

**LMA – Laboratorio de Microscopías Avanzadas**

**Universidad de Zaragoza**

**Publicaciones 2019**

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**110th Anniversary: Nucleation of Ag Nanoparticles in Helical Microfluidic Reactor. Comparison between Microwave and Conventional Heating,**

Manno, R; Sebastian, V; Mallada, R; Santamaria, J

2019 Industrial & Engineering Chemistry Research 58, (28), pp 12702-12711

DOI: 10.1021/acs.iecr.9b01460

**110th Anniversary: Polyamide/Metal-Organic Framework Bilayered Thin Film Composite Membranes for the Removal of Pharmaceutical Compounds from Water**

Paseta, L; Antoran, D; Coronas, J; Tellez, C

2019 Industrial & Engineering Chemistry Research, 58 (10), pp4222-4230

DOI: 10.1021/acs.iecr.8b06017

**An overview of the recent advances in inorganic nanotubes**

Serra M., Arenal R., Tenne R.

2019 Nanoscale, 11(17), pp. 8073-8090

DOI: doi.org/10.1039/C9NR01880H

**Antimicrobial Electrospun Polycaprolactone-Based Wound Dressings: An In Vitro Study About the Importance of the Direct Contact to Elicit Bactericidal Activity**

Gamez, E; Mendoza, G; Salido, S; Arruebo, M; Irusta, S

2019 Advances In Wound Care, 8 (9), pp 438-451

DOI: 10.1089/wound.2018.0893

**Au-MoS<sub>2</sub> Hybrids as Hydrogen Evolution Electrocatalysts**

Bar-Ziv, R; Ranjan, P; Lavie, A; Jain, A; Garai, S; Bar Hen, A; Popoyitz-Biro, R; Tenne, R; Arenal, R; Ramasubramaniam, A; Lajaunie, L; Bar-Sadan, M

2019 ACS Applied Energy Materials, 2 (8), pp 6043- 6050

DOI: 10.1021/acsaem.9b01147

**Ballistic InSb Nanowires and Networks via Metal-Sown Selective Area Growth**

Aseev, P; Wang, GZ; Binci, L; Singh, A; Marti-Sanchez, S; Botifoll, M; Stek, LJ; Bordin, A;

Watson, JD; Boekhout, F; Abel, D; Gamble, J; Van Hoogdalem, K; Arbiol, J;

Kouwenhoven, LP; de Lange, G; Caroff, P

2019 Nano Lett, 19, 12, 9102-9111

DOI: 10.1021/acs.nanolett.9b04265

**Capacitive and Charge Transfer Effects of Single-Walled Carbon Nanotubes in TiO<sub>2</sub> Electrodes**

Anson-Casaos, A; Rubio-Munoz, C; Hernandez-Ferrer, J; Santidrian, A; Benito, AM;

Maser, WK

2019 Chemphyschem, 20 (6), pp 838-847

DOI: 10.1002/cphc.201900066

**Caracterización de nanopartículas de magnetita sintetizadas por el método de coprecipitación**

Morales, F; Sagredo, V; Torres, T; Marquez, G  
2019 Ciencia E Ingenieria, 40 (1), pp 39-44

**Chemical Ordering in Bimetallic FeCo Nanoparticles: From a Direct Chemical Synthesis to Application As Efficient High-Frequency Magnetic Material**

Garnero, C; Lepesant, M; Garcia-Marcelot, C; Shin, Y; Meny, C; Fuger, P; Warot-Fonrose, B; Arenal, R; Viau, G; Soulantica, K; Fau, P; Poveda, P; Lacroix, LM; Chaudret, B  
2019 Nano Lett., 19 (2), pp. 1379.1386  
DOI: 10.1021/acs.nanolett.8b05083

**Chirality manifestation in elastic coupling between the layers of double-walled carbon nanotubes**

Rochal, S; Levshov, D; Avramenko, M; Arenal, R; Cao, TT; Nguyen, VC; Sauvajol, JL; Paillet, M  
2019 Nanoscale, 11,(34), pp 16092-16102  
DOI: 10.1039/c9nr03853a

**Comparison between focused electron/ion beam-induced deposition at room temperature and under cryogenic conditions**

De Teresa J.M., Orús P., Córdoba R., Philipp P.  
2019 Micromachines, 10(12),799  
DOI: 10.3390/mi10120799

**Composite scaffold obtained by electro-hydrodynamic technique for infection prevention and treatment in bone repair**

Aragon, J; Feoli, S; Irusta, S; Mendoza, G  
2019 International Journal Of Pharmaceutics, 557, pp 162-169  
DOI: 10.1016/j.ijpharm.2018.12.002

**Controlling the dominant magnetic relaxation mechanisms for magnetic hyperthermia in bimagnetic core-shell nanoparticles**

Fabris, F; Lima, E; De Biasi, E; Troiani, HE; Mansilla, MV; Torres, TE; Pacheco, RF; Ibarra, MR; Goya, GF; Zysler, RD; Winkler, EL  
2019 Nanoscale, 11 (7),pp 3164-3172  
DOI: 10.1039/c8nr07834c

**Design of Bistable Gold@Spin-Crossover Core-Shell Nanoparticles Showing Large Electrical Responses for the Spin Switching**

Torres-Cavanillas R., Sanchis-Gual R., Dugay J., Coronado-Puchau M., Giménez-Marqués M., Coronado E.  
2019 Advanced Material, 31, 27  
DOI: 10.1002/adma.201900039

**Determination of the Evolution of Heterogeneous Single Metal Atoms and Nanoclusters under Reaction Conditions: Which Are the Working Catalytic Sites?**

Liu L., Meira D.M., Arenal R., Concepcion P., Puga A.V., Corma A.  
2019 ACS Catalysis 9(12), 10626-10639  
DOI: 10.1021/acscatal.9b04214

**Diameter distribution by deconvolution (DdD): absorption spectra as a practical tool for semiconductor nanoparticle PSD determination**

