

Juan Muñoz-Saldaña, Dr. Ing.
Multifunctional Ceramics

Centro de Investigacion y Estudios Avanzados del I.P.N. – Unidad Queretaro
 Libramiento Norponiente No. 2000, Fracc. Real de Juriquilla, Queretaro, Qro. 76230 Mexico
 email: jmunoz@cinvestav.mx ph: +52 (442) 211 9924

A. EDUCATION

Hamburg University of Technology- Institute of Advanced Ceramics, Germany	Materials Science and Engineering	Full time researcher 2001-2003
Hamburg University of Technology- Institute of Advanced Ceramics, Germany	Materials Science and Engineering	Dr. Ing. 2002
Instituto Politécnico Nacional-ESIQIE- Mexico	Metallurgical Engineering	M.Sc. 1996
Instituto Politécnico Nacional-ESIQIE- Mexico	Metallurgical Engineering	B.Sc. 1994

B. APPOINTMENTS

Professor of Materials Science	Cinvestav – Unidad Queretaro	06/2003- to date
Head of the National Laboratory of Thermal Spray, CENAPROT	CENAPROT	06-2014- to date
Guest Professor Georg Foster Fellow -A.v.Humboldt	German Aerospace Center, DLR, Cologne, Germany	04/2018-06/2018
Georg Foster Fellow - A.v.Humboldt	German Aerospace Center, DLR, Cologne, Germany	07/2016-08/2017
Guest Professor Georg Foster Fellow -A.v.Humboldt	German Aerospace Center, DLR, Cologne, Germany	06/2015-08/2015
Guest Professor	Universitat Politècnica de Catalunya	04/2007-06/2007
Research Associate	Hamburg University of Technology-Institute of Advanced Ceramics, Germany	06/2001-06/2003

C. RESEARCH LINES

Multifunctional ceramics: synthesis, processing, bulk and coatings, thermal spray. Solid state physics. Continuous mechanics, contact mechanics, nanoindentation. Atomic force microscopy.

D. SCIENTIFIC PRODUCTION

Peer Reviewed Journal Articles: 129; Books; 1, Book Chapters: 6; Citations: +2250 (Scopus), +3100 (Scholar), H-index: 25

Students advised: MSc: 41 (2 in process); PhD: 20 (6 in process), Postdocs: 6

National Researcher Level III (SNI-Conacyt).

E. PUBLICATIONS (Only JCR)

- 1 Eng L. M., Günterodt H. J., Schneider G.A., Köpke U. and **Muñoz Saldaña J.** Nanoscale Reconstruction of Surface Crystallography from 3-Dimensional Polarization Distribution in Ferroelectric BaTiO₃ Ceramics. *Applied Physics Letters*. (1999) 74(2): 233-235.
- 2 **Muñoz Saldaña J.**, Schneider G. A. and Eng L. M. Stress induced Movement of Ferroelastic Domain Walls in BaTiO₃ Single Crystals evaluated by Scanning Force Microscopy. *Surface Science Letters*. (2001) 480: L402-L410.
- 3 **Muñoz Saldaña J.**, Mullier B. and Schneider G. A. Preparation of BaTiO₃ Single Crystals by Using the Modified SiO₂ -Exaggerated Grain Growth Method. *Journal of the European Ceramic Society*. (2002) 22(5): 681-688.
- 4 Rabe U., Kopycinska M., Hirsekorn S., **Muñoz Saldaña J.**, Schneider G. A. and Arnold W. High-resolution Characterization of Piezoelectric Ceramics by Ultrasonic Scanning Force Microscopy Techniques. *Journal of Physics D:Applied Physics*. (2002) 35: 2621–2635.
- 5 **Muñoz Saldaña J.** and Schneider G. A. Ferroelectric Domains in coarse grained PZT Ceramics characterized by Scanning Force Microscopy. *Journal of Materials Research*. (2003) 18(8): 1777-1786.
- 6 **Muñoz Saldaña J.**, Balmori-Ramírez H., Jaramillo-Vigueras D. and Iga T. Mechanical Properties and Low Temperature Aging of Tetragonal Zirconia Polycrystals Processed by Hot Isostatic Pressing. *Journal of Materials Research*. (2003) 18(10): 2415-2426.
- 7 **Muñoz Saldaña J.** and Calderón Moreno J. M. 90° domain configuration and lateral domain wall motion in BaTiO₃ evaluated by secondary electron microscopy. *Key Engineering Materials*. (2004) 264 -268, 1185-1188.
- 8 Scholz T., Schneider G. A., **Muñoz Saldaña J.** and Swain M. V. Fracture toughness from submicron derived indentation cracks. *Applied Physics Letters*. (2004) 84(16): 3055-3057.
- 9 García González L., Morales Hernández J., Bartola Pérez J. P., Ceh Soberanis O., **Muñoz Saldaña J.** and Espinoza Beltrán F. J. Study on amorphous TiAlN films produced by radiofrequency reactive sputtering. *Revista Mexicana de Física*. (2004) 50(3): 311-318.
- 10 Felten F., Schneider G. A., **Muñoz Saldaña J.** and Kalinin S. V. Modeling and measurement of surface displacement of BaTiO₃ bulk material in piezoresponse force microscopy (PFM). *Journal of Applied Physics*. (2004) 96(1): 563-568.
- 11 Hurtado Macías A., González Hernández J., **Muñoz Saldaña J.**, Herrera Fierro P., García Jiménez P., Espinoza Beltrán F.J., Scholz T. and Schneider G. A. Mechanical characterization of thin amorphous tungsten-carbon (W-x C-y) films prepared by DC-cosputtering. *Vacuum*. (2004) 76: 173–176.
- 12 Morales Hernández J., García González L., **Muñoz Saldaña J.** and Espinoza Beltrán F. J. Structure and mechanical properties of (Ti,Al)(B,N) coatings fabricated by reactive DC magnetron sputtering. *Vacuum*. (2004) 76: 161–164.
- 13 Morales Hernández J., Velázquez Salazar J., García González L., Espinoza Beltrán F. J., Barceinas Sánchez J. D. **Muñoz Saldaña J.** Structure and thermal stability of ball milled Ti-Al-H powders. *Journal of alloys and compounds*. (2005) 388(2): 266-273
- 14 Schneider G. A., Scholz T., **Muñoz Saldaña J.** and Swain M.V. Domain rearrangement during nanoindentation in single-crystalline barium titanate measured by atomic force microscopy and piezoresponse force microscopy. *Applied Physics letters*. (2005) 86(19): 192903.
- 15 García González L., Morales-Hernández J., Espinoza Beltrán F. J., **Muñoz Saldaña J.**, Scholz T. and Schneider G. A. Thermal stability, structure and mechanical properties of TiSiN coatings prepared by reactive DC-magnetron sputtering. *Materials Science Forum*. (2006) 509: 93-98.

