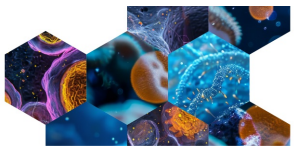

mfs 2025

Microscopy at the Frontiers of Science Conference 2025
València, Spain · 23rd–26th September

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SCIENCE & TECHNOLOGY ORGANIZERS

Microscopy at the Frontiers of Science Conference (MFS25)

València, Spain, 2025 September 23rd - 26th
Conference organizers: Juan de Dios Alche, Patricia Casino, Paulo Ferreira, Mari Angeles Juanes, Jose Luis Llacer Guerri, Clara Marco Marín and Santiago Ramón Maiques

Conference Program

September 24th - Day 2 (Wednesday) 2	
09:00 - 09:15	**Opening Ceremony. Organizers and Director CIPF**
09:15 - 10:15	**Opening Lecture. Sjors Scheres**
10:15 - 10:45	**PhD Awards on Life Sciences (x2)**
10:45 - 11:15	**Coffee Break**
11:15 - 12:15	**Technical Developments Lecture. Manos Mavrakis**
12:15 - 13:15	**Material Sciences Lecture. José Sánchez Costa**
13:15 - 14:30	**Lunch + Poster Session**
	Session 1.3 Life Sciences+CryoEM
14:30 - 14:45 Sciences+CryoEM-O1	Juan M. Martínez-Romero *(Department of Macromolecular Structures, Centro Nacional de Biotecnología (CNB-CSIC), Madrid, Spain.)*, Mariana Castrillo, José M. Fernandez-Palacios, Guy Novoa, Esther Martín-Forero, Javier M. Rodríguez, Daniel Luque, José R. Castón Native Helical Assemblies of IBDV VP4 Protease
14:45 - 15:00 Sciences+CryoEM-O2	Alicia Santos-Aledo *(Centro de Investigaciones Biológicas Margarita Salas, CSIC)*, Tommy Darriere, Carlos Fernández-Tornero Like Two Peas in a Pod? A Combined Strategy To Obtain Two Distinct High-Resolution Structures of RNA Polymerase I from One Grid.
15:00 - 15:15 Sciences+CryoEM-O3	Sara Otaegi-Ugartemendia, Roberto Marabini, Pablo Herrera, Gabriela N. Condezo, Lars Mühlberg, Haina Wang, Lucía Ortiz, Fan Liu, Ruth-Anne Sandaa, Carmen San Martín *(Centro Nacional de Biotecnología (CNB-CSIC))* INTEGRATIVE STRUCTURAL BIOLOGY OF A T=219 MARINE GIANT VIRUS
15:15 - 15:30 Sciences+CryoEM-O4	Elena Macías-Sánchez *(Institute of Parasitology and Biomedicine López Neyra, CSIC)*, Emeline Raguin, Nadezda Tarakina, Peter Fratzl Three-dimensional imaging to study early bone mineralization
15:30 - 15:45 Sciences+CryoEM-O5	Alicia Santos-Aledo, Adrián Plaza-Pegueroles, Marta Sanz-Murillo, Federico M. Ruiz, Peini Hou, Jun Xu, David Gil-Carton, Dong Wang, Carlos Fernández-Tornero *(Centro de Investigaciones Biológicas Margarita Salas (CIB), CSIC, 28040 Madrid, Spain)* Cryo-EM uncovers a sequential mechanism for RNA polymerase I pausing and stalling at abasic DNA lesions
15:45 - 16:00 Sciences+CryoEM-O6	Hanxing Jiang *(Instituto Biofisika (UPV/EHU, CSIC), University of the Basque Country, Leioa, Spain.)*, Jesús Vílchez-García, Adrián Martínez-Jiménez, Borja Ochoa-Lizarralde, Jorge Pedro López-Alonso, Jerónimo Pérez-Lorente, Paola Bartoccioni, Raúl Estévez, Victor Guallar, Ekaitz Errasti-Murugarren, Iban Ubarretxena-Belandia, Igor Tascón Structural basis of high-affinity choline translocation across bacterial membranes
16:00 - 16:15 Sciences+CryoEM-O7	Jorge Pedro López-Alonso *(Instituto Biofisika (UPV/EHU, CSIC), Leioa, Spain)*, Paula Polonio, Hanxing Jian, Fátima Escobedo, Gustavo Titaux, Iban Ubarretxena-Belandia, Miguel Mompeán Structural Basis for the Compact Fold of Human RIPK1 Amyloid Fibrils
16:15 - 16:20 Sciences+CryoEM-T1	Esther Masia Sanchis *(Laboratorio Polimeros terapeuticos y plataforma de cribado del CIPF)*, Snezana Đorđević, Esther Martinez, Maria J. Vicent IDENTIFICATION OF EXOSOME MODULATORS IN 3D BREAST CANCER MODELS USING EXOSCREEN AND CELL PAINTING TECHNOLOGIES
16:20 - 16:25 Sciences+CryoEM-T2	Antonio Ruiz-Albor *(Instituto de Biomedicina de Valencia (IBV), CSIC, Valencia 46010, Spain)*, Belén Chaves-Arquero, Mariola Ferreras-Gutierrez, Miriam Barbera, Amaia Gonzalez-Magaña, Rafael Núñez Ramírez, Alfredo De Biasio, Francisco J. Blanco Reconstitution of the complex of DNMT1 with hemimethylated DNA, doubly monoubiquitinated PAF15, and PCNA, for structural analysis
16:25 - 16:30 Sciences+CryoEM-T3	Marta Huerta *(Centro Nacional de Biotecnología (CNB-CSIC))*, Trinity Cookis, Ana Cuervo, Jorge Cuellar, Mary Dayne S Tai, Aurora Martínez, Eva Nogales, Jose María Valpuesta Advancing Cryo-EM Sample Preparation with Streptavidin Affinity Grids
16:30 - 16:35 Sciences+CryoEM-T4	Elsa-N Astorga-Simón, David Blázquez-Ruano *(Instituto Biofisika (UPV/EHU, CSIC), Leioa, Spain)*, Soledad Baños-Mateo, Adriana Rojas-Cardona, Aitor Hierro Mechanistic Insights on GTPase-Mediated Control of Endosomal Sorting Machinery
16:35 - 16:40 Sciences+CryoEM-T5	Amparo Picard Sánchez, Ethel Queralt, Isabel Reillo, Isabel Vernia García *(Instituto de Biomedicina de Valencia-IBV-CSIC)* NIPBL disruption in Cornelia de Lange Syndrome alters cohesin/NIPBL chromatin association
16:40 - 16:45 Sciences+CryoEM-T6	Rocio Coloma *(Department of Macromolecular Structures, Centro Nacional de Biotecnología (CNB), CSIC, Madrid, Spain)*, Irene Cancela, Diego Carlero, Andrea Modrego Virus-Free High-Throughput Screening of Influenza Antivirals Using Widefield Microscopy and a Fluorescent Mini-Replicon System
	Session 1.3 Materials
14:30 - 14:50 Materials-O1	José Juan Calvino *(Departamento de Ciencias de los Materiales e Ingeniería Metalúrgica y Química Inorgánica, Facultad de Ciencias, Universidad de Cádiz, Campus Río San Pedro S/N, Puerto Real, 11510 Cádiz, Spain)*, Paula Aniceto-Ocaña, José Marqueses-Rodríguez, José Antonio Perez-Omil, Carmen Esther Castillo, Miguel López-Haro Combining UHR-HAADF, Image Simulation, Deep-Learning Methods and Density Functional Theory (DFT) Calculations to Understand the Ultimate Details of Metal-Support Interactions in High Surface Area Single-Atom Catalysts
14:50 - 15:10 Materials-O2	Ihsan Çaha *(International Iberian Nanotechnology Laboratory (INL), Avenida Mestre José Veiga, Braga, Portugal)*, Francis Leonard Deepak Probing Nanoscale Strain and Electronic Structure in 1D CrX3 (X=I and Cl) Encapsulated in Carbon Nanotubes
15:10 - 15:30 Materials-O3	Mohammad Furqan *(Instituto de Nanociencia y Materiales de Aragon (INMA), CSIC-U. Zaragoza (Zaragoza), Spain)*, Simon Hettler, M. B. Sreedhara, Azat Khadiev, Reshef Tenne, Raul Arenal Structure and Property Analysis of $(Sm_{1-x}Y_x)S$–TaS_2 Nanotubes from Quaternary Misfit Layered Compounds.