Onna, D; Ipina, IP; Casafuz, AF; Mayoral, A; Garcia, MRI; Bilmes, SA; Ricci, MLM  
2019 Nanoscale Advances, 1 (9), pp 3499-3505

DOI: 10.1039/c9na00344d

**Diameter modulation of 3D nanostructures in focused electron beam induced deposition using local electric fields and beam defocus**

Pablo-Navarro, J; Sangiao, S; Magen, C; de Teresa, JM  
2019 Nanotechnology, 30 (50), 505302  
DOI: 10.1088/1361-6528/ab423c

**Double-walled iron oxide nanotubes via selective chemical etching and Kirkendall process**

Azevedo, J; Fernandez-Garcia, MP; Magen, C; Mendes, A; Araujo, JP; Sousa, CT  
2019 Scientific Reports, 9, 11994  
DOI: 10.1038/s41598-019-47704-5

**Effects of Zn Substitution in the Magnetic and Morphological Properties of Fe-Oxide-Based Core-Shell Nanoparticles Produced in a Single Chemical Synthesis**

Lohr J., De Almeida A.A., Moreno M.S., Troiani H., Goya G.F., Torres Molina T.E., Fernandez-Pacheco R., Winkler E.L., Vasquez Mansilla M., Cohen R., Nagamine L.C.C.M., Rodríguez L.M., Fregenal D.E., Zysler R.D., Lima E.  
2019 J. Phys. Chem. C 2019, 123, 2, 1444-1453  
DOI: 10.1021/acs.jpcc.8b08988

**Efficient Ru-based scrap waste automotive converter catalysts for the continuous-flow selective hydrogenation of cinnamaldehyde**

Cova, CM; Zuliani, A; Munoz-Batista, MJ; Luque, R  
2019 Green Chem., 21 (17), pp.4712-4722  
DOI: 10.1039/c9gc01596e

**Electric selective activation of memristive interfaces in TaOx-based devices**

Ferreya C., Sánchez M. J., Aguirre M., Acha C., Bengió S., Lecourt J., Lüders U, Rubi D.  
<https://arxiv.org/pdf/1908.03056.pdf>

**Electrically transmissive alkyne-anchored monolayers on gold**

Herrer, L; Gonzalez-Orive, A; Marques-Gonzalez, S; Martin, S; Nichols, RJ; Serrano, JL; Low, PJ; Cea, P  
2019 Nanoscale, 11 (16), pp 7976-7985  
DOI: 10.1039/c8nr10464f

**Electrochemical Synthesis and Magnetic Properties of MFe<sub>2</sub>O<sub>4</sub> (M = Fe, Mn, Co, Ni) Nanoparticles for Potential Biomedical Applications**

Ovejero, JG; Mayoral, A; Canete, M; Garcia, M; Hernando, A; Herrasti, P  
2019 Journal Of Nanoscience And Nanotechnology 19 (4), pp 2008-2015  
DOI: 10.1166/jnn.2019.15313

**Electrospun asymmetric membranes for wound dressing applications**

Aragon, J; Costa, C; Coelho, I; Mendoza, G; Aguiar-Ricardo, A; Irusta, S  
2019 Materials Science & Engineering C-Materials For Biological Applications,103  
DOI: 10.1016/j.msec.2019.109822

**Engineering the magnetic order in epitaxially strained Sr<sub>1-x</sub>BaxMnO<sub>3</sub> perovskite thin films**

Maurel, L; Marcano, N; Langenberg, E; Guzman, R; Prokscha, T; Magen, C; Pardo, JA; Algarabel, PA  
APL Mater, 7 (4), 41117

DOI: 10.1063/1.5090824

**Engineering Vacancies in Bi<sub>2</sub>S<sub>3</sub> yielding Sub-Bandgap Photoresponse and Highly Sensitive Short-Wave Infrared Photodetectors**

Huo N., Figueroba A., Yang Y., Christodoulou S., Stavrinadis A., Magén C., Konstantatos G.  
2019 Advanced Optical Materials, 7 (11), 1900258  
DOI: 10.1002/adom.201900258

**Enhanced thermo-spin effects in iron-oxide/metal multilayers**

Ramos, Pablo ; Lucas, I.; Algarabel, Pedro A. ; Morellón, Luis; Uchida, K.; Saitoh, E.; Ibarra, M. Ricardo  
2018 Journal of Physics D: Applied Physics 51: 224003  
DOI: 10.1088/1361-6463/aabedb  
<http://hdl.handle.net/10261/181024>

**Excellent adsorption of orange acid II on a water fern- derived micro- and mesoporous carbón**

Emrooz, HBM; Maleki, M; Shokouhimehr, M  
2019 J. Taiwan Inst. Chem. Eng., 102 (99), 109  
DOI: 10.1016/j.jtice.2019.05.009

**Generation of gold nanoclusters encapsulated in an MCM-22 zeolite for the aerobic oxidation of cyclohexane**

Liu, LC; Arenal, R; Meira, DM; Corma, A CHEMICAL COMMUNICATIONS  
2019 Chem. Commun, 55 (11), pp. 1607-1610  
DOI: 10.1039/c8cc07185c

**Gold-decorated magnetic nanoparticles design for hyperthermia applications and as a potential platform for their surface-functionalization**

Felix, LL; Sanz, B; Sebastian, V; Torres, TE; Sousa, MH; Coaquira, JAH; Ibarra, MR; Goya, GF  
2019 Scientific Reports, 9, 4185  
DOI: 10.1038/s41598-019-40769-2

**Green synthesis of cavity-containing manganese oxides with superior catalytic performance in toluene oxidation**

García T., López J.M., Mayoral Á., Zhang Y., Arenal R., Alonso-Domínguez D., Pico M.P., López M.L., Dejoz A., Álvarez-Serrano I., Sanchis R., Solsona B.  
2019 Applied Catalysis A: General, 582, 117107  
DOI: 10.1016/j.apcata.2019.06.005

**Greener processes in the preparation of thin film nanocomposite membranes with diverse metal-organic frameworks for organic solvent nanofiltration**

Paseta, L; Navarro, M; Coronas, J; Tellez, C  
2019 Journal Of Industrial And Engineering Chemistry, 77, pp 344-354  
DOI: 10.1016/j.jiec.2019.04.057

**Growth of a dense gadolinium metal-organic framework on oxide-free silicon for cryogenic local refrigeration**

Lorusso, G; Natividad, E; Evangelisti, M; Roubeau, O  
2019 Materials Horizons, 6 (1), pp 144- 154  
DOI: 10.1039/c8mh01012a

**High volume-per-dose and low resistivity of cobalt nanowires grown by Ga<sup>+</sup> focused ion beam induced deposition**

Sanz-Martín C., Magén C., De Teresa J.M.

