

Publicaciones 2022

- 1** A. Alimi, I. Ben Assaker, J. Mozaryn, D. Ávila-Brandé, E. Castillo-Martínez and R. Chtourou.
Electrochemical synthesis of MnO₂/NiO/ZnO trijunction coated stainless steel substrate as a supercapacitor electrode and cyclic voltammetry behavior modeling using Artificial Neural Network
Int J Energy Res. 2022,46, 17163-17179. [doi:10.1002/er.8380](https://doi.org/10.1002/er.8380)
- 2** H.M. Ansari, D. Avila-Brandé, S. Kelly, P. K. Addo, and B. Molero-Sánchez.
Structural, Interfacial, and Electrochemical Stability of La_{0.3}Ca_{0.7}Fe_{0.7}Cr_{0.3}O_{3-δ} Electrode Material for Application as the Oxygen Electrode in Reversible Solid Oxide Cells
Crystals 2022, 12, 847. <https://doi.org/10.3390/cryst12060847>
- 3** S. Rojas, T. Hidalgo, Z. Luo, D. Avila, A. Laromaine, P. Horcajada.
Pushing the limits on the intestinal crossing of Metal-Organic Frameworks: an ex vivo and in vivo detailed study; *ACS Nano* 2022, 16, 5830-5838.
<https://doi.org/10.1021/acsnano.1c10942>
- 4** M. M. González-Barrios, M. Tabuyo-Martínez, V. Cascos, Ó. J. Durá, J. A. Alonso, D. Ávila-Brandé, J. Prado-Gonjal.
Microwave-assisted synthesis of thermoelectric oxides and chalcogenides.
Ceramics International 2022, 48, 12331-12341.
<https://doi.org/10.1016/j.ceramint.2022.01.096>
- 5** E. Palacios, M. Castro, J. Romero de Paz, J.M. Gallardo-Amores, R. Sáez-Puche.
Heat capacity and magnetocaloric effect in the zircon and scheelite phases of RCrO₄, R = Tb, Er, Ho.
Journal of Solid State Chemistry 2022, 314, 123356.
<https://doi.org/10.1016/j.jssc.2022.123356>
- 6** E. Palacios, R. Sáez-Puche, J. Romero, Y. Doi, Y. Hinatsu, M. Evangelisti.
Large magnetocaloric effect in EuGd₂O₄ and EuDy₂O₄.
Journal of Alloys and Compounds 2022, 890, 161847.
<https://doi.org/10.1016/j.jallcom.2021.161847>
- 7** M. Elmanzalawy, E. Sanchez-Ahijón, O. Kisacik, J. Carretero-González, E. Castillo-Martínez
High conductivity in a fluorine-free K-ion polymer electrolyte.
ACS Applied Energy Materials 2022 5 (7), 9009-9019.
<https://doi.org/10.1021/acsaem.2c01485>