- 16 Cortés Escobedo C. A., **Muñoz Saldaña J.**, Jaramillo Viguera D., Espinoza Beltrán F. J. Preparation of size controlled of nanometric spheres of colloidal silica for synthetic opal manufacture. *Materials Science Forum*. (2006) 59 :187-192.
- 17 Scholz T., **Muñoz Saldaña J.**, Swain M.V. and Schneider G. A. Indentation size effect in barium titanate with spherical tipped nanoindenters. *Applied Physics Letters*. (2006) 88(9): 091908.
- 18 Avila Herrera C. A., Gómez Guzmán O. D., Almaral-Sánchez J. L., Yáñez-Limón, J. M. **Muñoz Saldaña J.** and Ramírez Bon R.. Mechanical and thermal properties of SiO₂-PMMA monoliths. *Journal of Non Crystalline Solids*. (2006) 352: 3561–3566.
- 19 Beltran, F. J. Espinoza, **Muñoz-Saldaña, J.**, Torres-Torres, D., Torres-Martinez, R., Schneider, G. A. Atomic force microscopy cantilever simulation by finite element methods for quantitative atomic force acoustic microscopy measurements. *Journal Of Materials Research*. (2006) 21(12): 3072-3079
- 20 Espinoza Beltrán F.J., Scholz T., Schneider G.A., **Muñoz Saldaña J.**, Rabe U. and Arnold W. Finite-Element Simulation of Cantilever Vibrations in Atomic Force Acoustic Microscopy. *Journal of Physics*. (2007) 61: 293-297.
- 21 López R., Aguilar E. A., **Muñoz Saldaña J.**, and Zárata J. Mechanical Properties of YAG:Eu, Nd Fibers by Nanoindentation Method. *Microscopy and Microanalysis*. (2007) 13(S2): 612-613.
- 22 Flores Ramírez N., Luna Bárcenas G., Vásquez García S. R., **Muñoz Saldaña J.**, Elizalde Peña E. A., Gupta R. B., Sánchez I. C., and González Hernández J. Hybrid natural-synthetic chitosan resin: thermal and mechanical behavior. *Journal of Biomaterials Science Polymer Edition*. (2008) 19(2): 259-273.
- 23 Zarate Medina J., López Juárez R., Aguilar Reyes E.A., **Muñoz Saldaña J.** Synthesis and Characterization of YAG: Eu Spray Dried Powders. *Journal of Processing Ceramic Research*. (2008) 9(1): 79-82.
- 24 Hurtado Macías A., **Muñoz Saldaña J.**, Espinoza Beltrán F. J., Scholz T., Swain M. V. and Schneider G. A. Indentation Size effect in soft PZT ceramics with tetragonal structure close to the MPB. *Journal of Physics D: Applied Physics*. (2008) 41(3) 035407.
- 25 Fragiél A., Staia M. H., **Muñoz Saldaña J.**, Puchi Cabrera E. S., Escobedo C. and Cota L. Influence of the N₂ partial pressure on the mechanical properties and tribological behavior of zirconium nitride deposited by reactive magnetron sputtering. *Surface and Coatings Technology*: (2008) 202(15): 3653-3660.
- 26 Cortés Escobedo C., **Muñoz Saldaña J.**, Bolarín Miró A. M., Sánchez de Jesús F. Determination of strontium and lanthanum zirconates in YPSZ-LSM mixtures for SOFC. *Journal of Power Sources*. (2008) 180(1): 209-214.
- 27 Fragiél A., Machorro R., **Muñoz Saldaña J.**, Salinas J. and Cota L. Correlation between optical characterization of the plasma in reactive magnetron sputtering deposition of Zr-N on SS 316L and surface and mechanical properties of the deposited films. *Applied Surface Science*. (2008) 254(15): 4632-4637.
- 28 Mayén Mondragón R., Yáñez Limón J. M., Espinoza Beltrán F., **Muñoz Saldaña J.**, Ramírez Bon R., Montero Camacho O. and Rocha Gallardo H. Statistical characterization of the lapping plate surface morphology evolution in a diamond charging process. *Measurement Science and Technology*. (2008) 19(6): 065706.
- 29 Bejarano G., Caicedo J. and **Muñoz Saldaña J.** Mechanical and tribological properties enhancement of heat treated AISI 4340 steel by using a TiN/TiAlN multilayer coating system. *Revista Facultad de Ingeniería Universidad de Antioquia* (2008) 44: 36-42.
- 30 García González L., Hernández Torres J., Mendoza Barrera C., Meléndez Lira M, García Ramírez P., Martínez Castillo J., Saucedo A., L. Herrera A., **Muñoz Saldaña J.**, and Espinoza-Beltran F. Relationship Between Crystalline Structure and Hardness of Ti-Si-