2019 Nanomaterials, 9(12)

DOI: 10.3390/nano9121715

**High-radiance LED-driven fluidized bed photoreactor for the complete oxidation of n-hexane in air**

Bueno-Alejo, CJ; Hueso, JL; Mallada, R; Julian, I; Santamaria, J

2019 Chem. Eng. J., 358, pp-1363-1370

DOI: 10.1016/j.cej.2018.09.223

**III-V Integration on Si(100): Vertical Nanospades**

Guniat, L; Marti-Sanchez, S; Garcia, O; Boscardin, M; Vindice, D; Tappy, N; Friedl, M; Kim, W; Zamani, M; Francaviglia, L; Balgarkashi, A; Leran, JB; Arbiol, J; Morral, AFI

2019 ACS Nano MAY, 13 (5), pp 5833-5840,

DOI: 10.1021/acsnano.9b01546

**Impact of the absolute rutile fraction on TiO<sub>2</sub> visible-light absorption and visible-light-promoted photocatalytic activity**

Tobaldi, DM; Lajaunie, L; Rozman, N; Caetano, APF; Seabra, MP; Skapin, AS; Arenal, R; Labrincha, JA

2019 J. Photochem. Photobiol. A-Chem., 382

DOI: 10.1016/j.jphotochem.2019.111940

**In situ real-time annealing of ultrathin vertical Fe nanowires grown by focused electron beam induced deposition**

Pablo-Navarro, J; Winkler, R; Haberfehlner, G; Magen, C; Plank, H; De Teresa, JM

2019 Acta Materialia, 174, pp 379-386

DOI: 10.1016/j.actamat.2019.05.035

**Influence of Al and Y content on the oxidation resistance of CrAlYN protective coatings for high temperature applications: New insights about the Y role**

Rojas, TC; Dominguez-Meister, S; Brizuela, M; Sanchez-Lopez, JC

2019 J. Alloy. Compd., 773, pp.1172-1181

DOI: 10.1016/j.jallcom.2018.09.280

**Influence of Magnetic Nanoparticles on PISA Preparation of Poly(Methacrylic Acid)-b-Poly(Methylmethacrylate) Nano-Objects**

Upadhyaya L., EgboSimba C., Qian X., Wickramasinghe R., Fernández-Pacheco R., Coelho I.M., Portugal C.A.M., Crespo J.G., Quemener D., Semsarilar M.

2019 Macromolecular Rapid Communications (40), 2, 1800333

DOI: 10.1002/marc.201800333

**Insights into formation of anatase TiO<sub>2</sub> nanoparticles from peroxo titanium complex degradation under microwave-assisted hydrothermal treatment**

de Mendonça V.R., Lopes O.F., Avansi W., Jr., Arenal R., Ribeiro C.

2019 Ceramics International, 45 (17), pp 22998-23006

DOI: 10.1016/j.ceramint.2019.07.345

**Interface-induced anomalous Nernst effect in Fe<sub>3</sub>O<sub>4</sub>/Pt-based heterostructures**

Ramos R., Kikkawa T., Anadón A., Lucas I., Niizeki T., Uchida K., Algarabel P.A., Morellón L., Aguirre M.H., Ibarra M.R., Saitoh E.  
2019 Applied Physics Letters, 114 (11) 113902  
DOI: 10.1063/1.5063553

**Interfacial ferromagnetism and atomic structures in high-temperature grown Fe<sub>3</sub>O<sub>4</sub>/Pt/Fe<sub>3</sub>O<sub>4</sub> epitaxial trilayers**

Kikkawa T., Suzuki M, Ramos R., Aguirre M.H., Okabayashi J., Uchida K., Lucas I., Anadón A., Kikuchi D., Algarabel P. A., Morellón L., Ibarra M. R., and Saitoh E.  
2019 Journal of Applied Physics, 126 (14)  
DOI: 10.1063/1.5125761  
<https://aip.scitation.org/doi/suppl/10.1063/1.5125761>

**Investigating the Possible Origin of Raman Bands in Defective sp<sup>2</sup>/sp<sup>3</sup> Carbons below 900 cm<sup>-1</sup>: Phonon Density of States or Double Resonance Mechanism at Play?**

Pardanaud, C; Cartry, G; Lajaunie, L; Arenal, R; Buijnsters, JG  
2019 C 5(4), 79  
DOI: 10.3390/c5040079

**Large memcapacitance and memristance at Nb:SrTiO<sub>3</sub>/ La<sub>0.5</sub>Sr<sub>0.5</sub>Mn<sub>0.5</sub>Co<sub>0.5</sub>O<sub>3-δ</sub> Topotactic Redox Interface**

Acevedo W.R., M. van den Bosch C. A, Aguirre M. H., Acha C., Cavallaro A, Ferreyra C, Sánchez M. J., Patrone L., Aguadero A., Rubi D.  
<https://arxiv.org/ftp/arxiv/papers/1905/1905.05711.pdf>

**Laser-driven direct synthesis of carbon nanodots and application as sensitizers for visible-light photocatalysis**

Masa N., Hueso J.L., Martinez G., Madrid A., Mallada R., Ortega-Liebana M.C., Bueno-Alejo C., Santamaria J.  
2020 Carbon, 156, pp 453-462  
DOI: 10.1016/j.carbon.2019.09.073  
<https://www.sciencedirect.com/science/article/pii/S0008622319309819>