15:30 - 15:50 Materials-O4	Simon Hettler *(Laboratory for Electron Microscopy, Karlsruhe Institute for Technology, Karlsruhe, Germany)*, Martin Peterlechner, Ute Zschieschang, Hagen Klauk, Yolita M. Eggeler Analysis of Organic Thin-Film Transistors by Transmission Electron Microscopy
15:50 - 16:10 Materials-O5	Carina Babu Maliakkal *(Catalan Institute of Nanoscience and Nanotechnology Nanotechnology - ICN2, (CSIC and BIST))*, Athique Ahmed Ali, Giulia Meucci, Helena Rabelo Freitas, Aziz Genc, Damon J. Carrad, Christian Reichl, Thomas Sand Jespersen, Jordi Arbiol TEM-based failure analysis of GaAs/AlGaAs undoped-2DEG semiconductor devices
16:10 - 16:30 Materials-O6	Beatriz S. Monteiro *(University of Porto, FEUP - Faculty of Enginerring)*, Ana Reis, Bruno Guimarães, Daniel Figueiredo, Cristina Fernandes, Sónia Simões Microstructural Characterization of Multilayer HiPIMS Coatings
16:30 - 16:50 Materials-O7	Alba Garzon Manjon *(Catalan Institute of Nanoscience and Nanotechnology Nanotechnology - ICN2, (CSIC and BIST))*, Miquel Vega Paredes, Raquel Aymerich Armengol, Sara Marti, Christina Scheu, Jordi Arbiol Insights into the degradation of metallic core-shell nanoparticles under fuel cell conditions by 3D identical location STEM
16:50 - 16:55 Materials-T1	TAHIR MUHMOOD *(INL- International Iberian Nanotechnology Laboratory)*, Isilda Amorim Morphological Analysis of NiFeP-Coated Nickel Felt via SEM and FIB-SEM: Structural Transformations Under OER Conditions
16:55 - 17:00 Materials-T2	Eduardo Domínguez-Ojeda *(Institut Català de Nanociència i Nanotecnologia, Bellaterra, Spain)*, Felipe A. Garcés-Pineda, Viktoria Golovanova, Alba Garzón Manjón, Jordi Arbiol Atomic-Level Insight into Multi-Carbon Product Formation via CO2RR on Chiral Catalysts
17:00 - 17:30	**Coffee Break**
	Session 1.4 Life Sciences+CryoEM
17:30 - 17:45 Sciences+CryoEM-O1	Oier Lauzirika Zarrabeitia *(Centro Nacional de Biotecnología (CNB-CSIC). Darwin, 3. 28049 Madrid, Spain)*, José Luis Vilas Prieto, José María Carazo García, Carlos Oscar Sorzano Sánchez Fast and robust heterogeneity analysis in CryoEM though Orthogonal Group Synchronization
17:45 - 18:00 Sciences+CryoEM-O2	Jose Miguel De la Rosa Trevin *(St.Jude Children's Research Hospital)* Facilitating CryoEM single-particle and tomography data analysis with EMhub
18:00 - 18:15 Sciences+CryoEM-O3	Clara Marco-Marín *(Instituto de Biomedicina de Valencia of the CSIC and Centro para Investigación Biomédica en Red sobre Enfermedades Raras CIBERER-ISCIII, Valencia, Spain.)*, Juan Manuel Escamilla-Honrubia, Maria Luisa López-Redondo, Sara Pla Fanjul, José Luis Llácer, Vicente Rubio CryoEM structures of human P5CS reveal its oligomeric organization and provide insight into dominant and recessive pathogenic mechanisms
18:15 - 18:30 Sciences+CryoEM-O4	Andrea Modrego *(Centro Nacional de Biotecnología (CNB-CSIC))*, Lucía Solanas, Diego Carlero, María Teresa Bueno-Carrasco, Noelia Zamarreño, Jaime Martín-Benito, Rocío Arranz Cryo-EM of influenza A polymerase in complex with small-molecule inhibitor
18:30 - 18:45 Sciences+CryoEM-O5	Jaime Martín-Benito *(Centro Nacional de Biotcnología, 28049, Madrid, Spain.)*, Rocío Arranz, César Santiago, Simonas Masiulis, Esperanza Rivera-de-Torre, Juan Palacios-Ortega, Diego Carlero, Diego Heras-Márquez, Ernesto Arias-Palomo, Álvaro Martínez-del-Pozo, Sara García-Linares Elucidating the Structure and Assembly Mechanism of Actinoporin Pores in Complex Membrane Environments
18:45 - 19:00 Sciences+CryoEM-O6	Carlos Vega-Gutiérrez *(Institute for Biocomputation and Physics of Complex Systems, University of Zaragoza.)*, Javier Picañol-Parraga, Irene Sánchez-Valls, Victoria Ribón-Fuster, David Soto, Beatriz Herguedas Insights into the dynamic architecture of GluA4-containing AMPA Receptors
	Session 1.4 Materials
17:30 - 17:50 Materials-O1	Enrique Gallero *(Department of Condensed Matter Physics, Faculty of Sciences, University of Cadiz. Puerto Real (Spain))*, Javier Ledesma, Javier Outón, Jorge Salguero, Lionel C. Gontard In-Situ 3D SEM-EDX of Laser-Modified WC-Co Composite Material: Unveiling Oxidation and Surface Topography
17:50 - 18:10 Materials-O2	Núria Bagués *(ALBA Synchrotron Light Source Facility, Cerdanyola del Vallès, Spain)*, Ana Arché-Núñez, Muhammad Waqas Khaliq, David Llorens, Alba Garzón Manjón, Hui Chen, Yongchao Zhang, Antoni Garcia de Herreros, Judith Oró-Solé, Belén Ballesteros, Sandra Ruiz-Gómez, Jordi Arbiol, Lucía Aballe InCAEM - STEM for In Situ and Correlative Characterization of Energy Materials
18:10 - 18:30 Materials-O3	Rui Serra Maia *(International Iberian Nanotechnology Laboratory - INL)*, Maryam Karimi, Rajashree Konar, Pedro Costa, Paulo Ferreira Degradation of LCO in aqueous electrolytes through in situ liquid-cell S/TEM
18:30 - 18:50 Materials-O4	Abhijit Roy *(Advanced Microscopy Laboratory (LMA) and Institute of Nanoscience of Aragon (INA))*, Simon Hettler, Raul Arenal Breaking Miscibility: Temperature-Triggered Phase Separation in Completely Miscible Au–Pd Alloys Uncovered by In-Situ TEM
18:50 - 19:10 Materials-O5	Avnish Singh Pal *(International Iberian Nanotechnology Laboratory-INL Braga, Portugal)*, Puspendu Guha, Francis Deepak Correlative In-Situ Liquid Cell Electron Microscopy of faceted HEA-Zr Nanoparticles used for electrocatalysis
19:10 - 19:15 Materials-T1	Pedro Costa *(International Iberian Nanotechnology Laboratory (INL), Braga-4715-330, Portugal)*, Rui Maia, Margarida Santos, Filipa Valente, Hugo Cortez, Cristiana Alves, Enrique Carbo-Argibay, Leonard Deepak, Paulo Ferreira Design, construction and testing of a robust and safe gas line for in-situ gas TEM experiments
19:15 - 19:20 Materials-T2	Maryam Karimi *(International Iberian Nanotechnology Laboratory - INL)*, Rui Maia, Rajashree Konar, Pedro Costa, Paulo Ferreira Investigating the Degradation Mechanisms of IrO2 Catalysts for Proton Exchange Membrane Water Electrolysis Using In-Situ Scanning Transmission Electron Microscopy
19:20 - 19:30	Industry talk