- N-O Coatings Fabricated by dc Sputtering. *Journal of Materials Engineering and Performance*. (2008) 17(4): 580-585.
- 31 López R., Zárate J., Aguilar E. A. and **Muñoz Saldaña J.** Preparation of neodymium-doped yttrium aluminum garnet powders and fibers. *Journal of rare earths* (2008) 26 (5): 670-673.
 - 32 García-Gonzalez L., Hernandez-Torres J., Flores-Ramirez N., Martínez-Castillo J., García-Ramirez P. J., **Muñoz Saldaña J.** and Espinoza-Beltran F. J. Microstructural Analysis of TiAlxNyOz Coatings Fabricated by DC Reactive Sputtering. *Journal of Materials Engineering and Performance*. (2009) 18(1): 102-105.
 - 33 Yate L., Caicedo J. C., Hurtado Macías A., Espinoza Beltrán F. J., Zambrano G., **Muñoz Saldaña J.** and Prieto P. Composition and mechanical properties of AlC, AlN and AlCN thin films obtained by r.f. magnetron sputtering. *Surface and Coatings Technology*. (2009) 203(13): 1904-1907.
 - 34 Gaillard Y., Hurtado Macías A., **Muñoz Saldaña J.**, Anglada M. and Trápaga Martínez G. Nanoindentation of BaTiO₃: Dislocations nucleation and mechanical twinning. *Journal of Physics D: Applied Physics*. (2009) 42(8): 085502.
 - 35 Espinoza-Beltrán F.J., Geng K., **Muñoz Saldaña J.**, Rabe U, Hirsekorn S. and Arnold W. Simulation of vibrational resonances of stiff AFM cantilevers by finite element methods. *New Journal of Physics*. (2009) 11: 083034.
 - 36 Hurtado Macias A., Torres-Heredia V. , **Muñoz Saldaña J.**, Espinoza Beltrán F. J., Vargas Ortiz R. A., Torres-Torres D., Hernández Landaverde M. A. and González-Hernández J. Surface texture and tetragonality of mechanically affected powders and sintered ceramics of BaTiO₃. *Materials Research Innovations*. (2009) 13(3): 391-395.
 - 37 Vargas Ortíz A., **Muñoz Saldaña J.**, Espinoza Beltrán F. J. Mechanosynthesis and reactive sintering of Ba_{1-x}Sr_xTiO₃ Ceramics. *Materials Research Innovations*. (2009) 13(3) 368-371.
 - 38 Flores Noria J. R., Ma. G. Rivera Ruedas, F. J. García Rodríguez, **Muñoz Saldaña J.**, S. Y. Bucio Hernández, Ma. Garnica Romo, R. Flores Farías R., J. M. Yáñez Limón. PZT ferroelectric ceramics obtained by sol-gel method using 2-metoxxyethanol route for pyroelectric sensors. *Materials Research Innovations*. (2009) 13(3): 375-378.
 - 39 Montes de Oca, J., Gonzáles, H. J., Solís, E., Moreno, J., **Muñoz-Saldaña J.** Aplicación de un recubrimiento de TiAlN para el incremento de la resistencia al desgaste de una compuerta de paso fabricada en acero T9. *Revista mexicana de física*. (2009) 55(5) :378-386.
 - 40 Amaya C, Aperador W., Caicedo J.C., Espinoza-Beltrán F.J., **Muñoz Saldaña J.**, Zambrano G., Prieto P. Corrosion study of Alumina/Yttria-Stabilized Zirconia (Al₂O₃/YSZ) nanostructured Thermal Barrier Coatings (TBC) exposed to high temperature treatment. *Corrosion Science*. (2009) 51(12): 2994-2999.
 - 41 López R., Aguilar E.A., Zárate-Medina J., **Muñoz Saldaña J.**, Lozano Mandujano D. Nanoindentation of melt-extracted amorphous YAG and YAG:Eu, Nd micrometric fibers synthesized by the citrate precursor method. *Journal of the European Ceramic Society*. (2010) 30(1): 73-79.
 - 42 Sanchez J.E., Sánchez O.M., Ipaz L., Operador W., Caicedo J.C., Amaya C., Hernández Landaverde M.A., Espinoza Beltrán F.J., **Muñoz Saldaña J.**, Zambrano G. Mechanical, tribological, and electrochemical behavior of Cr_{1-x}Al_xN coatings deposited by r.f. reactive magnetron co-sputtering method. *Applied Surface Science* (2010) 256: 2380–2387.
 - 43 Caicedo JC, Amaya C, Yate L, Operador W., Zambrano G, Gómez ME, Alvarado Rivera J, **Muñoz Saldaña J.**, Prieto P. Effect of applied bias voltage on corrosion-resistance for TiC_{1-x}N_x and Ti_{1-x}Nb_xC_{1-y}N_y coatings. *Applied Surface Science*. (2010) 256(9): 2876-2883.

- 44 de Oca JAM, Ceballos Alvarez J, Galaviz-Perez J, Manaud JP, Lahaye M, **Muñoz Saldaña J.** Preparation of thin films of the Ti-Al-O system by rf-sputtering. *Revista Mexicana de Fisica.* (2010) 56(2): 118-124.
- 45 Alvarado Rivera J., **Muñoz Saldaña J.**, Ramirez Bon R. Nanoindentation testing of SiO₂-PMMA hybrid films on acrylic substrates with variable coupling agent content. *Journal of Sol-Gel. Science and Technology.* (2010) 54(3): 312-318.
- 46 Hurtado Macías A., Dominguez-Ríos C., **Muñoz Saldaña J.**, Tórres-Sánchez R., Pérez-García S. A., Gonzalez-Hernandez J. Effect of surface substrate roughness and of chelating Agent on the microstructure and Mechanical Properties of Electroless Processed Brass coatings. *Ind. Eng. Chem. Res.* (2010) 49: 6388–6393.
- 47 Caicedo J.C., C. Amaya, L. Yate, M.E. Gómez, G. Zambrano, J. Alvarado-Rivera, **Muñoz Saldaña J.**, Prieto P. TiCN/TiNbCN multilayer coatings with enhanced mechanical properties. *Applied Surface Science.* (2010) 256(20): 5898-5904.
- 48 Torres Torres D., Trejo Valdez M., Castañeda L., Torres Torres C., Tamayo Rivera L., Fernández Hernández R. C., Reyes Esqueda J. A., **Muñoz Saldaña J.**, Rangel Rojo R., and Oliver A. Inhibition of the two-photon absorption response exhibited by a bilayer TiO₂ film with embedded Au nanoparticles. *Optics Express.* (2010) 18(16): 16406-16417.
- 49 Torres-Torres D., **Muñoz Saldaña J.**, Gutierrez-Ladron-de Guevara L. A., Hurtado-Macías A., Swain M. V. Geometry and bluntness tip effects on elastic-plastic behaviour during nanoindentation of fused silica: Experimental and FE simulation Modelling and Simulation in Materials Science and Engineering. (2010) 18 (7): 075006.
- 50 Moreno H, Caicedo J. C., Amaya C., **Muñoz-Saldaña J.**, Yate L., Esteve J. and Prieto P. Enhancement of surface mechanical properties by using TiN BCN/BN (n)/c-BN multilayer system. *Applied Surface Science.* (2010) 257(3): 1098-1104.
- 51 Cabrera G., Caicedo J. C., Amaya C., Yate L., Muñoz-Saldaña J. and Prieto P. Enhancement of mechanical and tribological properties in AISI D3 steel substrates by using a non-structural CrN/AlN multilayer coating. *Materials Chemistry and Physics.* (2011) 125(3): 576-586.
- 52 Gallego Cano, Jorge Luis., Ramírez Vinasco, Deisy., Riascos Landázuri, Henry., Ipaz, Leonid., **Muñoz Saldaña J.** Películas delgadas de CN_x formadas por PLD a diferentes temperaturas. CN_x thin films grown by PLD at different temperaturas. *Ingeniería y Desarrollo.* (2011) 29(1): 50-60.
- 53 Alvarado Rivera J., **Muñoz Saldaña J.** and Ramírez Bon R. Determination of fracture toughness and energy dissipation of SiO₂-poly(methyl metacrylate) hybrid films by nanoindentation. *Thin Solid Films.* (2011) 519(16): 5528–5534.
- 54 Juárez de la Rosa B. A., **Muñoz Saldaña J.**, Torres Torres D., Ardisson P. L., Alvarado Gil J. J. Nanoindentation characterization of the micro-lamellar arrangement of black coral skeleton. *Journal of Structural Biology.* (2012) 177(2): 349–357.
- 55 Park M.S., Stephenson M.K., Shannon C., Diaz L.A.C., Hudspeth K.A., Gibbons S.L., **Muñoz Saldaña J.**, Arroyave R. Experimental and computational study of the morphological evolution of intermetallic compound (Cu₆Sn₅) layers at the Cu/Sn interface under isothermal soldering conditions. *Acta Materialia* (2012) 60(13-14): 5125-5134.
- 56 Mayen Mondragon R., Yanez Limon J. M., Espinoza Beltran F., **Muñoz Saldaña J.**, Herrera Gómez A., Vargas Ortiz R.A., Ramirez Bon R. and Coronado F. Following the Integration of Diamond Particles on the Lapping-Plate Surface: Towards a More Efficient Charging Process. *Journal of Tribology-Transactions of The ASME.* (2012) 134 (4): 042301.
- 57 Alvarado Orozco J. M., Morales-Estrella R., M. S. Boldrick, J. L. Ortiz Merino, D. G. Konitzer, Trápaga Martínez G. and **Muñoz Saldaña J.** First Stages of Oxidation of Pt-