**Long-range vortex transfer in superconducting nanowires**

Cordoba, R; Orus, P; Jelic, ZL; Sese, J; Ibarra, MR; Guillamon, I; Vieira, S; Palacios, JJ; Suderow, H; Milosevic, MV; De Teresa, JM  
2019 Sci Rep, 9, 12386  
DOI: 10.1038/s41598-019-48887-7

**Low-Temperature Catalytic NO Reduction with CO by Subnanometric Pt Clusters**

Fernández E., Liu L., Boronat M., Arenal R., Concepcion P., Corma A.  
2019 ACS Catalysis 9(12), pp11530-11541  
DOI: 10.1021/acscatal.9b03207

**Magnetic and Plasmonic Nanoparticles for Biomedical Devices**

Ibarra M.R., Khlebtsov N.G.  
2019 Journal of Applied Physics 126(17)  
DOI: 10.1063/1.5130560

**Mass Sensing for the Advanced Fabrication of Nanomechanical Resonators**

Gruber, G; Urgell, C; Tavernarakis, A; Stavrinadis, A; Tepsic, S; Magen, C; Sangiao, S; de Teresa, JM; Verlot, P; Bachtold, A

2019 Nano Letters, 19 (10), pp 6987-6992  
DOI: 10.1021/acs.nanolett.9b02351

**Micelle carriers based on dendritic macromolecules containing bis-MPA and glycine for antimalarial drug delivery**

Coma-Cros, EM; Lancelot, A; San Anselmo, M; Borgheti-Cardoso, LN; Valle-Delgado, JJ; Serrano, JL; Fernandez-Busquets, X; Sierra, T  
2019 Biomaterials Science, 7 (4), pp 1661-1674  
DOI: 10.1039/c8bm01600c

**Mixed 4f population of Tm adatoms on insulating Cu<sub>2</sub>N islands**

Coffey D., De La Fuente C., Ciria M., Serrate D., Loth S., Arnaudas J.I.  
2019 Physical Chemistry Chemical Physics 22(1)  
DOI: 10.1039/C9CP04413B

**Nanoscale magnetic and charge anisotropies at manganite interfaces**

Carreira S. J., Aguirre M.H., Briatico J., Steren L.B.  
<https://arxiv.org/abs/1908.01196>

**Nanosheets of MIL-53(Al) applied in membranes with improved CO<sub>2</sub>/N<sub>2</sub> and CO<sub>2</sub>/CH<sub>4</sub> selectivities**

Perea-Cachero, A; Sanchez-Lainez, J; Zornoza, B; Romero-Pascual, E; Tellez, C; Coronas, 2019 Dalton Transactions, 48 (10), pp 3392-3403  
DOI: 10.1039/c8dt03774d

**New Iron Oxide Nanoparticles Catechol-Grafted with Bis(amidoxime)s for Uranium(VI) Depletion of Aqueous Solution**

Mazario, E; Stemper, J; Helal, AS; Mayoral, A; Decorse, P; Losno, R; Lion, C; Ammar, S; Le Gall, T; Hemadi, M  
2019 Journal Of Nanoscience And Nanotechnology, 19 (8), pp 4911-4919  
DOI: 10.1166/jnn.2019.16804

**New routes to organometallic molecular junctions via a simple thermal processing protocol**

Ezquerria R., Eaves S.G., Bock S., Skelton B. W., Pérez-Murano F., Cea P., Martín S. Low P.J.  
2019 J. Mater. Chem. C, 7, pp.6630-6640  
DOI: 10.1039/C9TC01305A

**Non-cytotoxic carbon nanocapsules synthesized via one-pot filling and end-closing of multi-walled carbon nanotubes**

Martincic, M; Vranic, S; Pach, E; Sandoval, S; Ballesteros, B; Kostarelos, K; Tobias, G  
2019 Carbon, 141, pp 782-793  
DOI: 10.1016/j.carbon.2018.10.006

**Non-oxidative methane conversion in microwave-assisted structured reactors**

Julian, I; Ramirez, H; Hueso, JL; Mallada, R; Santamaria, J  
2019 Chem. Eng. J., 377  
DOI: 10.1016/j.cej.2018.08.150

**Novel catalytically active Pd/Ru bimetallic nanoparticles synthesized by Bacillus benzeovorans**



Omajali, JB; Gomez-Bolivar, J; Mikheenko, IP; Sharma, S; Kayode, B; Al-Duri, B; Banerjee, D; Walker, M; Merroun, ML; Macaskie, LE  
2019 Sci Rep, 9, 4715  
DOI:10.1038/s41598-019-40312-3

**On the effect of using collision/reaction cell (CRC) technology in single-particle ICP-mass spectrometry (SP-ICP-MS)**

Bolea-Fernandez, E; Leite, D; Rua-Ibarz, A; Liu, T; Woods, G; Aramendia, M; Resano, M; Vanhaecke, F  
2019 Anal. Chim. Acta, 107t, pp 95-106  
DOI: 10.1016/j.aca.2019.05.077

**One-Dimensional V2O5/TiO2 Heterostructures for Chemiresistive Ozone Sensors**

Avansi, W; Catto, AC; da Silva, LF; Fiorido, T; Bernardini, S; Mastelaro, VR; Aguir, K; Arenal, R  
2019 Acs Applied Nano Materials, 2 (8), pp 4756-4764  
DOI: 10.1021/acsanm.9b00578

**One-pot preparation of iron/alumina catalyst for the efficient growth of vertically-aligned carbon nanotube forests**

Rousseau, A; Venier, N; Fneich, H; Giardella, L; Pinaud, T; Tahir, S; Pelaez-Fernandez, M; Arenal, R; Mehdi, A; Jourdain, V  
2019 Materials Science And Engineering B-Advanced Functional Solid-State Materials, 245, pp 37-46  
DOI: 10.1016/j.mseb.2019.05.005