September 25th - Day 3 (Thursday) 3

Session 2.1 Life Sciences+CryoEM

09:00 - 09:15 Sciences+CryoEM-O1
Maria A. Oliva *(Centro de Investigaciones Biológicas Margarita Salas (CIB), CSIC, Madrid 28040, Spain)*, Ana de Lucas, Ana J Perez-Berna, Transito Garcia-Garcia, Laura Mendoza, Blanca Dies, Federico Gattini, Raul Fernandez-Rodriguez, Sara Zaldivar-Lopez, Maria J. Rodriguez, Biaggio Mandracchia, Diego Megias, Daniel Luque, Eva Pereiro, Juan Garrido, Maria Montoya
ORF3a reshapes host cell architecture through vesicle remodeling and lipid mobilization

09:15 - 09:30 Sciences+CryoEM-O2
Kevin Mamprin *(ALBA Synchrotron Light Source, Cerdanyola del Vallès (Barcelona), Spain)*, Ana Joaquina Pérez Berná
Multimodal Correlative Imaging Using Cryo-SXT, Cryo-SIM, and Cryo-EM to Study Membranous Rearrangement Morphology in West Nile Virus-Infected Cells

09:30 - 09:45 Sciences+CryoEM-O3
Lidia Rodriguez, Luis Fernandez, Ignacio Arechaga *(Instituto de Biomedicina y Biotecnología de Cantabria (CSIC-UC). c/ Abert Einstein 22. PCTCAN. 39011 Santander)*
New opportunities for Electron Microscopy in Santander

09:45 - 10:00 Sciences+CryoEM-O4
gonzalo alvarez viar *(Human Technopole)*, gaia pigino, nikolai klena, Fabrizio Martino, adrian nievergelt, davide bolognini, paola capasso
Protofilament-specific nanopatterns of tubulin post-translational modifications regulate the mechanics of ciliary beating

10:00 - 10:15 Sciences+CryoEM-O5
Esther Gonzalez-Almela *(National Center for Biotechnology (CNB-CSIC))*, Alvaro Castells-Garcia, François Le Dily, Manuel F. Merino, Davide Carnevali, Pol Cusco, Luciano Di Croce, Pia Cosma
Super-resolution microscopy reveals how viral infection reshapes host genome structure