- Modified Nickel Aluminide Bond Coat Systems at Low Oxygen Partial Pressure. *Oxidation of Metals*. (2012) 78(5-6): 269-284.
- 58 Rivera Ruedas R., Ramírez López L. M., Sánchez de Jesús F., Bolarín Miró A., **Muñoz Saldaña J.**, Yáñez Limón J. M. Thermal Characterization of PZT Ceramics Obtained by Mechanically Activated Mixed Oxides Using Different Pb Sources. *International Journal of Thermophysics*. (2012) 33(12): 2366-2376.
 - 59 Rivera-Rodríguez C.V., Morales Sanchez E., Gonzalez Hernández J., Prokhorov E., **Muñoz Saldaña J.**, Trapaga Martínez G.. Estimate of the Crystallization Kinetics in Stoichiometry Compositions Films of Ge: Sb: Te. *Journal of Surface Engineered Materials and Advanced Technology* (2012) 2(1): 44-46,
 - 60 Ruiz Luna H., Alvarado Orozco J. M., Cáceres Díaz L. A., López Báez I., Moreno-Palmerín J., Espinoza-Beltrán F. J., Boldrick M. S., Trápaga-Martínez G. and **Muñoz Saldaña J.** Structural evolution of B2-NiAl synthesized by high-energy ball milling. *Journal of Materials Science*. (2013) 48(1): 265-272.
 - 61 Lozano Mandujano D., Zárate Medina J., Morales Estrella R. and **Muñoz Saldaña J.** Synthesis and mechanical characterization by nanoindentation of polycrystalline YAG with Eu and Nd additions. *Ceramics International* (2013) 39(3): 3141–3149.
 - 62 Trejo Arroyo D., Zarate Medina J., Alvarado Orozco J., Contreras García M. E., Boldrick M. and **Muñoz Saldaña J.** Microstructure and mechanical properties of Al₂O₃–YSZ spherical polycrystalline composites. *Journal of the European Ceramic Society*. (2013) 33(10): 1907–1916.
 - 63 Ruiz-Luna H, Lozano-Mandujano D. Alvarado-Orozco J. M., Valarezo A., Poblano Salas C., Trápaga-Martínez G. , Espinoza-Beltrán F. J. and **Muñoz Saldaña J.** “Effect of HVOF Processing Parameters on the Properties of NiCoCrAlY Coatings by Design of Experiments”. *Journal of Thermal Spray Technology* 23[6] (2014) pp. 950-961.
 - 64 Cruz M.P., Valdespino D., Gervacio J.J., Herrera M., Bueno-Baques D., Durán A., **Muñoz Saldaña J.**, García Castro A.C., Espinoza Beltrán, F.J., Curiel M., Siqueiros J.J. “Piezoelectric and ferroelectric response enhancement in multiferroic YCrO₃ films by reduction in thickness” *Materials Letters* 114 (2014) 148–151.
 - 65 C.A. Poblano-Salas, J.A. Cabral-Miramontes, A. Gallegos-Melgar, H. Ruiz-Luna, J.D. Aguilar-Escobar, D.G. Espinosa-Arbelaez, F. Espinoza-Beltrán, G. Trapaga-Martínez, **Muñoz Saldaña J.** “Effects of VC additions on the mechanical properties of bimodal WC–Co HVOF thermal sprayed coatings measured by nanoindentation”. *Int. Journal of Refractory Metals and Hard Materials* 48 (2015) 167–178.
 - 66 M. Esquivel-Gaon, S. Anguissola, D. Garry, A.C. Gallegos-Melgar, **Muñoz Saldaña J.**, K.A. Dawson, A. De Vizcaya-Ruiz, and L.M. Del Razo. “Bismuth-based nanoparticles as the environmentally friendly replacement for lead-based piezoelectrics”. *The Royal Society of Chemistry* 5 (2015) 27295–27304.
 - 67 J. M. Alvarado-Orozco, R. Morales-Estrella, M. S. Boldrick, G. Trapaga-Martinez, B. Gleeson, **Muñoz Saldaña J.** “Kinetic Study of the Competitive Growth Between θ -Al₂O₃ and α -Al₂O₃ During the Early Stages of Oxidation of b-(Ni,Pt)Al Bond Coat Systems: Effects of Low Oxygen Partial Pressure and Temperature”. *Metallurgical and Materials Transactions A*, 46(2) (2015) 726-738.
 - 68 I. López-Báez, C.A. Poblano-Salas, **Muñoz Saldaña J.**, and L.G. Trápaga-Martínez. “Effects of the Modification of Processing Parameters on Mechanical Properties of HVOF Cr₂C₃-25NiCr Coatings”. *Journal of Thermal Spray Technology* 24(6), (2015), 938-946.
 - 69 J.E. García-Herrera, J.M. Alvarado-Orozco, **Muñoz Saldaña J.**, L. Garcia-Fresnillo, G.H. Meier. “The Effect of Different SO₂/SO₃ Catalytic Media on High-Temperature Corrosion Processes (Hot Corrosion, Fireside Corrosion, Sulfidation–Oxidation)”. *Oxidation of Metals* (2015), 84(3-4), 233-240.