- 8** M. J. Piernas-Muñoz, E. Castillo-Martínez, E. Goikolea, P. Blanco, E. Legarra, J. S. Garitaonandia, S. Kim, T. Fister, C. Johnson, T. Rojo
Sequential Fe Reduction, Involving Two Different Fe⁺ Intermediates, in the Conversion Reaction of Prussian Blue in Lithium-Ion Batteries.
Chemistry of Materials 2022, 34, 10, 4660–4671.
doi: /10.1021/acs.chemmater.2c00544
- 9** R. Calle-Gil, E. Castillo-Martínez, J. Carretero-González
Cellulose nanocrystals in sustainable energy systems
Advanced Sustainable Systems 2022, 6 (4), 2100395.
<https://doi.org/10.1002/adsu.202100395>
- 10** E. Solana-Madruga, Á. M. Arévalo-López.
High-pressure A-site manganites: structures and magnetic properties.
Journal of Solid State Chemistry 2022, 314, 123470.
<https://doi.org/10.1016/j.jssc.2022.123470>
- 11** E. Solana-Madruga, P. S. Kearins, C. Ritter, Á. M. Arévalo-López, J. P. Attfield.
1 : 1 Ca²⁺:Cu²⁺ A-site order in a ferrimagnetic double double perovskite.
Angew. Chem. Int. Ed. 2022, 61, e202209497.
<https://doi.org/10.1002/anie.202209497>
- 12** C. Aguilar-Maldonado, E. Solana-Madruga, C. Ritter, O. Mentré, Á. M. Arévalo-López.
Abrupt negative thermal expansion and magnetic structure of V3O5.
Chem. Mater. 2022, 34, 11, 5294–5300.
<https://doi.org/10.1021/acs.chemmater.2c01030>
- 13** K. Ji, E. Solana-Madruga, M. Amano Patino, Y. Shimakawa, J. P. Attfield.
A new cation-ordered structure type with multiple thermal redistributions in Co₂InSbO₆.
Angew. Chem. Int. Ed. 2022, 61, e202203062.
<https://doi.org/10.1002/anie.202203062>
- 14** E. Solana-Madruga, C. Ritter, O. Mentré, J. P. Attfield, Á. M. Arévalo-López.
Giant coercivity and spin clusters in high pressure polymorphs of Mn₂LiReO₆.
J. Mater. Chem. C 2022, 10, 4336-4341.
<https://doi.org/10.1039/d2tc00451h>
- 15** K. H. Hong, E. Solana-Madruga, M. Coduri, C. Ritter, J. P. Attfield
Synthesis, structure and magnetic properties of NiFe₃O₅.
ECS Journal of Solid State Science and Technology 2022, 11, 013009.
<https://doi.org/10.1149/2162-8777/ac4a81>

- 16** A.Kuhn, A., J.C. Pérez-Flores, J. Prado-Gonjal, E. Morán, M. Hoelzel, V. Diez-Gomez, I. Sobrados, J. Sanz, F. García-Alvarado. Lithium Intercalation Mechanism and Critical Role of Structural Water in Layered H₂V₃O₈ High-Capacity Cathode Material for Lithium-Ion Batteries. *Chem. Mater.*, 2022. 34(2), 694-705.
<https://doi.org/10.1021/acs.chemmater.1c03283>
- 17** E. Sánchez-Ahijón, R. Schmidt, R., X. Martinez de Irujo-Labelde, H.M. Ansari, M.T. Fernández-Díaz, E. Morán, B. Molero-Sánchez, J. Prado-Gonjal, J. Structural and dielectric properties of ultra-fast microwave-processed La_{0.3}Ca_{0.7}Fe_{0.7}Cr_{0.3}O_{3-δ} ceramics. *J. Solid State Chem.*, 2022. 314, 123426
<https://doi.org/10.1016/j.jssc.2022.123526>
- 18** J. Prado-Gonjal, M.M. González-Barrios, M.T Fernández-Díaz, P.W. Addo, B. Molero-Sánchez, Crystal structure and electrical properties of LaNi_{0.6}Fe_{0.2}Cu_{0.2}O_{3-δ} and LaNi_{0.6}Fe_{0.3}Cr_{0.1}O_{3-δ} perovskites: contact materials for Reversible Solid Oxide Fuel Cell electrodes. *J. Solid State Chem.*, 2022. 316, 123526.
<https://doi.org/10.1016/j.jssc.2022.123526>
- 19** K. Singh, P.K. Addo, V. Thangadurai, J. Prado-Gonjal, B. Molero-Sánchez. LaNi_{0.6}Co_{0.4-x}Fe_xO_{3-δ} as Air-Side Contact Material for La_{0.3}Ca_{0.7}Fe_{0.7}Cr_{0.3}O_{3-δ} Reversible Solid Oxide Fuel Cell Electrodes. *Crystals*, 2022. 12(1), 73.
<https://doi.org/10.3390/cryst12010073>
- 20** C. García-Ramos, V. Cascos, J. Prado-Gonjal, R. Schmidt, M.T. Fernández-Díaz, K. Krezhov, J.A. Alonso BaFe_{0.875}Re_{0.125}O_{3-δ} and BaFe_{0.75}Ta_{0.25}O_{3-δ} as potential cathodes for solid-oxide fuel-cells: a structural study from neutron diffraction data. *Z. Krystallog.-Crystalline Materials*. 2022. 237, 303-309.
<https://doi.org/10.1515/zkri-2022-0027>
- 21** V. Cascos, M.T. Fernández-Díaz, J.A. Alonso. Al-Doped SrMoO₃ Perovskites as Promising Anode Materials in Solid Oxide Fuel Cells. *Materials*. 2022, 15, 3819.
<https://doi.org/10.3390/ma15113819>
- 22** E. Scott, E. Mitoudi Vagourdi, M. Johnsson, V. Cascos, F. John, D. Pickup, A. Chadwick, H. Djani, E. Bousquet, W. Zhang, P. Shiv Halasyamani; E. McCabe. Bi₂CoO₂F₄ – a polar, ferrimagnetic Aurivillius oxide-fluoride. *Chemistry of Materials*. 2022. 34, 9775–9785.
<https://doi.org/10.1021/acs.chemmater.2c02745>