10:15 - 10:30 Sciences+CryoEM-O6
Joao Rodrigues, Rui Matias, Isabel Dias Nogueira, Luisa Jordao *(Instituto Nacional de Saude Dr Ricardo Jorge (INSA), Departamento de Saude Ambiental (DSA), Lisboa, Portugal)*
Following the Interaction Between Microplastics, Biofilms and Antimicrobials Resistance

Session 2.1 Materials

09:00 - 09:20 Materials-O1
JING YU *(Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Barcelona, Spain)*, Jordi Arbiol, Andreu Cabot
Atomic-Scale Dual-Atom Detection for Lithium–Sulfur Battery Catalysts via Advanced STEM Techniques

09:20 - 09:40 Materials-O2
Maurya Sandeep Pradeepkumar *(International Iberian Nanotechnology Laboratory (INL), Braga-4715-330, Portugal)*, Meera Mohan, M. Helena Braga, Francis Leonard Deepak
Atomic-Scale Insights into Ba-Doped $LiOCl_3$ Anti-Perovskite Electrolytes for Solid-State Batteries

09:40 - 10:00 Materials-O3
SIROUS KHABBAZABKENAR *(Istituto Italiano di Tecnologia, Electron Spectroscopy and Nanoscopy, Genova 16163, Italy.)*, Alexander Schleusener, Mehrdad Faraji, Roman Krahne, Giorgio Divitini
Composition-Strain Correlation in 2D Metal-Halide Perovskite Lateral Heterostructures: A 4D-STEM Study

10:00 - 10:20 Materials-O4
M. Chiara Spadaro *(Physics and Astronomy Department, University of Catania, S. Sofia 64, Catania I-95123, Italy)*, Daniela Russo, Alessia Fischetti, Giacometta Mineo, Claudio Lentini-Campalleggio, Elena Bruno, Maria Grazia Grimaldi, Francesco Salutari, Jordi Arbiol, Giorgia Franzò, Salvo Mirabella, Vincenzina Strano
Optimised earth abundant electrodes for energy storage applications

10:20 - 10:30
Industry talk

10:30 - 11:00
Coffee Break

Session 2.2 Life Sciences+CryoEM

11:00 - 11:15 Sciences+CryoEM-O1
Álvaro de la Gándara, Mercedes Spínola-Amilibia, Lidia Araújo-Bazán, Irene Rizzuto, Rafael Núñez-Ramírez, James M. Berger, Ernesto Arias-Palomo *(Centro de Investigaciones Biológicas Margarita Salas (CIB), CSIC)*
Stranger Strands: Dissecting Transposition Through Cryo-EM and AI Prediction.

11:15 - 11:30 Sciences+CryoEM-O2
Ivan Ubarrechena *(Instituto Biofisika (UPV/EHU, CSIC), Leioa, Spain)*, Adnan Halim, Javier O Cifuente, Lorenzo Povolo
Structure and mechanism of human O-mannosyltransferase TMEM260 implicated in congenital heart disease

11:30 - 11:45 Sciences+CryoEM-O3
Juan de Dios Alché *(Estacion Experimental del Zaidin (EEZ-CSIC))*, José Luis Canón, Rocío Pacheco, Elena Lima, Antonio Jesús Castro
Fluorescence Localization and Quantitation of Nitric oxide-mediated PTMs in pollen grains

11:45 - 12:00 Sciences+CryoEM-O4
David Herreros *(Spanish National Center for Biotechnology CNB-CSIC, Madrid, Spain)*, Carlos Oscar Sánchez Sorzano, José María Carazo
Validation of experimental CryoEM conformational landscapes with FlexConsensus

12:00 - 12:15 Sciences+CryoEM-O5
Sonia Huecas *(Centro de Investigaciones Biológicas Margarita Salas (CIB), CSIC)*, Adrian Plaza-Pegueroles, Carlos Fernández-Tornero
Cryo-EM studies on RNA polymerase III transcriptional pausing

12:15 - 12:30 Sciences+CryoEM-O6
Lautaro Baro *(Cytoskeletal Dynamics in Cell Migration and Cancer Invasion Laboratory, Centro de Investigación Príncipe Felipe, 46012 Valencia, Spain.)*, Maria Angeles Juanes Ortiz
Multiscale Imaging Reveals the Role of APC-driven Actin Nucleation in Collective Cell Remodelling, Motility and Mechanotransduction in Cancer Cells

12:30 - 12:45 Sciences+CryoEM-O7
Ignacio Francés-Castillo *(Instituto Universitario de Investigación en Biotecnología y Biomedicina (BIOTECMED), Burjassot 46100, Valencia, Spain)*, Ana Hernandez Grimalt, Sergi Morais Ezquerro, Pilar Domingo Calap, Marisa López-Redondo, Patricia Casino
Structural Characterization of the K50 Depolymerase

12:45 - 12:55 Sciences+CryoEM-O8
Eva Estevan-Morió *(Molecular Biology Institute of Barcelona (IBMB-CSIC))*, Laia González-Pérez, Julia Hedengrahn, Ulrich Eckhard
Structural characterization and functional testing of surface-enhanced bacterial flagella

12:55 - 13:00 Sciences+CryoEM-T1
Enric Perez-Parets *(Instituto de Ciencias Fotónicas (ICFO) Mediterranean Technology Park, Avinguda Carl Friedrich Gauss, 3, 08860 Castelldefels, Barcelona)*, Denitza Denkova, Gustavo Castro, Marina Cunquero, Helena Isla-Magrané, Martin Eriksen, Gonzalo Merino, Anna Duarri, Pablo Loza-Alvarez
Studying Retinal Repair Through 2D and 3D Calcium Imaging with Two-Photon Excitation Fluorescence Microscopy

