duarte, Verónica Salgueiriño
- 18:40-19:00 **O-12** **Drug biophysical profiling using lipid-based colloidal nanosystems and human serum albumin as biomimetic interfaces**
E. Fernandes, M. E. C. D. Real Oliveira, S. Benfeito, F. Cagide, F. Borges, M. Lúcio

Room 2 (QC25)

Chairman: Pablo Taboada

- 17:10-17:40 **IL-4** **IEMAT: Scientific instrumentation for characterization of COLLOIDS**
Jesús Puebla
- 17:40-18:00 **O-22** **Large-Scale Plasmonic Pyramidal Supercrystals via Templated Self-Assembly of Monodisperse Gold Nanospheres**
Guillermo González-Rubio, Christoph Hanske, Cyrille Hamon, Pilar Formentín, Evgeny Modin, Andrey Chuvilin, Andrés Guerrero-Martínez, Lluís F. Marsal, Luis M. Liz-Marzán
- 18:00-18:20 **O-23** **Magnetic Microdockers**
F. Martínez-Pedrero, H. Massana, E. Navarro-Arguémí, A. Ceber, I. Pagonabarraga, P. Tierno
- 18:20-18:40 **O-24** **Self-Assembly of Poly(N-Isopropylacrylamide-Methacrylic Acid) Microgels In Water**
Gema Marcelo, Laurinda R. P. Areias, Ermelinda Macoas, Francisco Mendicuti, Mercedes Valiente, J. M. G. Martinho, José Paulo S. Farinha
- 18:40-19:00 **O-25** **Surface coverage and competitive binding of polymer and protein on carbon nanotubes**
Ricardo Fernandes, Oren Regev, Istvan Furó, Eduardo F. Marques

19:00 End of Parallel Sessions

Thursday, 6th July 2017

- 9:00-9:45 **PL-3** *(Aula Magna)*
Proteins on membrane interfaces: Structure and dynamics of lipid-protein fibers from advanced FRET methodologies and microscopy
Manuel Prieto
Chairman: Francisco Monroy

9:50-13:30 Parallel Sessions

Room 1 (QC23)

Chairman: Ramón González Rubio

- 9:50-10:20 **IL-5** **From macroscopic molecular gels to molecular nanoparticles for transport and delivery of actives**
Juan F. Miravet
- 10:20-10:40 **O-26** **Surface Dilational Elasticity of Monolayers Adsorbed from Polyelectrolyte and Surfactant Mixtures**
Andrew Akanno, Eduardo Guzmán, Francisco Ortega, Ramón G. Rubio

10:40-11:00 **O-27 Combining miniemulsion and solvothermal conditions for the synthesis of complex inorganic systems**
Rafael Muñoz-Espí, Alice Antonello, Katharina Landfester, Silvia Gross

11:00-11:30 *(Building C) Coffee Break*

Chairman: Tito Trindade

11:30-11:50 **O-28 Molecular Trends in Surfactant-Assisted Dispersions of Carbon Nanotubes**
Bárbara Abreu, Ricardo M.F. Fernandes, Matat Buzaglo, Oren Regev, István Furó, Eduardo F. Marques

11:50-12:10 **O-29 Modelisation of the evaporation of a complex sessile droplet**
L. Perrin, S. Semenov, R.G. Rubio, M. Velarde

12:10-12:30 **O-30 Dissolution state of cellulose in aqueous systems**
Luis Alves, Bruno Medronho, Filipe E. Antunes, Daniel Topgaard, Björn Lindman

12:30-12:50 **O-31 Study of the adsorption of polyelectrolyte-surfactant mixtures at the water/vapor interface by neutron reflectivity and surface tension measurements**
Laura Fernández-Peña, Andrew Akanno, Eduardo Guzmán, Sara Llamas, Aurelio G. Csaky, Richard A. Campbell, Reinhard Miller, Francisco Ortega, Ramón G. Rubio

Chairman: Francisco Galisteo González

12:50-13:10 **O-32 Phase transitions in fatty acids/alcohols Langmuir monolayers: Interfacial shear rheology results**
Javier Tajuelo, Francisco Ortega, Ramón G. Rubio, Eduardo Guzmán, Miguel A. Rubio

13:10-13:30 **O-33 Gemini Cationic Surfactants: Studying its Adsorption at Air/Water Interface and its micellization by ITC Calorimetry**
V. Domínguez, J. Sabín, G. Prieto

13:30-13:50 **O-34 Emulsions containing essential oils: eco-friendly aqueous formulations of potential biopesticides for insect pest control**
Eduardo Guzmán, Alejandro Lucia, Elisabet L. Afonso, Natalia Sánchez-Arribas, Marina Fernández-Medina, Erica Cordero, Pablo G. Argudo, Francisco Ortega, Ramón G. Rubio