- 70 A.O. Okonkwo, P. Jagadale, J.E. García Herrera, V.G. Hadjiev, **Muñoz Saldaña J.**, A. Tagliaferro, et al., High-toughness/low-friction ductile epoxy coatings reinforced with carbon nanostructures, *Polym. Test.* 47 (2015) 113–119.
- 71 K. Valdez, D.G. Espinosa-Arbelez, J.E. García-Herrera, **Muñoz Saldaña J.**, M.H. Farias, and W. De la Cruz. “Influence of substrate temperature and N₂/Ar flow ratio on the stoichiometry, structure and hardness of TaN_x coatings deposited by DC reactive sputtering”. *Surface and Interface Analysis* In print (2015) 47(11):1015-1019.
- 72 Gallegos-Melgar, A., Espinosa-Arbelaez, D. G., Flores-Ruiz, F. J., Lahmar, A., Dellis, J. -L., Lemee, N., Espinoza-Beltran, F. J., **Muñoz Saldaña J.** Ferroelectric properties of manganese doped (Bi^{1/2}Na^{1/2})/TiO₃ and (Bi^{1/2}Na^{1/2})/TiO₃–BaTiO₃ epitaxial thin films, *Appl. Surf. Sci.* 359 (2015) 923–930.
- 73 Hernández Muñoz W, Serrato Rodríguez J, **Muñoz Saldaña J.** Zarate Medina J, Synthesis of lanthanum aluminate by reverse chemical precipitation using pseudoboehmite as alumina precursor, *Appl. Radiat. Isot.* 117 (2016). doi:10.1016/j.apradiso.2016.01.026.
- 74 Rincón-López, J. A., Fernández-Benavides, D. A., Giraldo-Betancur, A. L., Cruz-Muñoz, B., Riascos, H., & **Muñoz Saldaña J.** (2016). Bi₄Si₃O₁₂ thin films for scintillator applications. *Applied Physics A: Materials Science and Processing*, 122(4), 1–8. <http://doi.org/10.1007/s00339-016-9921-1>.
- 75 Cáceres-Díaz, L. A., Alvarado-Orozco, J. M., Ruiz-Luna, H., Edison García-Herrera, J., Mora-García, A. G., Trápaga-Martínez, G., Arroyave, R., **Muñoz Saldaña J.** (2016). Study of the Isothermal Oxidation Process and Phase Transformations in B₂-(Ni,Pt)Al/RENE-N5 System. *Metals*, 6(208), 1–13. <http://doi.org/10.3390/met6090208>
- 76 Ruiz-Luna, H., Porcayo-Calderon, J., Alvarado-Orozco, J. M., García-Herrera, J. E., Martínez-Gomez, L., Trápaga-Martínez, L. G., **Muñoz Saldaña J.** (2016). Electrochemical Corrosion of HVOF- Sprayed NiCoCrAlY Coatings in CO₂ - Saturated Brine Electrochemical Corrosion of HVOF-Sprayed NiCoCrAlY Coatings in CO₂ - Saturated Brine. *Journal of Thermal Spray Technology*. <http://doi.org/10.1007/s11666-016-0449-x>.
- 77 Ruiz-Luna H, Porcayo-Calderon J, Alvarado-Orozco JM, Mora-García AG, Martinez-Gomez L, Trápaga-Martínez LG, **Muñoz Saldaña J.** (2017) Influence of oxidation treatments and surface finish on the electromechanical behavior of HVOF Ni-20Cr coatings. *Journal of Materials Engineering and Performance*; doi: 10.1007/s11665-017-3048-1.
- 78 Lozano-Mandujano D, Poblano-Salas CA, Ruiz-Luna H, Esparza-Esparza B, Giraldo-Betancur AL, Alvarado-Orozco JM, Trapaga-Martinez LG, **Muñoz Saldaña J.** (2017) Thermal Spray Deposition, Phase Stability and Mechanical Properties of La₂Zr₂O₇/LaAlO₃ Coatings. *Journal of Thermal Spray Technology* 26: 1198-1206; doi:10.1007/s11666-017-0569-y.
- 79 Osorio DM, Caicedo JC, Aperador W, Benitez-Castro AM, Giraldo-Betancur AL, **Muñoz Saldaña J.**, Yañez-Limón JM, Sanchez O, Zambrano G. Characterization of mechanical properties and electrochemical behaviour in a Hank’s solution of 316L/Cr_{1-x}Al_xN system. *IOP Conf. Series: Journal of Physics: C786* (2017) 012037; doi:10.1088/1742-6596/786/1/012037
- 80 Rico M, Rodriguez R, Zapata VH, Medina-Barreto MH, Cruz-Muñoz B, Tabares JA, Benitez-Castro AM, Giraldo-Betancur AL, **Muñoz Saldaña J.** Solid state synthesis of Bi_{0.4}Sr_{0.6}FeO_{3-δ} powder for SOFC applications. *Hyperfine Interact* (2017) 238:57; doi: 10.1007/s10751-017-1427-5.
- 81 **Muñoz-Saldaña, J.**, Schulz, U., Rodríguez, G. M., Cáceres-Díaz, L. A., Lau, H. (2018). Microstructure and lifetime of Hf or Zr doped sputtered NiAlCr bond coat/7YSZ EB-