Session 2.2 Materials

11:00 - 11:20 Materials-O1	Irene Piedra *(Departamento de Ciencias de los Materiales e Ingeniería Metalúrgica y Química Inorgánica, Facultad de Ciencias, Universidad de Cádiz, Campus Río San Pedro S/N, Puerto Real, 11510 Cádiz, Spain)*, Ramón Manzorro, Rafael Nuez, Miguel López-Haro, José Antonio Pérez-Omil, José Juan Calvino, Ana Belén Hungría Comparative Analysis of In-situ STEM Techniques in the Reduction Study of CeO_2-Based Catalysts
11:20 - 11:40 Materials-O2	Mingqing Sun *(Catalan Institute of Nanoscience and Nanotechnology Nanotechnology (ICN2))*, Jordi Arbiol From Nano to Micro Scales: Probing Multi-Element Redox Dynamics in Sodium Manganese Oxide for Sodium-Ion Batteries Using SEM and TEM
11:40 - 12:00 Materials-O3	Luc Lajaunie *(Departamento de Ciencia de los Materiales e IM y QI. F. Ciencias. IMEYMAT. Campus Río San Pedro. Universidad de Cádiz. 11510 Puerto Real (Cádiz). Spain.)*, Antonio Jesus Medina Olivera, Céline Maynau, Conrado Valero Hernández, Ramón Manzorro, Ana Hungría, Juan Carlos Hernández Garrido Exploring the Electrocatalytic, Photoelectrocatalytic, and Structural Properties of Metal@MoS_2 Core-Shell Nanostructures
12:00 - 12:20 Materials-O4	Lluís Yedra *(Laboratiry of Electron Nanoscopies - MIND - IN2UB - Dept. Enginyeria Electrònica i Biomèdica, Universitat de Barcelona)*, Pranjal Nandi, Beatriz Vargas, Daniel del-Pozo-Bueno, Sergi Plana-Ruiz, Kevin Castelló, Fernanda Monteiro Freitas, Juan Carlos González-Rosillo, Alex Morata, Sònia Estradé, Francesca Peiró All Solid-State Batteries in the TEM: Novel Tools for Battery Degradation Assessment
12:20 - 12:40 Materials-O5	Francesco Salutari *(Catalan Institute of Nanoscience and Nanotechnology Nanotechnology - ICN2, (CSIC and BIST))*, Maria Chiara Spadaro, Simon Escobar Steinvall, Aidas Urbonavicius, Kimberly Dick, Jordi Arbiol In-depth TEM characterization of the earth-abundant photovoltaic absorber ZnSnP2 for sustainable energy production
12:40 - 13:00 Materials-O6	Hui Chen *(Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Spain)*, Alba Garzón Manjón, David Llorens Rauret, Alejandro Gómez Roca, Josep Nogués, Jordi Arbiol Atomic Scale Exploration of High-Entropy Oxide Electrocatalysts for Green Hydrogen Production
13:00 - 14:15	**Lunch + Poster Session**
	Session 2.3 Life Sciences+CryoEM
14:15 - 14:30 Sciences+CryoEM-O1	Olivia Muriel *(Department of Macromolecular Structures, Centro Nacional de Biotecnología (CNB-CSIC), Madrid, Spain.)*, Beatriz Sancho-González, Jonathan Gabriel Piccirillo, David Delgado-Gestoso, Ana Cuervo, Jorge Cuéllar, Noa Beatriz Martín-Cófreces, Francisco Sánchez-Madrid, José María Valpuesta In situ characterization of CCT during immune synapse
14:30 - 14:45 Sciences+CryoEM-O2	Francisco Javier Chichón *(Spanish National Center for Biotechnology CNB-CSIC, Madrid, Spain)*, Noelia Zamarrreño, David Delgado, Olivia Muriel, Cesar Santiago, Jonathan Gabriel Picchirillo, Maria Teresa Bueno, Mikel Iceta, Irene Sánchez, Rocio Arranz A New Era for the CryoEM Facility (CNB-CSIC)
14:45 - 15:00 Sciences+CryoEM-O3	Ane Martinez-Castillo *(Structure and Cell Biology of Viruses Lab, Center for Cooperative Research in Biosciences (CIC bioGUNE) Basque Research and Technology Alliance (BRTA); Derio, Spain.)*, Diego Charro, Susanne Koethe, Chistopher Maffeo, Isaac Santos-Perez, Parth Chaturvedi, Mikel Azkargorta, Andrea Aebischer, Ander Vidaurrazaga, Daniel Castaño-Diez, Kyle Dent, Martin M Walsh, Felix Elortza, Aleksei Aksimentiev, Martin Beer, Nicola GA Abrescia Pestivirus assembly by cryo-ET and computational analysis
15:00 - 15:15 Sciences+CryoEM-O4	Andrea Sorrentino *(ALBA Synchrotron Light Source, Cerdanyola del Vallès, Barcelona, Spain)*, Francesca Rossi, Yael Noy, Yuval Barzilay, Ana Perez, Emil Malucelli, Zohar Eyal, Dvir Gur, Stefano Iotti CALCIUM and NITROGEN BIOMINERALIZATION STUDIES in FROZEN HIDRATED WHOLE CELLS USING TRASMISSION SOFT X-RAY MICROSCOPY
15:15 - 15:30 Sciences+CryoEM-O5	Pablo Guerra *(Cryo Electron Microscopy Platform IBMB-CSIC)* EM01-CRYO-TEM: a New Cryo Electron Microscopy Platform at ALBA
15:30 - 15:45 Sciences+CryoEM-O6	Saúl Alcalá-Pérez, José-Jesús Fernández, María Rosario Fernández-Fernández *(Centro de Investigación en Nanomateriales y Nanotecnología-Consejo Superior de Investigaciones Científicas (CINN-CSIC). El Entrego, Asturias, Spain.)* In vivo Labelling of Specific mRNAs Using CRISPR-deadCas13 Strategies as a Tool for Cryo-correlative Light Electron Microscopy
15:45 - 16:00 Sciences+CryoEM-O7	André Gouveia, Sharon Wolf, Michael Elbaum, Célia Romão *(ITQB NOVA - Universidade NOVA de Lisboa)* Cryo-STEM and X-ray fluorescence imaging reveals Electron-Dense granules as dynamic metal reservoirs in response to stress
16:00 - 16:05 Sciences+CryoEM-T1	Andrés López-Perrote *(Spanish National Cancer Research Centre (CNIO), Structural Biology Programme, Melchor Fernández Almagro 3, 28029 Madrid, Spain)*, Eva María Martín-Cuevas, José Antonio Mérida-Cerro, Clara Aicart-Ramos, Ana González-Corpas, Johanne Le Coq, Jasminka Boskovic, Isabel Chillón, Oscar Llorca, Fernando Moreno-Herrero, Maite Huarte Structure of CONCR, a lncRNA that regulates DNA replication and chromatid cohesion
16:05 - 16:10 Sciences+CryoEM-T2	Marcos Gragera *(Centro Nacional de Biotecnología (CNB), CSIC, 28049, Madrid, Spain)*, David Herreros, Roberto Melero, Carlos Oscar Sanchez Sorzano, Jose Maria Carazo Introducing FlexibilityHub, a new service for the analysis of molecular motions in cryoEM data.
16:10 - 16:15 Sciences+CryoEM-T3	Ana Cuervo *(Centro Nacional de Biotecnología, CSIC, Campus de Cantoblanco. Madrid. Spain)*, Hongtao Liu, Julia Kowal, Patricia Losana, David Herreros, Carlos Oscar Sorzano, Kaspar P Locher, José María Carazo Exploring Different Conformations of Hepatic ABCB11 Transporter
	Session 2.3 Materials
14:15 - 14:35 Materials-O1	Malcolm Dearg, Rafael V. Ferreira *(GFMC, Departamento de Física de Materiales, Universidad Complutense de Madrid, Madrid 28040, Spain)*, Juan I. Beltrán, Ellie-Mae Bambrick-Sattar, Javier Tornos, Jacobo Santamaria, Maria Varela, Gabriel Sánchez-Santolino, Laura Clark Charged domain walls revealed by electron ptychography
14:35 - 14:55 Materials-O2	Roger Guzman *(Institute of Materials Science of Barcelona, Bellaterra, Spain)*, Miguel Pruneda, Gyanendra Singh, Gervasi Herranz, Jaume Gazquez, Wu Zhou Probing the Electron-Phonon Coupling at Superconducting Oxide Interfaces by Atomic Resolution Vibrational EELS
14:55 - 15:15 Materials-O3	Mario Pelaez-Fernandez *(Unité Matériaux et Transformations (UMET UMR 8207), U. Lille (Villeneuve d'Ascq), France)*, Daniel del-Pozo-Bueno, Maya Marinova, Adrien Teurtrie, Marta Estrader, Germán Salazar-Alvarez, Raul Arenal, Hugues Leroux, Francesca Peiró, Sonia Estradé, Francisco de la Peña Low-energy Core-loss EELS as a Dose-effective Approach for Oxidation State Mapping
15:15 - 15:35 Materials-O4	Daniel del Pozo Bueno *(Departament d'Enginyeria Electrònica i Biomèdica & Institute of Nanoscience and Nanotechnology, Universitat de Barcelona, Martí i Franquès, 1, 08028 Barcelona.)*, Andrea Sorrentino, Dino Tonti, Gabriel Jover Manas, Sònia Estradé, Francesca Peiró Advanced unsupervised clustering of Scanning Transmission X-Ray Microscopy spectral imaging using a UMAP and HDBSCAN framework