**One-Pot Seed-Mediated Growth of Co Nanoparticles by the Polyol Process: Unraveling the Heterogeneous Nucleation**

Raj Kumar Ramamoorthy, Arnaud Viola, Bilel Grindi, Jennifer Peron, Christophe Gatel, Martin Hytch, Raul Arenal, Lorette Sicard, Marion Giraud, Jean-Yves Piquemal, Guillaume Viau  
2019 Nano Lett., 19, 12, 9160-9169  
DOI: 10.1021/acs.nanolett.9b04584

**Oxidation and thermal scanning probe lithography for high-resolution nanopatterning and nanodevices**

Ryu Y.K., Knoll A.W.  
2019 NanoScience and Technology 43 (172)  
DOI: 10.1007/978-3-030-15612-1\_5

**Phase masks for electron microscopy fabricated by thermal scanning probe lithography**

Hettler S., Radtke L., Grünwald L., Lisunova Y., Peric O., Brugger J., Bonanni S.  
2019 Micron 127, 102753  
DOI: 10.1016/j.micron.2019.102753

**Polymer engineering by blending PIM-1 and 6FDA-DAM for ZIF-8 containing mixed matrix membranes applied to CO2 separations**

Sanchez-Lainez, J; Pardillos-Ruiz, A; Carta, M; Malpass-Evans, R; McKeown, NB; Tellez, C; Coronas, J  
2019 Separation And Purification Technology, 224, pp 456-462  
DOI: 10.1016/j.seppur.2019.05.035

**Polymer-coated superparamagnetic iron oxide nanoparticles as T-2 contrast agent for MRI and their uptake in liver**



Ali, LMA; Marzola, P; Nicolato, E; Fiorini, S; Guillamon, MD; Pinol, R; Gabilondo, L; Millan, A; Palacio, F  
2019 Future Science Oa, 5 (1)  
DOI: 10.4155/foa-2017-0054

**Polyoxometalates as alternative Mo precursors for methane dehydroaromatization on Mo/ZSM-5 and Mo/MCM-22 catalysts**

Julian, I; Hueso, JL; Lara, N; Sole-Daura, A; Poblet, JM; Mitchell, SG; Mallada, R; Santamaria, J  
2019 Catal. Sci. Technol., 9, 5927-5942  
DOI: 10.1039/C9CY01490J

**Polypeptidic Micelles Stabilized with Sodium Alginate Enhance the Activity of Encapsulated Bedaquiline**

Soria-Carrera, H; Lucia, A; De Matteis, L; Ainsa, JA; de la Fuente, JM; Martin-Rapun, R  
2019 Macromolecular Bioscience, 19 (4), 1800397  
DOI: 10.1002/mabi.201800397

**Probing the morphology of epitaxial Fe/MgO discontinuous multilayers by magnetometric technique**

Vovk, A; Garcia-Garcia, A; Pogorelov, YG; Pardo, JA; Strichovanec, P; Magen, C; Algaraber, PA; Araujo, JP; Kakazei, GN  
2019 J. Magn. Magn. Mater., 474, pp 369-373  
DOI: 10.1016/j.jmmm.2018.11.015

**Pulsed current-voltage electrodeposition of stoichiometric Bi<sub>2</sub>Te<sub>3</sub> nanowires and their crystallographic characterization by transmission electron backscatter diffraction**

Manzano C.V., Polyakov M.K., Maiz J, Aguirre M.H, Maeder X, Martín-González M.  
2019 Science and Technology of Advanced Materials, 20 (1)  
DOI: 10.1080/14686996.2019.1671778

**Real space manifestations of coherent screening in atomic scale Kondo lattices**

Moro-Lagares M., Korytár R., Piantek M., Robles R., Lorente N., Pascual J.I., Ibarra M.R., Serrate D.  
2019 Nature Communications 10 (1), 2211  
DOI: 10.1038/s41467-019-10103-5

**Room-Temperature AFM Electric-Field-Induced Topotactic Transformation between Perovskite and Brownmillerite SrFeO<sub>x</sub> with Sub-Micrometer Spatial Resolution**

Ferreiro-Vila, E; Blanco-Canosa, S; del Pozo, IL; Vasili, HB; Magen, C; Ibarra, A; Rubio-Zuazo, J; Castro, GR; Morellon, L; Rivadulla, F  
2019 Adv. Funct. Mater., 1901984  
DOI: 10.1002/adfm.201901984

**Room temperature synthesis of platinum concave cubes exposing {110} facets and their epitaxial growth on Pt(111) thin films",**

Laurent Peres, Deliang Yi, Susana Bustos-Rodriguez, Cécile Marcelot-Garcia, Alexandre Pierrot, Pier-Francesco Fazzini, Bénédicte Warot-Fonrose, Ileana Florea, Raul Arenal, Lise-Marie Lacroix, Thomas Blon, Katerina Soulantica,  
2019 Nanoscale 10, 22730-22736

**Scanning different Ni-noble metal (Pt, Pd, Ru) bimetallic nanoparticles supported on carbon nanofibers for one-pot cellobiose conversion**

E.FrechaD.TorresA.PueyoI.SuelvesJ.L.Pinilla  
2019 Appl. Catal. A-Gen., 585, 117182  
DOI: 10.1016/j.apcata.2019.117182

**Self-mineralization and assembly of a bis-silylated pseudodipeptide to a structured bioorganic-inorganic material**

Jebors, S., Valot, L., Echali er, C., Legrand, B., Mikhaleff, R., Van Der Lee, A., Arenal, R., Dumy, P., Amblard, M., Martinez, J., Mehdi, A., Subra, G.  
2019 Materials Horizons, 6, 2040-2046  
DOI: 10.1039/C9MH00580C