Room 2 (QC25)

Chairman: Manuel Prieto

9:50-10:20 **IL-6 Lipid nanosystems for therapeutic purposes – biophysical studies as useful tools to understand interactions at the nano–bio interface**
Marlene Lúcio

10:20-10:40 **O-13 Self-assembled molecular nanoparticles as new delivery Systems**
Ana Torres-Martínez, Francisco Galindo, Juan F. Miravet

10:40-11:00 **O-36 Bioreactors Engineered through Microfluidics**
Berta Tinao, Lara H. Moleiro, Sergio A. Ortega, Laura R. Arriaga, Margarita Salas, Francisco Monroy

11:00-11:30 *(Building C) Coffee Break*

Chairwoman: Elena Junquera

11:30-11:50 **O-37 Layer-by-Layer Polyelectrolyte Microcapsules**
Ana Mateos-Maroto, Sergio Montero López, Marta Ruano Aldea, Eduardo Guzmán, Francisco Ortega, Ramón G. Rubio

- 11:50-12:10 **O-38 Hyaluronic Acid-Coated Liquid Lipid Nanocapsules as Delivery Systems Against Pancreatic Cancer Stem Cells**
A. Aguilera-Garrido, F. Galisteo-González, J.A. Molina-Bolívar, J. A. Marchal, T. del Castillo Santaella, J. Maldonado-Vaderrama, M. J. Gálvez-Ruiz
- 12:10-12:30 **O-39 May a Policationic Macrocycle Act as a Cationic Bridge Among an Anionic Lipid and a Plasmid DNA to Transfect Cells Efficiently?**
María Martínez-Negro, Ana Barrán-Berdón, Óscar Domènech, Luis García-Río, Conchita Tros de Ilarduya, Emilio Aicart, Elena Junquera
- 12:30-12:50 **O-40 Colloidal characterization and in vitro study of olive oil immune-nanocapsules for directed drug delivery**
S. Navarro-Marchal, J.A. Marchal, A.B. Jódar-Reyes, J.M. Peula-García

Chairman: Francisco Monroy

- 12:50-13:10 **O-41 Unravelling clathrin-mediated endocytosis**
Armando Maestro, Nathan Zaccai, David Owen, Pietro Cicuta
- 13:10-13:30 **O-42 Effect of Cardiolipin on liposomes**
Samuel Salinas-Almaguer, Carlos Ruiz, Francisco Monroy
- 13:30-13:50 **O-43 Polymeric particles and membranes for cell encapsulation, proliferation and release**
Eustolia Velázquez, Baltazar H- Leal, Silvia Barbosa, Manuel Altorre-Meda, Pablo Taboada

13:50 End of Parallel Sessions

13:50-15:10 *Lunch*

- 15:10-15:55 **PL-4 (Aula Magna)**
Studying the Heat Effect of Nanoparticles for Therapy and Diagnosis
Jesús Martínez de la Fuente
Chairman: Francisco Galisteo González

16:00-16:40 Parallel Sessions

Room 1 (QC23)

Chairwoman: Mercedes Velázquez

- 16:00-16:20 **O-35 Phospholipid/Nucleolipid Mixed Films for Guanine Recognition at the Air-Water Interface**
Pablo Gómez-Argudo, Juan J. Giner-Casares, Luis Camacho, M. Teresa Martín-Romero
- 16:20-16:40 **O-46 Computer simulations of interaction forces between nanogels**
Manuel Quesada-Pérez, Silvia Ahualli, José Alberto Maroto-Centeno, Alberto Martín-Molina

Room 2 (QC25)

Chairman: Francesc Mas

- 16:00-16:20 **O-44 Effect of NaCl on the aggregation behavior of rhamnolipids and implications in their biological activity**
Ana I. Rodrigues, Eduardo J. Gudiña, José A. Teixeira, Lígia R. Rodrigues
- 16:20-16:40 **O-45 Gold Nanorods in Surface-Enhanced Raman Spectroscopy as a Toxicological Tool for Cocaine Detection**
Valentina D'Elia, Jorge Rubio Retama, Carmen García Ruiz, Gemma Montalvo

16:40 End of Parallel Sessions

- 16:40-18:00 *(Building C) Poster Session+Coffee Break*
- 17:00-19:00 *(Room QC23) Meeting of the GECl*
- 20:30-... *Social Dinner*