15:35 - 15:55 Materials-O5	Paula Aniceto-Ocaña, José Marqueses-Rodriguez, Juan M. Muñoz-Ocaña, María J. Fernandez-Trujillo, Andrés G Algarra, Antonio M Rodriguez-Chia, José J. Calvino, Carmen E. Castillo, Miguel Lopez-Haro *(Departamento Ciencia de los Materiales, Ing. Metalúrgica y Química Inorgánica, Universidad de Cádiz, 11510 Puerto Real, Cádiz, Spain.)* Quantitative Analysis of Metal-Metal Interactions in C-SACs from HAADF-STEM Images via Deep Learning, Mathematical Optimization, and DFT
15:55 - 16:00 Materials-T1	Marta Navarro *(Instituto de Nanociencia y Materiales de Aragón (INMA) CSIC-Universidad de Zaragoza, Zaragoza 50018, Spain)*, Andoni Moriones, José Miguel Luque, Carlos Téllez, Patricia Gorgojo Atomic Force Microscopy and Electron Microscopy for the Autopsy of MD Desalination Membranes Containing 2D Nanoadsorbents
16:00 - 16:05 Materials-T2	Athique Ahmed Ali *(Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, 08193 Barcelona, Catalonia, Spain)*, Sangeeth Kallatt, Carina Babu Maliakkal, Aziz Genç, Peter Krogstrup, Jordi Arbiol Atomic-Scale Characterization of Josephson Junctions for Superconducting Quantum Devices
16:05 - 16:15	Industry talk
16:15 - 16:45	**Coffee Break**
	Session 2.4 Life Sciences+CryoEM
16:45 - 17:00 Sciences+CryoEM-O1	Jorge Gutiérrez Seijo *(Centro Nacional de Biotecnología (CNB-CSIC))*, Sergio Pipaón, Ana Cuervo, Jesús G Ovejero, Cesar Santiago, María del Puerto Morales, José María Valpuesta, Jorge Cuéllar Structural Engineering of Poly-CCT5 Chaperonin: A Novel Platform for Nanoparticle Delivery
17:00 - 17:15 Sciences+CryoEM-O2	Jimena Muntaner *(Centro Nacional de Biotecnología (CNB-CSIC))*, Moises Maestro-López, Tat Cheung Cheng, Jorge Cuéllar, José María Valpuesta, Eri Sakata Structural characterization of a complex involved in chaperone-assisted UPS degradation
17:15 - 17:30 Sciences+CryoEM-O3	Iker Arriaga, Aitor Navarro, Esther Uribe-Echeverría, Maria Isábal, Elisa Silva, Thomas Guarinoni, Valérie Lang, Haizea Iribar, César Trigueros, Philippe Moullier, Achille François, Nicola G. A Abrescia *(Structure and Cell Biology of Viruses Lab, CIC bioGUNE, Basque Research and Technology Alliance (BRTA), Derio, Bizkaia, 48160, Spain.)* Insights into AAV stability and particle integrity during viral vector biopharmaceutical manufacturing
17:30 - 17:45 Sciences+CryoEM-O4	Sergio Pipaón Alcíbar *(Centro Nacional de Biotecnología (CNB-CSIC). Darwin, 3. 28049 Madrid, Spain)*, Ana Cuervo, José Moreno-Bautista, Elena Pascual, Isabel García-Álvarez, Aurora Martínez, José María Valpuesta, Jorge Cuéllar Functional and Structural Insights into the Modulation of the Chaperonin CCT by Small Molecules
	Session 2.4 Materials
16:45 - 17:05 Materials-O1	Partha Pratim Das *(NanoMEGAS SPRL, Rue Èmile Claus 49 bte 9, Brussels, 1050, Belgium)*, Alejandro Gomez-Perez, Evangelos Grivas, Stavros Nicolopoulos, Simon J. L. Billinge, Athanassios S. Galanis, Edgar F. Rauch, Joaquim Portillo, Martijn J. Fransen ePDF Mapping: Revealing Amorphous Structures at Nanometer Resolution in TEM
17:05 - 17:25 Materials-O2	Shunrui Luo *(INL International Iberian Nanotechnology Laboratory, Braga)*, Fatemeh Latifi, Rui Maia, Paulo Ferreira Advanced EELS Analysis of σ/π Bonding in Beam-Sensitive Materials
17:25 - 17:45 Materials-O3	Ivan Pinto-Huguet *(Catalan Institute of Nanoscience and Nanotechnology Nanotechnology - ICN2, (CSIC and BIST))*, Marc Botifoll, Jordi Arbiol Automating data processing in STEM: From micrographs to atomic models
17:45 - 17:50 Materials-T1	Miguel Ángel Pérez García *(IMEYMAT: Institute of Research on Electron Microscopy and Materials of the University of Cadiz. Puerto Real (Spain))*, Lionel Cervera Gontard Three-Dimensional Characterization of the Cathodoluminescence of as-Prepared Fluorite with 3DSEM-CL
17:50 - 17:55 Materials-T2	Luis Eduardo Piedra Marin *(International Iberian Nanotechnology Laboratory-INL Braga, Portugal)*, Pedro Costa, Paulo Ferreira Atomic-Scale Visualization of Moiré Patterns in Graphene Using TEM
17:55 - 18:00 Materials-T3	Daiyuan Li, Sara Kayani, Qing Zhang, Zhuoya Dong, Daniel Pizarro, Alvaro Mayoral *(Instituto de Nanociencia y Materiales de Aragón (INMA), CSIC-Universidad de Zaragoza, 50009 Zaragoza, Spain)* Atomic-Scale Imaging of Beam-Sensitive Frameworks Using Electron Ptychography
18:00 - 18:10	Industry talk
18:30 - 19:30	**SME Annual Assembly**
18:30 - 19:30	**SPMicros Annual Assembly**