- PVD TBC systems. *Surface and Coatings Technology*, 335, 41-51. DOI: 10.1016/j.surfcoat.2017.12.017.
- 82 Rincón-López, J. A., Hermann-Muñoz, J. A., Giraldo-Betancur, A. L., De Vizcaya-Ruiz, A., Alvarado-Orozco, J. M., **Muñoz-Saldaña, J.** (2018). Synthesis, Characterization and In Vitro Study of Synthetic and Bovine-Derived Hydroxyapatite Ceramics: A Comparison. *Materials*, 11(3), 333. DOI: 10.3390/ma11030333.
 - 83 Fernandez-Benavides, D. A.^D, Gutierrez-Perez, A. I., Benitez-Castro, A. M., Ayala-Ayala, M. T., Moreno-Murguía, B., **Muñoz-Saldaña, J.** (2018). Comparative Study of Ferroelectric and Piezoelectric Properties of BNT-BKT-BT Ceramics near the Phase Transition Zone. *Materials*, 11(3), 361. DOI: 10.3390/ma11030361.
 - 84 Mora-García, A. G.^D, Ruiz-Luna, H., Mosbacher, M., Popp, R., Schulz, U., Glatzel, U., **Muñoz-Saldaña, J.** (2018). Microstructural analysis of Ta-containing NiCoCrAlY bond coats deposited by HVOF on different Ni-based superalloys. *Surface and Coatings Technology*, 354, 214-225. DOI: 10.1016/j.surfcoat.2018.09.025.
 - 85 Hermann-Muñoz, J. A., Rincón-López, J. A., Clavijo-Mejía, G. A., Giraldo-Betancur, A. L., Alvarado-Orozco, J. M., Vizcaya-Ruiz, D., **Muñoz-Saldaña, J.** (2019). Influence of HVOF parameters on HAp coating generation: An integrated approach using process maps. *Surface and Coatings Technology* 358: 299-307 DOI: 10.1016/j.surfcoat.2018.11.029.
 - 86 Rincón-López, J. A., Hermann-Muñoz, J. A., Fernandez-Benavides, D. A., Giraldo-Betancur, A. L., Alvarado-Orozco, J. M., **Muñoz-Saldaña, J.** (2019). Isothermal phase transformations of bovine-derived hydroxyapatite/bioactive glass: a study by design of experiments. *Journal of the European Ceramic Society* 39(4): 1613-1624. DOI: 10.1016/j.jeurceramsoc.2018.11.021.
 - 87 Fernández-Benavides D.A., Cervera-Chiner L., Jiménez Y., Arias de Fuentes O., Montoya A., **Muñoz Saldaña J.** A novel bismuth-based lead-free piezoelectric transducer immunosensor for carbaryl quantification. *Sensors and Actuators B: Chemical* 285, 15 (2019), 423-430. <https://doi.org/10.1016/j.snb.2019.01.081>.
 - 88 Rincón-López, J.A., Hermann-Muñoz, J.A., Cinca-Luis, N., Garrido-Dominguez, B., García-Cano, I., Guilemany-Casadamon, J.M., Alvarado-Orozco, J.M., **Muñoz Saldaña, J.** (2019) Preferred Growth Orientation of Apatite Crystals on Biological Hydroxyapatite Enriched with Bioactive Glass: A Biomimetic Behavior. *Crystal Growth and Design*, 19, 5005–18. DOI:10.1021/acs.cgd.9b00268.
 - 89 Gómez-Esparza, C.D., Pérez-Bustamante, R., Alvarado-Orozco, J.M., **Muñoz Saldaña, J.**, Martínez Sánchez, R., Olivares-Ramírez, J.M., Duarte-Moller, A. (2019) Microstructural Evaluation and Nanohardness of an AlCoCuCrFeNiTi High-Entropy Alloy. *International Journal of Minerals, Metallurgy and Materials*, 26 (5), 634–641. DOI:10.1007/s12613-019-1771-3.
 - 90 Garcia-Herrera, J.E., Espinosa-Arbeláez, D.G., Cáceres Díaz, L.A., Mondragón Rodríguez, G.C., Ruiz Luna, H., González Hernández, J., Trápaga-Martínez, L.G., **Muñoz Saldaña, J.**, Alvarado Orozco, J.M. (2019) Effect of Pre-Oxidation Treatments on the Structural, Microstructural, and Chemical Properties of β -(Ni,Pt)Al System. *Surface and Coatings Technology*, 367, 156–64. DOI:10.1016/j.surfcoat.2019.03.057.
 - 91 Clavijo-Mejía, G.A., Espinosa Arbeláez, D.G., Hermann Muñoz, J.A., Giraldo-Betancur, A.L., **Muñoz Saldaña, J.** (2019) Effect of HVOF Process Parameters on TiO₂ Coatings: An Approach Using DoE and First-Order Process Maps. *Journal of Thermal Spray Technology*, 28, 1160–72. DOI:10.1007/s11666-019-00895-9.
 - 92 Valdespino, D., Rojas George, G., **Muñoz Saldaña, J.**, Moreno Murguía, B., Cruz Jáuregui, M. (2019) Controlling Micro-Porous Size in TiO₂ Pellets Processed by Sol-Gel and Rapid Liquid Phase Sintering. *Ceramics International*, 45, 14510–6. DOI:10.1016/j.ceramint.2019.04.154.