- 23** A. Diego-Rucabado, A. Segura, F. Aguado, M. Pollnau, R. Valiente, R. Martín-Rodríguez, I. Cano.
Pr³⁺-doped Y₂O₃ nanocrystals embedded in Y₂O₃ thin films as a sandwich-like structure prepared by pulsed laser deposition.
Journal of Luminescence 2022, 252, 119378.
<https://doi.org/10.1016/j.jlumin.2022.119378>
- 24** D. Dorosz, M. Kochanowicz, M. Lesniak, R. Müller, M. Lorenz, J. Kobelke, K. Wondraczek, R. Valiente, A. Diego-Rucabado, I. Cano, F. Aguado, J. Gluch, I. Kinski, M. Jäger.
Glass powder doping of nanocrystal-doped fibres - Challenges and results.
Proceedings of SPIE - The International Society for Optical Engineering. Volume 121422022. Fiber Lasers and Glass Photonics: Materials through Applications III.
<https://doi.org/10.1117/12.2624448>
- 25** M.A. Laguna-Marco, E. Arias-Egido, V. Cuartero, J. Herrero-Albillos, P. Kayser, J. A. Alonso, G. Fabbris, D. Haskel, and T. Irifune.
Probing the Tunability of Magnetism with External Pressure in Metastable Sr₂NiIrO₆ Double Perovskite.
Physical Review B, 2022, 105 (6).
<https://doi:10.1103/PhysRevB.105.064421>
- 26** M. Retuerto, L. Pascual, J. Torrero, M. A. Salam, A. Tolosana-Moranchel, D. Gianolio, P. Ferrer, P. Kayser, V. Wilke, S. Stiber, V. Celorrio, M. Mokhtar, D. García Sanchez, A. S. Gago, K. Andreas Friedrich, M. A. Peña, J. A. Alonso, S. Rojas.
Highly active and stable OER electrocatalysts derived from Sr₂MIrO₆ for proton exchange membrane water electrolyzers.
Nature Communications 2022, 13, 7935
<https://doi.org/10.1038/s41467-022-35631-5>
- 27** H. Aghamohammadi, R. E.-Farsani, E. Castillo-Martínez.
Recent trends in the devolvement of MXenes and MXene-based composites as anode materials for Li-ion batteries.
J. Energy Storage 2022, 47, 103572
<https://doi.org/10.1016/j.est.2021.103572>
- 28** L. Fanton, F. Loria, M. Amores, M. R. Pazos, C. Adán, R. García Muñoz, J. Marugán, R. Caram.
Proliferation of osteoblast precursor cells on the surface of TiO₂ nanotubes and nanowires anodically grown on β -type biomedical titanium alloy.
Scientific Reports 12, (2022) 7895-7908.
[DOI: 10.1038/s41598-022-11981-4](https://doi.org/10.1038/s41598-022-11981-4)