September 26th - Day 4 (Friday) 4	
	Session 3.1 Life Sciences+CryoEM
09:15 - 09:30 Sciences+CryoEM-O1	María J Rodríguez-Espinosa *(National Center for Biotechnology (CNB-CSIC))*, Javier Collado-Ávila, César Santiago, Partha P. Das, Stavros Nicolopoulos, Jaime Martin-Benito Resolving crystal structures through serial electron diffraction
09:30 - 09:45 Sciences+CryoEM-O2	Beatriz Sancho-González *(Centro Nacional de Biotecnología (CNB-CSIC))*, Olivia Muriel-López, Jonathan Gabriel Piccirillo, David Delgado-Gestoso, José Javier Conesa, Noa Beatriz Martín-Cofreces, Francisco Sanchez-Madrid, José María Valpuesta Correlative multimodal cryo-microscopy for the structural characterization of oxaliplatin-induced immunogenic cell death
09:45 - 10:00 Sciences+CryoEM-O3	Martín Alcorlo-Pages, Samuel Miguez-Amil, Svein I. Støve, Marte Innselset Flydal, Aurora Martinez, Juan A. Hermoso, Rafael Fernandez-Leiro *(Centro Nacional de Investigaciones Oncológicas (CNIO))* Structural and Mechanistic Insights into Human Phenylalanine Hydroxylase
10:00 - 10:05 Sciences+CryoEM-T1	David Delgado-Gestoso *(Centro Nacional de Biotecnología (CNB-CSIC))*, Diego Carlero, Andrea Modrego, Daniel Cenisergue, Noelia Zamarreño, Jaime Martín-Benito, Rocío Arranz Implementing Cryo-CLEM Methodologies to Study Host–Pathogen Interactions in Influenza Infection
10:05 - 10:10 Sciences+CryoEM-T2	Jonathan Gabriel Piccirillo *(Centro Nacional de Biotecnología (CNB-CSIC))*, Jose Javier Conesa, David Delgado-Gestoso, Francisco Javier Chichon Chichon, Rocio Arranz, Jose Maria Valpuesta Cryo FIB-SEM Volume Imaging: issues and solutions
10:10 - 10:15 Sciences+CryoEM-T3	Rafael Nuñez-Ramirez *(Centro de Investigaciones Biológicas Margarita Salas (CIB), CSIC, Madrid 28040, Spain)*, Begoña Pou, Ernesto Arias-Palomo Single particle analysis in a Talos L120C G2 cryo-electron microscope
10:15 - 10:20 Sciences+CryoEM-T4	Marta Pardo-Piñón *(Instituto Biofisika (UPV/EHU, CSIC), Leioa, Spain)*, Raffaele Coray, María Lucas, Miguel Romano-Moreno, Adriana L. Rojas, Daniel Castaño, Aitor Hierro Spatial organization of the Retromer-SNX12 membrane coat
10:20 - 10:30 Sciences+CryoEM-S1	Abel Sainz *(Carl Zeiss Iberia)* ZEISS Industry
	Session 3.1 Materials
09:15 - 09:35 Materials-O1	Francisco Fernandez-Canizares *(Departamento de Física de Materiales, Universidad Complutense de Madrid, Madrid 28040, Spain)*, Javier Rodriguez-Vazquez, Rafael V. Ferreira, Isabel Tenreiro, Alberto Rivera-Calzada, Amalia Fernando-Saavedra, Miguel A. Sanchez-Garcia, Yong Xie, Andres Castellanos-Gomez, Maria Varela, Gabriel Sánchez-Santolino Automated Atomic Site Identification by 4D - Scanning Transmission Electron Microscopy
09:35 - 09:55 Materials-O2	Peters James Caleb *(International Iberian Nanotechnology Laboratory, Braga, Portugal.)*, Caha Ihsan, Brito Daniel, Sadwasser Sascha, Alpuim Joao Pedro, Deepak Francis Leonard Atomic-Scale structural insights of Cu- and Ga-Doped Bi_2Se_3 using 4DSTEM
09:55 - 10:15 Materials-O3	David Llorens Rauret *(ICN2 (CSIC and BIST), 08193 Campus UAB, Bellaterra, Barcelona, Spain)*, Ranit Ram, F. Pelayo García de Arquer, Alba Garzón Manjón, Jordi Arbiol Atomic-Scale Insights into CoWO4 for Water Splitting
10:15 - 10:35 Materials-O4	Beatriz Galiana *(Departamento de Física, Universidad Carlos III de Madrid)*, Elisa García-Tabares, Alicia Gonzalo, Jose Miguel Reynolds, Mario Santiuste STEM characterization of III-V nanowires using 4D-STEM and Differential Phase Contrast
10:30 - 11:15	**Coffee Break**
11:15 - 12:15	**CryoEM Lecture. Giulia Zanetti**
12:15 - 13:15	**PhD Awards on Material Sciences (x2)**
13:15 - 14:15	**Lunch**
14:15 - 15:15	**Life Sciences Lecture. Wiebke Mobius**
15:15 - 16:15	**PhD Awards on Technical Developments (x2)**
16:15 - 17:15	**Closing Lecture: Amadeo López Vázquez de Parga**
17:15 - 17:25	**SME Exhibition presentation. Juande Alché**
17:25 - 17:50	**Closing Ceremony and Awards**