Friday, 7th July 2017

9:00-9:45 **PL-5** (*Aula Magna*)
Multifunctional materials and nanostructures using anodic templates
Joao Pedro Araujo
Chairman: Bruno Silva

9:50-11:00 Parallel Sessions

Room 1 (QC23)

Chairman: Jesús M. de la Fuente

9:50-10:20 **IL-7** **Surface modification with functional alkoxysilanes: a valuable route for selective and effective magnetic nanosorbents**
Ana L. Daniel-da-Silva

10:20-10:40 **O-47** **Microgels obtained in water-in-water (w/w) emulsions**
Y. Beldengrün, J. Aragón, L. Corvo, C. Miquel, M. Ros, J. Esquena

10:40-11:00 **O-48** **Role of charge distribution in the absorption of biomolecules in ionic microgels**
Irene Adroher-Benítez, Arturo Moncho-Jordá, Joachim Dzubiella,

Room 2 (QC25)

Chairman: Alberto Canelas Pais

9:50-10:20 **IL-8** **Multilayered and 3D structures of Bacterial cellulose composites with nanoparticles**
Anna Laromaine

10:20-10:40 **O-49** **Soft self-assembled nanoparticles for gene and drug delivery**
Bruno F. B. Silva

10:40-11:00 **O-50** **PNIPAM-Based Microgels with a UCST Response**
Gema Marcelo, Laurinda R. P. Areias, Maria Teresa Viciosa, J. M. G. Martinho, José

11:00 End of Parallel Sessions

11:00-11.30 (*Building C*) *Coffee Break*

11:30-13:15 (*Aula Magna*)
Symposium in memoria of Elvira Rodenas
Chairman: Francisco Ortega

13:15-14:00 **PL6** (*Aula Magna*)
Closure Lecture: Surfactant self-assemblies: Key role in low-energy emulsification
Conxita Solans
Chairwoman: Jacqueline Forcada

14:00-... (*Aula Magna*) *Conclusions*

**Poster Session (Wednesday, 5th July 2017, 15:45-17:10 and
Thursday, 6th July 2017,16:40-18:00)**

- P-1 Release of acyclovir from polymeric nanofibers: comparing aqueous versus membrane-water interfaces kinetics**
Tiago Costa, Andreia Almeida, José das Neves, Bruno Sarmiento, Marlene Lúcio, Teresa Viseu
- P-2 Smart drug delivery systems for cancer therapy**
Eduarda Bárbara, Rasa Ozolina, Ana M. Carvalho, Telma Soares, Hugo Gonçalves, Jana B. Nieder, M.E.C.D. Real Oliveira, Marlene Lúcio
- P-3 Pyrene as fluorescent probe of graphene in aqueous and micellar SDS dispersions**
S. Vera, P. Martínez, A.M. Díez-Pascual, M.P. San Andrés, M. Valiente
- P-4 Importance of the hydrophobic interactions in the DNA compaction ability of surfactants**
M. López-López, M. L. Moyá, F. Sánchez, E. Bernal, A. Sánchez, M. J. Marchena, A. Clavero, P. López-Cornejo
- P-5 The concerted action involving conformation and desolvation that makes water-soluble bambusurils unique anion cages**
Tânia F. G. G. Cova, Sandra. C.C. Nunes, Alberto. A.C. Pais
- P-6 Cellulose as a dispersion stabilizer**
Carolina Costa, Björn Lindman, Isabel Mira, Jan-Benjamin Williams, Håkan Edlund, Magnus Norgren
- P-7 Hydrophobically-modified chitosan nanovectors for efficient siRNA delivery**
Baltazar H. Leal, Josué Juárez, Miguel A. Váldez, Eva Villar-Alvarez, Silvia Barbosa, Pablo Taboada
- P-8 Synthesis and characterization of protein-loaded nanocapsules**
María Navarro-Poupard, Mozghan Barami, Beatriz Pelaz, Pablo del Pino, Pablo Taboada
- P-9 Evaluation of activity and degradation in biological media of upconverting-based nanoplatfoms for theranostic applications**
R. Martínez-González, E. Villar-Álvarez, B. Hiram-Leal, M. F. Poupard, B. Pelaz, S. Barbosa, P. del Pino, P. Taboada
- P-10 Two-dimensional self-assembled arrays of metallic nanoparticles for biotechnological applications**
Mateo Blanco Loimil, Alberto Pardo, Silvia Barbosa, Pablo Taboada, Víctor Mosquera
- P-11 Studies on the interaction of cationic polymers with microorganisms: development of photobactericidal surfaces**
C. Arnau del Valle, C. Felip-León, V. Pérez-Laguna, M. I. Millán-Lou, J. F. Miravet, M. Mikhailov, M. N. Sokolov, A. Rezusta-López, F. Galindo
- P-12 Deamidation of pseudo-peptidic supramolecular gels and its application to controlled release**
César A. Angulo-Pachón, Diego Navarro-Barreda, Celia M. Rueda, Francisco Galindo and Juan F. Miravet
- P-13 Surface properties of conducting polymer films**
Ángel Arias, David López, M.D. Merchán, M.M. Velázquez
- P-14 Surface properties of Nanocomposites for capturing of CO₂**
Sara Rodríguez García, David López-Díaz, M.D. Merchán, M.J. Sánchez Montero, M.M. Velázquez
- P-15 Control over phase synchronisation in rotor models of motile cilia**
Armando Maestro, Nicolas Bruot, Jurij Kotar, Nariya Uchida, Ramin Golestanian, Pietro Cicuta