**Segregation scheme of indium in AlGaInAs nanowire shells**

Francaviglia, L; Tutuncuoglu, G; Marti-Sanchez, S; Di Russo, E; Steinval, SE; Ruiz, JS; Potts, H; Friedl, M; Rigutti, L; Arbiol, J; Morral, AFI  
2019 Phys. Rev. Mater, 3 (2), 23001  
DOI: 10.1103/PhysRevMaterials.3.023001

**Selective aqueous-phase hydrogenation of D-fructose into D-mannitol using a highly efficient and reusable Cu-Ni/SiO<sub>2</sub> catalyst**

Zelin, J; Regenhardt, SA; Meyer, CI; Duarte, HA; Sebastian, V; Marchi, AJ  
2019 Chemical Engineering Science, 206, pp 315-326  
DOI: 10.1016/j.ces.2019.05.042

**Selective control of molecule charge state on graphene using tip-induced electric field and nitrogen doping**

Pham, VD; Ghosh, S; Joucken, F; Pelaez-Fernandez, M; Repain, V; Chacon, C; Bellec, A; Girard, Y; Sporken, R; Rousset, S; Dappe, YJ; Narasimhan, S; Lagoute, J  
2019 Npj 2d Materials And Applications, 3  
DOI: 10.1038/s41699-019-0087-5

**Selectivity Map for Molecular Beam Epitaxy of Advanced III-V Quantum Nanowire Networks**

Aseev, P; Fursina, A; Boekhout, F; Krizek, F; Sestoft, JE; Borsoi, F; Heedt, S; Wang, GZ; Binci, L; Marti-Sanchez, S; Swoboda, T; Koops, R; Uccelli, E; Arbiol, J; Krogstrup, P; Kouwenhoven, LP; Caroff, P  
2019 Nano Lett., 19 (1), pp 218-227  
DOI: 10.1021/acs.nanolett.8b03733

**Self-Assembly of Clicked Star-Shaped Triazines into Functional Nanostructures**

Castillo-Valles, M; Beltran, E; Cerda, J; Arago, J; Romero, P; Serrano, JL; Orti, E; Gimenez, R; Sierra, T  
2019 Chemnanomat, 5 (1), pp 130-137  
DOI: 10.1002/cnma.201800484

**Silver-Copper Oxide Heteronanostructures for the Plasmonic-Enhanced Photocatalytic Oxidation of N-Hexane in the Visible-NIR Range**

Su arez H, Ramirez A., Bueno-Alejo C.J., Hueso J.L.  
2019 Materials, 12(23), 3858  
DOI: 10.3390/ma12233858

**Single molecule vs. large area design of molecular electronic devices incorporating an efficient 2-aminepyridine double anchoring group**

Herrer, L; Ismael, A; Martin, S; Milan, DC; Serrano, JL; Nichols, RJ; Lambert, C; Cea, P

2019 Nanoscale, 11 (34), 15871-15880  
DOI: 10.1039/c9nr05662a

**Solvent-Free Encapsulation at High Pressure with Carboxylate-Based MOFs**

Monteagudo-Olivan, R; Paseta, L; Potier, G; Lopez-Ram-de-Viu, P; Coronas, J  
2019 Eur. J. Inorg. Chem., 1, pp 29-36  
DOI: 10.1002/ejic.201800985

**Sonochemical edge functionalisation of molybdenum disulfide**

Graf, AA; Large, MJ; Ogilvie, SP; Rong, YY; Lynch, PJ; Fratta, G; Ray, S; Shmeliov, A; Nicolosi, V;  
Arenal, R; King, AAK; Dalton, AB  
2019 Nanoscale, 11, (33), pp 15550-15560  
DOI: 10.1039/c9nr04974f

**Structural and magnetic properties of silica-coated magnetite nanoaggregates**

Morales, F; Marquez, G; Sagredo, V; Torres, TE; Denardin, JC  
2019 Physica B-Condensed Matter, 572, pp 214-219  
DOI: 10.1016/j.physb.2019.08.007

**Structure and composition of the incisor enamel of extant and fossil mammals with tooth pigmentation**

Moya-Costa, R; Bauluz, B; Cuenca-Bescos, G  
2019 Lethaia, 52 (3), pp 370-388  
DOI: 10.1111/let.12318

**Sulfur-doped graphene/transition metal dichalcogenide heterostructured hybrids with electrocatalytic activity toward the hydrogen evolution reaction**

Kagkoura, A; Pelaez-Fernandez, M; Arenal, R; Tagmatarchis, N  
2019 Nanoscale Adv., 1 (4), pp1489-1496  
DOI: 10.1039/c8na00130h

**Supercritical solvothermal synthesis under reducing conditions to increase stability and durability of Mo/ZSM-5 catalysts in methane dehydroaromatization**

Julian I., Roedernd M.B, Hueso J.L., Irusta S., Badend A.K., Mallada R., Davis Z., Santamaria J.  
2019 Applied Catalysis B: Environmental, 118360  
<https://www.sciencedirect.com/science/article/pii/S0926337319311063>

**Synthesis and characterization of polymer/silica/QDs fluorescent nanocomposites with potential application as printing toner**

Ruiz-Robles M.A., Solis-Pomar F., Gutiérrez-Lazos C.D., Fundora-Cruz A., Mayoral A., Pérez-Tijerina E.  
2019 Materials Research Express 6(2)  
DOI: [10.1088/2053-1591/aaf0f2](https://doi.org/10.1088/2053-1591/aaf0f2)

**Tailoring the crystal growth of quartz on silicon for patterning epitaxial piezoelectric films**

Zhang, QZ; Sanchez-Fuentes, D; Gomez, A; Desgarceaux, R; Charlot, B; Gazquez, J; Carretero-Genevri, A; Gich, M  
2019 Nanoscale Adv, 1, (9), pp 3741-3752  
DOI: 10.1039/c9na00388f

**Temperature-responsive nanomagnetic logic gates for cellular hyperthermia**

Silva, RO; Pereira, RA; Silva, FM; Gaspar, VM; Ibarra, A; Millan, A; Sousa, FL; Mano, JF; Silva, NJO