Poster Contribution

005	Xinxin Hu *(Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, 08193 Barcelona, Catalonia, Spain)*, Yingzhuo Lun, Umair Saeed, Iván Pinto-Huguet, Kapil Gupta, Bernat Mundet, José Santiso, David Pesquera, Gustau Catalan, Jordi Arbiol Twist-induced Polar Structures in Free-standing Oxide Membranes
042	Luisa María Valencia Liñán *(Instituto de Ciencia de Materiales de Sevilla, Universidad de Sevilla, CSIC, Av Americo Vespucio, Seville, Spain)*, Miriam Herrera Collado, Sergio Ignacio Molina Rubio Chemical evolution of polymer materials for additive manufacturing during STEM-EELS electron beam irradiation
043	Vanessa Costa-Ledesma *(Laboratiry of Electron Nanoscopies - MIND - IN2UB - Dept. Enginyeria Electrònica i Biomèdica, Universitat de Barcelona)*, Daniel del Pozo-Bueno, Francesca Peiró, Sònia Estradé WhatEELS 2.0: open source software based in Python for EELS analysis
054	Jinhai LIU *(ICN2 (CSIC and BIST), 08193 Campus UAB, Bellaterra, Barcelona, Spain)*, Jing YU, Andreu Cabot, Jordi Arbiol Transmission electron microscopy studies on the changes in the cathode structure of high-load electrodes with spatial arrangements
082	Simon Hettler *(Laboratory for Electron Microscopy, Karlsruhe Institute for Technology, Karlsruhe, Germany)*, Raul Arenal Detailed STEM-EELS Investigations of Iron-Oxide Nanoparticles with Co/Ni-Ferrite Shells
093	Daiyuan Li *(Instituto de Nanociencia y Materiales de Aragón (INMA), CSIC-Universidad de Zaragoza 50009, Spain)*, Itziar Arnaiz, Yaregal Awoke, Sara Kayani, Qing Zhang, Isabel Diaz, Daniel Pizarro, Mayoral Alvaro Electron Microscopy Study of the Interzeolite Transformation from Natural Mordenite to ZSM-5
097	Enrique Carbo-Argibay *(International Iberian Nanotechnology Laboratory, Braga, Portugal.)*, Dmitri Y. Petrovykh Access to State-of-the-Art Electron Microscopy Facilities through INFRACHIP Project
111	Carmen Majano López de Madrid *(CENTRO NACIONAL DE BIOTECNOLOGIA (CNB-CSIC))*, Rebeca Bocanegra, Borja Ibarra, Julia Rubio, José Requejo, Javier María Rodriguez, Jorge Cuellar, José María Valpuesta Single-Molecule and Cryo-EM Approaches to Study the Folding Mechanism of Human CCT
112	César Santiago *(CENTRO NACIONAL DE BIOTECNOLOGIA (CNB-CSIC))*, Eva M. Garcia-Cuesta, Javier Collado-Ávila, José Miguel Rodríguez-Frade, Mario Mellado Precision Modulation of CXCR4 Function Through Allosteric Inhibition of Receptor Clustering
113	Carmen García *(Spanish National Cancer Research Centre (CNIO), Structural Biology Programme, Melchor Fernández Almagro 3, 28029 Madrid, Spain)*, Andrés López-Perrote, Jasminka Boskovic, Óscar Llorca Cryo-EM reveals conformational changes in the RUVBL1-RUVBL2 ATPase induced by ATP binding
114	Javier Coloma *(Structural Biology Programme, Spanish National Cancer Research Centre (CNIO), Madrid, Spain.)*, Nayim Gonzalez-Rodriguez, Jaime Alegrio Louro, Neal F. Lue, Oscar Llorca Characterization of the yeast Cdc13 dimeric protein
116	Laura Villamayor-Belinchón *(Instituto de Biomedicina de Valencia (IBV-CSIC))*, Rosendo Bresó, José Luis Llácer, Teresa Cortés Reconstitution of the Mycobacterium tuberculosis translation system to understand translation initiation control
117	Javier Pérez-Rueda *(Departamento de Bioquímica y Biología Molecular, Universidad de Valencia, Burjassot 46100, Valencia, Spain)*, María Jesús Marcote, Fernando Aniento COPII (Coat Protein II) vesicles and response to stress in plants