- 93 Jiménez García, F.N., Giraldo Torres, L. R., Segura Giraldo, B., Giraldo Betancur, A.L., **Muñoz Saldaña, J.**, “Effect of Growing Conditions and Post Treatments on Calcium Phosphate Films Obtained by Electrodeposition” *Journal of Surface Science and Technology* (2019) 35(1-2).DOI:10.18311/jsst/2019/21052.
- 94 Ruiz Luna H., Porcayo Calderón J., Mora Garcia A.G., López Baez, I., Martínez Gómez, L., **Muñoz Saldaña, J.** (2019) Corrosion Performance of AISI 304 Stainless Steel in CO₂-Saturated Brine Solution. *Physicochemical problems of materials protection* 55(6), 1226-1235.DOI:10.1134/S2070205119060261.
- 95 Rivera Gil, M.A., Gómez- Chavez, J.J., Ramana, C. V., Naraparaju, R., Schulz, U., **Muñoz Saldaña, J.** (2019) High Temperature Interaction of Volcanic Ashes with 7YSZ TBC's Produced by APS: Infiltration Behavior and Phase Stability. *Surface and Coatings Technology*, 378, 124915.DOI:10.1016/j.surfcoat.2019.124915.
- 96 Pérez andrade, L.L., Gärtner, F., Villa vidaller, M., Klassen, T., **Muñoz Saldaña, J.**, Alvarado Orozco, J.M. (2019) Surface & Coatings Technology Optimization of Inconel 718 Thick Deposits by Cold Spray Processing and Annealing. *Surface & Coatings Technology*, 378 124997.DOI:10.1016/j.surfcoat.2019.124997.
- 97 Mora García, A.G., Mosbacher, M., Hastreiter J., Völkl R., Glatzel, U., **Muñoz Saldaña, J.** (2020) Creep behavior of polycrystalline and single crystal Ni-based superalloys coated with Ta-containing NiCoCrAlY by high-velocity oxy-fuel spraying. *Scripta Materialia* 178, 522–526. DOI:10.1016/j.scriptamat.2019.12.023.
- 98 Montoya Quesada, E., Villaquiran-Caicedo, M.A., Mejía de Gutiérrez, R., **Muñoz Saldaña, J.** (2020) Effect of ZnO content on the physical, mechanical and chemical properties of glass-ceramics in the CaO–SiO₂–Al₂O₃ system. *Ceramics International*.DOI: 10.1016/j.ceramint.2019.10.154.
- 99 Clavijo Mejía, G.A., Hermann Muñoz, J.A., Rincón López, J.A., Ageorges, H., Muñoz Saldaña, J. (2020) Bovine-Derived Hydroxyapatite Coatings Deposited by High-Velocity Oxygen-Fuel and Atmospheric Plasma Spray Processes: A Comparative Study. *Surface and Coatings Technology* 381, 125193.DOI:10.1016/j.surfcoat.2019.125193.
- 100 Martínez-Villegas, I., Mora-García, A.G., Ruiz-Luna, H., McKelliget, J. Poblano-Salas, C.A., Muñoz-Saldaña, J., Trápaga-Martínez G. Swirling (2020) Effects in Atmospheric Plasma Spraying Process: Experiments and Simulation. *Coatings* 10(4), 388. doi.org/10.3390/coatings10040388
- 101 Rincón-López, J.A., Hermann-Muñoz, J.A., Cinca-Luis, N., López-Conesa, L., Fernandez Benavides, D.A., García-Cano, I., Guilemany-Casadamón, J.M., Boccaccini, A.R., Muñoz-Saldaña, J., and Alvarado-Orozco, J.M. (2020) Apatite mineralization process from Silicocarnotite bioceramics: Mechanism of crystal growth and maturation. *Crystal Growth & Design* Manuscript: DOI: 10.1021/acs.cgd.0c00322.
- 102 Cardenas Terrazas, P., Ayala Ayala, M.T., Muñoz Saldaña, J., Fuentes A.F., Leal Chavez, D.A., Ledezma Sillas, J.E., Carreño Gallardo, C., Herrera Ramirez, J.M. (2020) High ionic conductivity dysprosium and tantalum Co-doped bismuth oxide electrolyte for low-temperature SOFCs. *Ionics*. Manuscript: DOI: 10.1007/s11581-020-03572-y
- 103 Hermann-Muñoz, J.A., Rincón-López, J.A., Fernández-Benavides, D.A., Detsch, R., Alvarado-Orozco, J.M., Boccaccini, A.R., Muñoz-Saldaña, J. (2020) In-vitro bioactivity and cytotoxicity of polarized (Bi_{0.5}Na_{0.5})TiO₃ ceramics as a novel biomaterial for bone repair, *Materials Letters*, doi: <https://doi.org/10.1016/j.matlet.2020.128078>
- 104 Hernández Muñoz, W., Zárate Medina, J., Serrato Rodríguez, J., & Muñoz Saldaña, J. (2020). Synthesis and characterization of 50-50 wt. lanthanum aluminate-lanthanum zirconate composite dried by spray-drying. *MRS Advances*, 1-7. doi:10.1557/adv.2020.270
- 105 Garcia-Herrera, J.E., Espinosa-Arbelaez, D.G., Cáceres-Díaz, L.A., Muñoz-Saldaña, J., Alvarado-Orozco, J.M. (2020) Effect of grit-blasting on the competitive growth between

- θ -Al₂O₃ and α -Al₂O₃ during the oxidation of β -(Ni,Pt)Al bond coat systems, *Materials Letters*, doi: <https://doi.org/10.1016/j.matlet.2020.128288>
- 106** Mora García, A.G., Ruizz Luna ,H., Alvarado Orozco, J.M., Mondragon Rodriguez, G.C., Schulz, U., Muñoz Saldaña, J. (2020) Microstructural analysis after furnace cyclic testing of pre-oxidized ReneN5/(Ni,Pt)Al/7YSZ thermal barrier coatings, *Surface and Coatings Technology* 403, 126376, <https://doi.org/10.1016/j.surfcoat.2020.126376>.
- 107** de Leon Nope, G.V., Perez-Andrade, L.I., Corona-Castuera, J., Espinosa-Arbelaez, D.G., Muñoz-Saldaña, J., Alvarado-Orozco, J.M. (2021) “Study of volumetric energy density limitations on the IN718 mesostructure and microstructure in laser powder bed fusion process”. *Journal of Manufacturing Processes* 64, 1261-1272.
- 108** Perez, S., Muñoz Saldaña, J., Acelas, N., Florez, E. (2021) Phosphate removal from aqueous solutions by heat treatment of eggshell and palm fiber. *Journal of Environmental Chemical Engineering* 9 (1) 104684.
- 109** Ayala-Ayala, M.T. Ferrer-Pacheco, M., Muñoz-Saldaña, (2021) J. Manufacturing of photoactive β -bismuth oxide by flame spray oxidation. *Journal of Thermal Spray Technology* 30, 1107-1119.
- 110** Rincón-López, J.A., Hermann-Munoz, J.A., Cinca-Luis, N., Fernandez-Benavides, D., García-Cano, I., Guilemany-Casadamon, J.M., Boccaccini, Aa.R., Muñoz-Saldaña, J., Alvarado-Orozco, J.M. (2021) “Accelerated bioactive behavior of Nagelschmidite bioceramics: Mimicking the nano and microstructural aspects of biological mineralization”. *Journal of the European Ceramic Society* 41 (15), 7921-7934.
- 111** Muñoz-Saldaña, J., Valencia-Ramirez, A., Castillo-Perea, L.A., Díaz-De la Torre, S., Caceres-Diaz, L.A., Alvarado Orozco, J.M., Giraldo Betancur, A.L., Schulz, U (2021) “Oxidation behavior of dense Yttrium doped B2-NiAl bulk material fabricated by ball milling self-propagating high-temperature synthesis and densified by spark plasma sintering”. *Surface and Coatings Technology* 421, 127488.
- 112** Ramirez-Muñoz, A., Perez, S., Muñoz Saldaña, J., Florez, E. Acelas, N., (2021) Eco-friendly materials obtained through a simple thermal transformation of water hyacinth (*Eichhornia Crassipes*) for the removal and immobilization of Cd²⁺ and Cu²⁺ from aqueous solutions. *Environmental Nanotechnology, Monitoring & Management* 16, 100574.
- Gutiérrez-Pérez, A.I., Ayala-Ayala, M.T., Mora-García, A.G., Moreno-Murguía, B., Ruiz-Luna, H. and Muñoz-Saldaña, J. Visible-light photoactive thermally sprayed coatings deposited from spray-dried (Na_{0.5}Bi_{0.5})TiO₃ microspheres *Surf. Coatings Technol.* **427**, (2021).
- 113** Perez, S., Muñoz Saldaña, J., Garcia-Nunez, JA, Acelas, N., Florez, E. (2022) Unraveling the Ca–P species produced over the time during phosphorus removal from aqueous solution using biocomposite of eggshell-palm mesocarp fiber. *Chemosphere* 287 (3),132333.
- 114** Moreno-Murguía, B., Mora-García, A.G., Canales-Siller, H., Giraldo Betancur, A.L., Espinoza Arbelaez, D. G., Muñoz Saldaña, J., (2022) “Influence of stand-off distance and pressure in copper coatings deposition efficiency and particle velocity”, *Surface and Coatings Technology* 430, 127986.
- 115** Flores Jimenez, M., Rivera Tello, C.D., Perez-Alvarez, J., Chavez, J., Bravo Barcenás, D., Muñoz Saldaña, J., Flores-Martínez, M. (2022) “Tribological behavior of multiphase super hard boron nitride films deposited by HiPIMS”, *Materials Letters* 318, 132167.
- 116** Leon, M., Alvarez, D., Valarezo, A., Bejarano, L., Viteri, D., Giraldo Betancur. A.L., Muñoz Saldaña, J., Alvarez-Barreto, J. (2022) “Electrodeposition of Chitosan Ti-6Al-4V surfaces: A study of process parameters”, *Materials Research* 25, 1-10.