2019 Materials Horizons, 6 (3), pp 524-530

DOI: 10.1039/c8mh01510d

**The fabrication of ultrathin films and their gas separation performance from polymers of intrinsic microporosity with two-dimensional (2D) and three-dimensional (3D) chain conformations**

Benito, J; Vidal, J; Sanchez-Lainez, J; Zornoza, B; Tellez, C; Martin, S; Msayib, KJ; Comesana-Gandara, B; McKeown, NB; Coronas, J; Gascon, I

2019 Journal Of Colloid And Interface Science 536, pp 474-482

DOI: 10.1016/j.jcis.2018.10.075

**The growth and improved magnetoelectric response of strain-modified Aurivillius SrBi<sub>4</sub>.25La<sub>0.75</sub>Ti<sub>4</sub>FeO<sub>18</sub> thin films**

Ramana, EV; Prasad, NV; Figueiras, F; Laiaunie, L; Arenal, R; Otero-Irurueta, G; Valente, MA

2019 Dalton Trans., 48 (35), pp-13224-13241

DOI: 10.1039/c9dt01667h

**The relevance of Brownian relaxation as power absorption mechanism in Magnetic Hyperthermia**

Torres T.E., Lima E., Jr., Calatayud M.P., Sanz B., Ibarra A., Fernández-Pacheco R., Mayoral A., Marquina C., Ibarra M.R., Goya G.F.

2019 Scientific Reports, 9 (1) 3992

DOI: 10.1038/s41598-019-40341-y

**The Role of Polarity in Nonplanar Semiconductor Nanostructures**

de la Mata, M; Zamani, RR; Marti-Sanchez, S; Eickhoff, M; Xiong, QH; Morral, AFI; Caroff, P; Arbiol, J

2019 Nano Lett., 19 (6), pp 3396-3408

DOI:10.1021/acs.nanolett.9b00459

**Thin supported MOF based mixed matrix membranes of Pebax (R) 1657 for biogas upgrade**

Sanchez-Lainez, J; Gracia-Guillen, I; Zornoza, B; Tellez, C; Coronas, J

2019 New J. Chem., 43, (1), pp 312-319

DOI: 10.1039/c8nj04769c

**Three-Dimensional Superconducting Nanohelices Grown by He<sup>+</sup>-Focused-Ion-Beam Direct Writing**

Córdoba R., Mailly D., Rezaev R.O., Smirnova E.I., Schmidt O.G., Fomin V.M., Zeitler U., Guillamón I., Suderow H., De Teresa J.M.

2019 Nano Letters 19 (12), pp 8597-8604

DOI: 10.1021/acs.nanolett.9b03153

**Tin-Carboxylate MOFs for Sugar Transformation into Methyl Lactate**

Murillo, B; Zornoza, B; de la Iglesia, O; Wang, S; Serre, C; Tellez, C; Coronas, J

2019 Eur. J. Inorg. Chem., 21, pp 2624-2629

DOI: 10.1002/ejic.201900310

**Triangular and Prism-Shaped Gold-Zinc Oxide Plasmonic Nanostructures: In situ Reduction, Assembly, and Full-Range Photocatalytic Performance**

Bottega-Pergher, B; Graus, J; Bueno-Alejo, CJ; Hueso, JL

2019 European Journal Of Inorganic Chemistry, 27, pp 3228-3234  
DOI: 10.1002/ejic.201900213

**Tuning the size, composition and structure of Au and Co<sub>50</sub>Au<sub>50</sub> nanoparticles by high-power impulse magnetron sputtering in gas-phase synthesis**

Mayoral, A; Martinez, L; Garcia-Martin, JM; Fernandez-Martinez, I; Garcia-Hernandez, M; Galiana, B; Ballesteros, C; Huttel, Y  
2019 Nanotechnology, 30 (6), 65606  
DOI: 10.1088/1361-6528/aaf1fa

**Two-dimensional oligoglycine tectomer adhesives for graphene oxide fiber functionalization**

Garriga, R; Jurewicz, I; Seyedin, S; Tripathi, M; Pearson, JR; Cebolla, VL; Dalton, AB; Razal, JM; Munoz, E  
2019 Carbon, 147, pp 460-475  
DOI: 10.1016/j.carbon.2019.02.080

**Ultra-fast direct growth of metallic micro- and nano-structures by focused ion beam irradiation**

Cordoba, R; Orus, P; Strohauser, S; Torres, TE; De Teresa, JM  
2019 Sci Rep, 9, 14076  
DOI: 10.1038/s41598-019-50411-w

**Ultrathin Films of Porous Metal-Organic Polyhedra for Gas Separation**

Andrés M.A., Carné-Sánchez A., Sánchez-Laínez J., Roubeau O., Coronas J., Maspoch D, Gascón J.  
2019 Chemistry A European Journal, 26 (1), pp143-147  
DOI: 10.1002/chem.201904141

**Ultrathin lead bromide perovskite platelets spotted with europium(ii) bromide dots**

Rosa-Pardo I., Pocióví-Martínez S., Arenal R., Galian R.E., Pérez-Prieto J.  
2019 Nanoscale, 11 (39), pp 18065-18070  
DOI: 10.1039/c9nr06631d

**Understanding blood oxygenation in a microfluidic meander double side membrane contactor**

Malankowska, M; Julian, I; Pellejero, I; Rho, HS; Schlautmann, S; Tiggelaar, RM; Pina, MP; Gardeniers, JGE; Mallada, R  
2019 Sensors And Actuators B-Chemical, 288, pp 414-424  
DOI: 10.1016/j.snb.2019.02.110

**Upconverting Carbon Nanodots from Ethylenediaminetetraacetic Acid (EDTA) as Near-Infrared Activated Phototheranostic Agents**

Ortega-Liebana, MC; Encabo-Berzosa, MM; Casanova, A; Pereboom, MD; Alda, JO; Hueso, JL; Santamaria, J  
2019 Chem.-Eur. J., 25 (21), pp 5539-5546  
DOI: 10.1002/chem.201806307