- P-16 PLGA nanoparticles for delivery of Bone Morphogenetic Protein and biofunctionalization of Titanium surfaces**
Teresa del Castillo, Ana Belén Jódar-Reyes, Inmaculada Ortega-Oller, Miguel Padial, Pablo Galindo, José Manuel Peula-García
- P-17 Optimized surfactant/polymer interactions for the improvement of detergent efficiency**
Solange S. Magalhães, Luís Alves, Marco Sebastião, Bruno Medronho, Filipe E. Antunes
- P-18 Study of phase separation in a negatively charged colloid / polymer system**
Mikheil Kharbedia, Eduardo Enciso, Francisco Monroy
- P-19 Hyaluronic Acid-Human Serum Albumin (HAS) Complexes at Fluid Interfaces**
Olalla Olea Romacho, Julia Maldonado-Valderrama, Miguel Ángel Cabrerizo-Vílchez, María José Gálvez-Ruiz
- P-20 Surfactant-assisted exfoliation of graphite into graphene: dispersibility studies and structural characterization**
Bárbara Abreu, Jorge Montero, Matat Buzaglo, Oren Regev, Eduardo F. Marques
- P-21 Bioreducible polycation-DNA complexes**
Filipe Coelho, Eduardo F. Marques, Bruno F. B. Silva
- P-22 Raman studies on graphene-based materials doped with metal sulfides**
Joana L. Lopes, Ana C. Estrada, Tito Trindade
- P-23 Towards a realistic modelling of protein diffusion in polymer crowded media**
Pablo M. Blanco, Sergio Madurga, Josep Lluís Garcés, Francesc Mas
- P-24 Cationic lipid nanoparticles for topical drug administration**
Daniel Magano, Bárbara Ramalho, Cátia Ribeiro, Joana Nova, Alberto Pais, Carla Vitorino
- P-25 Serine based gemini lipid nanoparticles for glioblastoma treatment**
Maria Mendes, Lídia Gonçalves, Ana Miranda, António Almeida, João Sousa, Eduardo Marques, Alberto Pais, Carla Vitorino
- P-26 Molecular dynamics simulations on glioblastoma: Blood brain barrier mimicry and interactions with chemotherapeutic drugs**
Ana Miranda, Tânia Cova, Maria Mendes, João Sousa, Carla Vitorino, Alberto Pais
- P-27 Magnetic quaternized chitosan hybrid nanoparticles: potential prospects for the uptake of pharmaceuticals from water**
Sofia F. Soares, Tiago Fernandes, Margarida Sacramento, Tito Trindade, Ana Daniel-da-Silva
- P-28 Previous Steps to *in vivo* Studies: Physicochemical and Biological Characterization of a Cationic Gemini Lipid/DOPE-plasmid DNA Lipoplex**
Natalia Sánchez-Arribas, María Martínez-Negro, Conchita Tros de Ilarduya, Emilio Aicart, Elena Junquera
- P-29 Spectroscopic characterization of biomimetic light harvesting complexes**
Sergio A. Ortega, Laura R. Arriaga, Francisco Monroy
- P-30 Catanionic Vesicles Composed of Threonine-based Surfactants: Phase Behavior and Microstructure**
Isabel S. Oliveira, Cristiana Santos, M. Luísa do Vale, Eduardo F. Marques
- P-31 Magnetite-supported gold nanostars for SERS detection of antibiotics**
Paula C. Pinheiro, Sara Fateixa, Tito Trindade
- P-32 Photothermal conversion efficiency and cytotoxic effect of gold nanorods stabilized with chitosan, and overcoated with alginate or PVA**
M. Almada, B.H. Leal-Martínez, P. Taboada, N. Hassan, A. Topete, M.G. Burboa Zazueta, M.A. Valdez, J. Juárez