- 117** Guijosa-Garcia, C. Y., Rivera-Gil, M.A., Ramana, C.V., Naraparaju, R., Schulz, U., Muñoz Saldaña, J., (2022) “Reaction products from high temperature treatments of $(\text{La}_x\text{Gd}_{1-x})_2\text{Zr}_2\text{O}_7$ system and volcanic ash powder mixtures”, *JOM* 74, 2791–2808.
- 118** Cáceres Díaz, L., González Ornelas, O., Pérez Bustamante, R., García Herrera, J., Nango Blanco, M., González Carmona, J., Muñoz Saldaña, J. (2022). Mechanical Reinforcement of AISI1018 Steel by a Ni-based Self-fluxing Alloy Coating Applied by Plasma Transferred Arc (PTA). *Microscopy and Microanalysis*, 28(S1), 2850-2852.
- 119** Nango-Blanco, M., Colmenares, N., Cáceres-Díaz, L., Alvarado-Orozco, J., & Muñoz-Saldaña, J. (2022). Gas Shielding and Stand-off-distance Effects in Ti-6Al-4V Protective Coatings Deposited by Electric Arc Thermal Spraying for Aluminum Die Casting Molds. *Microscopy and Microanalysis*, 28(S1), 2826-2828.
- 120** Ayala-Ayala, M.T. Dillert, R., Muñoz-Saldaña, J., Bahnemann, D. (2022) J. Methanol photooxidation in a black body like reactor using bismuth-based heterojunctions. *Applied Catalysis A*. 648, 118926.
- 121** Hernandez-Hernandez, M. Gonzalez Mejia, R., Mercado Lemus, V., Gallegos Melgar, A., Muñoz Saldaña, J. Mayén, J. (2023) A correlational study of process parameters on properties of low-pressure cold sprayed copper coatings. *The international Journal of Advanced Manufacturing Technology* 125, 4679-4691.
- 122** Hermann-Muñoz, J.A., Rincon-Lopez, J.A., Detsch, R., Alvarado Orozco, J.M., Muñoz Saldaña, J., Boccaccini, A. R. (2023), Effect of poling direction of $(\text{Na}_{0.5}\text{Bi}_{0.5})\text{TiO}_3$ ceramics on the in vitro response of MC3T3-E1 preosteoblasts and bacteria. *Ceramics International* 49 (11) Part B, 18800-18808.
- 123** Prokhorov, E., Luna-Barcenas, G., Yanez Limon, J.M., Muñoz Saldaña, J. (2023) Flexoelectricity and piezoelectric effects in poly (vinyl alcohol)- SrTiO_3 nanocomposites *Materials Research Bulletin* 166 (112361), 1-9.
- 124** Hernandez-Navarro, C., Perez, S., Florez, E., Acelas, N., Muñoz-Saldaña, J. (2023) Sargassum macroalgae from Quintana Roo as raw material for the preparation of high-performance phosphate adsorbent from aqueous solutions. *Journal of Environmental Management* 342 (118312), 1-10.
- 125** Gutierrez-Perez, A.I., Ayala-Ayala, M.T., Mora-García, A.G., Hernandez-Navarro, C., Pérez, S., Díaz-Real, J.A., González-Hernández, J., Muñoz-Saldaña, J. (2023) Top-Down Approach for the Deposition of Photoactive $(\text{Na}_{0.5}\text{Bi}_{0.5})\text{TiO}_3$ -Based Heterojunctions by Flame Spray: Analysis of Deposition Parameters. *Journal of Thermal Spray Technology* 6, 1-17.
- 126** Vicente-Mendoza, M., Mora-García, A., Muñoz-Saldaña, J., Juárez-López, F., (2023) High-Temperature Oxidation of MCrAlY Coating Modified by Alumina Deposited by an MOCVD Process. *High Temperature Corrosion of Materials*, 1-15.
- 127** Bedoya-Trujillo, I.F., Pérez, S., Guijosa-García, C.Y., Rivera-Gil, M.A., Naraparaju, R., Zárate-Medina, J., Muñoz-Saldaña, J. (2023) Evaluation of the reactivity of dense lanthanum-gadolinium zirconate ceramics with Colima volcanic ashes. *Surface and Coatings Technology* 470, 129825.

F. RESEARCH GRANTS

- **Determination of mechanical properties of NiCoCrAlY and (NiPt)-Al based bond coats used in thermal barrier coatings (2016-2020)** Conacyt – DLR (Germany)
- **CENAPROT National Laboratory – Conacyt (2014-2020).**
- **FORMER Grants:**
 - **National:** 15 (Conacyt basic science, frontiers of science, infrastructure, national laboratories, Concyteq, etc)
 - **International:** 8 (Brazil (2), USA (2), Germany (3), France (1)).

G. ACTIVITIES OF TECHNOLOGICAL DEVELOPMENT

Major industry projects: 4 (Hitachi, Mextrauma, Biograft, General Electric Aviation).

Technology transfer: 3; Industry specialized advising: 5, design of new products or processes: 2; Adaptations: 3. Patents applications: 2.

H. SYNERGISTIC ACTIVITIES

- Member of the Mexican Academy of Sciences since 2008.
- Member of the Scientific Board of 2 Latin-American Technical/Scientific Journals.
- Member of the American Ceramic Society (2003)
- Member of Researchers in Science and Technology of Materials Foundation (FORISTOM) since 2019
- A.v. Humboldt – Georg Foster Fellow for experienced researchers (2015-2018).
- Humboldt Ambassador Scientist of the Alexander von Humboldt Foundation 2019-2024.
- National Researcher (SNI) Level III since 2020.
- Associate editor in Frontiers in Materials Journal.
- Active Referee for more than 10 professional journals and 4 conference proceedings