**Apparent auxetic to non-auxetic crossover driven by Co<sup>2+</sup> redistribution in CoFe<sub>2</sub>O<sub>4</sub> thin films**

Ferreiro-Vila, E; Iglesias, L; del Pozo, IL; Varela-Dominguez, N; Bui, CT; Rivas-Murias, B; Vila-Fungueirino, JM; Jimenez-Cavero, P; Magen, C; Morelion, L; Pardo, V; Rivadulla, F

2019 *Apl Materials*, 7, (3), 31109,  
DOI: 10.1063/1.5087559

**A one-pot route for the synthesis of Au@Pd/PMo<sub>12</sub>/rGO as a dual functional electrocatalyst for ethanol electro-oxidation and hydrogen evolution reaction**

Ahmadpour, S. Khadempir, N. Ashraf, S. G. Mitchell, M. H. Ahangari,  
*2019 RSC Adv.*, 9, 37537-37545  
doi.org/10.1039/C9RA06915A

**Polyoxometalates as alternative Mo precursors for methane dehydroaromatization on Mo/ZSM-5 and Mo/MCM-22 catalysts**

Julian,\* J. L. Hueso, N. Lara, A. Solé-Daurá, J. M. Poblet, S. G. Mitchell, R. Mallada, J. Santamaría  
*2019 Catal. Sci. Technol.*, 9, 5927-5942  
doi.org/10.1039/C9CY01490J

**Preventing fungal growth on heritage paper with antifungal and cellulase inhibiting magnesium oxide nanoparticles**

Franco Castillo, E. García Guillén, J. M. de la Fuente, F. de Silva\*, S. G. Mitchell  
*2019 J. Mater. Chem. B* 2019, 7, 6412-6419 (2019 Emerging Investigators Special issue)

**Protection of 18<sup>th</sup> century paper using antimicrobial nano-magnesium oxide**

Franco Castillo, L. De Matteis, C. Marquina, E. García Guillén, J. M. de la Fuente, S. G. Mitchell  
*2019 International Biodegradation & Biodeterioration*, 2019, 141, 79-86.

**Polyamide/MOF bilayered thin film composite hollow fiber membranes with tuned MOF thickness for water nanofiltration**

Echaide-Gorritz, Carlos; Zapata, Jose A.; Etxeberria-Benavides, Miren; Tellez, Carlos; Coronas, Joaquin  
*2019 SEPARATION AND PURIFICATION TECHNOLOGY* 116265  
10.1016/j.seppur.2019.116265

**Coherent Epitaxial Semiconductor-Ferromagnetic Insulator InAs/EuS Interfaces: Band Alignment and Magnetic Structure**

Liu, Yu; Luchini, Alessandra; Marti-Sanchez, Sara; Koch, Christian; Schuwalow, Sergej; Khan, Sabbir A.; Stankevic, Tomas; Francoual, Sonia; Mardegan, Jose R. L.; Krieger, Jonas A.; Strocov, Vladimir N.; Stahn, Jochen; Vaz, Carlos A. F.; Ramakrishnan, Mahesh; Staub, Urs; Lefmann, Kim; Aeppli, Gabriel; Arbiol, Jordi; Krogstrup, Peter  
*2019 ACS APPLIED MATERIALS & INTERFACES*, 7, 8780-8787  
10.1021/acsami.9b15034

**Ping-Pong Energy Transfer in Covalently Linked Porphyrin-MoS<sub>2</sub> Architectures**

Canton-Vitoria, Ruben; Scharl, Tobias; Stergiou, Anastasios; Cadranel, Alejandro; Arenal, Raul; Guldi, Dirk M.; Tagmatarchis, Nikos  
*2019 ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*, 10 3976-3981  
10.1002/anie.201914494

**Micro/Nanostructure Engineering of Epitaxial Piezoelectric alpha-Quartz Thin Films on Silicon**

Zhang, Qianzhe; Sanchez-Fuentes, David; Desgarceaux, Rudy; Escofet-Majoral, Pau; Oro-soler, Judith; Gazquez, Jaume; Larrieu, Guilhem; Chariot, Benoit; Gomez, Andres; Gich, Marti; Carretero-Genevri, Adrian  
*2019 ACS APPLIED MATERIALS & INTERFACES*, 4, 4732-4740

10.1021/acsami.9b18555

**Continuous flow synthesis of menthol via tandem cyclisation-hydrogenation of citronellal catalysed by scrap catalytic converters**

Zuliani, Alessio; Cova, Camilla Maria; Manno, Roberta; Sebastian, Victor; Romero, Antonio A.; Luque, Rafael

GREEN CHEMISTRY, 2, 379-387

10.1039/c9gc03299a

**GaAs nanoscale membranes: prospects for seamless integration of III-Vs on silicon**

Raya, Andres M.; Friedl, Martin; Marti-Sanchez, Sara; Dubrovskii, Vladimir G.; Francaviglia, Luca; Alen, Benito; Morgan, Nicholas; Tutuncuoglu, Gozde; Ramasse, Quentin M.; Fuster, David; Llorens, Jose M.; Arbiol, Jordi; Fontcuberta i Morral, Anna

NANOSCALE, 2, 815-824

10.1039/c9nr08453c

**Crystallographic Transformation: Room-Temperature AFM Electric-Field-Induced Topotactic Transformation between Perovskite and Brownmillerite SrFeOx with Sub-Micrometer Spatial Resolution**

Elías Ferreiro-Vila, Santiago Blanco-Canosa, Irene Lucas del Pozo, Hari Babu Vasili, César Magén, Alfonso Ibarra, Juan Rubio-Zuazo, Germán R Castro, Luis Morellón, Francisco Rivadulla  
2019 JournalAdvanced Functional Materials, 29, 48; 1970330

**Superconducting Nanostructures Grown by Ga<sup>+</sup>-and He<sup>+</sup>-Focused Ion Beam Induced Deposition (FIBID)**

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